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Organizational complexity: leadership and change in research-intensive academic departments

Thesis for the degree of Philosophiae Doctor

Trondheim, January 2013

Norwegian University of Science and Technology
Faculty of Social Sciences and Technology Management
Programme for Teacher Education



NTNU – Trondheim
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Preface

The present thesis is a product of my journey into the field of organizational studies in higher education institutions which started nine years ago. I feel grateful to have found a research area that fascinated and challenged me. During this period I had the chance to meet a lot of fantastic people that inspired me, believed in my ideas and in different ways supported me throughout this journey.

I would like to thank Professor Arild Tjeldvoll who guided my first steps in the study of leadership in higher education when I was still new to this country and whose conscientious advices and motivating thoughts were present even when he was on the other side of the world. I want to express my sincere gratitude to my supervisor Professor May Britt Postholm for her careful and dedicated guidance. I would like to thank her for her inestimable support, encouraging attitude and for believing in my ability in pursuing this study especially in its most critical and challenging moments.

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Part 1: A Framework for Analyzing University Leadership

1. Focus and Problem Statement

The growth of the public sector of higher education in most parts of the world has been accompanied by a redefinition of universities' social contract as the number and interests of different stakeholders have expanded and diversified (Berdahl & McConnell, 1999; Castells, 1994; Clark, 1998; Gibbons, Limoges, Nowotny, Schwartzman, Scott, & Trow, 1994; Gibbs, Knapper, & Piccinin, 2009; Jacob, 2000; Ramsden, 1998; Tjeldvoll, 1998/1999). In Norway system level reforms and policies implemented in recent years have followed international developments in higher education policy by restructuring the degree system, promoting internationalization, increasing commercialization of knowledge and, more important, transforming the relation between universities and society and the state. Recent higher education policies seek to provide institutions with greater autonomy from the state and to increase accountability to the stakeholders and society in general (KUF- NOU, 2000). In this context, a number of positions are prevalent in the debate on university leadership (Bleiklie, 2005). On one extreme, we find the defenders of a traditional model of university leadership, claiming that recent transformations have contributed to the decline of a once consolidated model of governance. On the other extreme, we find the modernization enthusiasts who defend the idea that the traditional governance model of higher education is now inappropriate and that a business-like model is necessary to enhance the capacities of universities to respond more efficiently to social and economic demands. The goal of this study is to discuss the activity of leadership in academic departments in the context of changes in terms of teaching and learning in research-intensive universities.

So far, most studies into departmental leadership have focused on the role of individuals in formal leadership positions trying to identify characteristics of leadership behavior associated with efficiency and effectiveness (Bryman, 2007a). This is a common tendency in organizational studies (Sims, 2010). The aim of the present study is to bring a different perspective into this debate by analyzing university leadership in the context of change and in the light of complexity theory, which is a relatively new perspective within the study of

organizations. Some of the key concepts of complexity theory, such as emergence, interdependence, non-equilibrium, non-linearity and multicausality, have been presented as important tools not only for the study of organizations but also for the study of diversity and change in a broader perspective (Mitleton-Kelly, 2003). These are the result of a multidisciplinary development that has been characterized by some as a new worldview (Dent, 1999; Liang, 2010; Tôrres, 2005). The overriding problem statement is thus phrased as such: *how can leadership in academic departments be conceptualized in processes of complex organizational change?*

1.1 Choice of topic

The objective of the present study is to discuss the activity of departmental leadership in research-intensive universities where the context is marked by organizational changes in higher education institutions. The choice of this research topic was in part motivated by the perceived limitations of theories I used in my previous studies. This research builds on my earlier study on organizational changes in higher education, the Master of Philosophy thesis entitled “Academy-Industry Relations in Brazil: an exploratory study into resource dependence and managerial autonomy of research groups in public universities” (Bento, 2004). In this study I applied resource dependency theory to understand the new relations between research groups within universities in Brazil and Brazilian industry, and to discuss the issue of autonomy of such groups in setting their own agendas and managing their resources. It was my first attempt to look at changes in higher education institutions by focusing on academic departments where the environment is characterized as research-intensive. Although resource dependency theory contributed to the understanding of some features of organizational change in higher education, it seemed to me that studying leadership demanded an approach more focused on internal interrelations and dynamics that were the result of the interplay of different causes. Between my Master’s degree studies and my enrollment in the PhD program in Norway, I worked in a university in the United Kingdom as research assistant in a project on leadership and diversity in higher education. The United Kingdom has progressed much further than Norway in terms of implementing market-oriented reforms and establishing a more managerial type of university governance. I could thus observe that the university where I was working had many managerial levels, various outreach units and an organizational structure that in many ways differed from the

traditional model of collegial leadership in higher education. During this time, it was never clear to me if and how this managerial model (and even my own work in this system) impacted what I have always conceived as the main activities in universities: research and teaching.

In a higher education institution, the academic department or its subunit is usually the main activity system for most academic staff. As Gibbs, Knapper and Picinin (2007, p. 1) claim, “especially in collegial research-intensive universities with highly devolved organizational structures, departments and programs are the key organizational units when it comes to understanding change”. The literature about teaching and departmental leadership emphasizes that the exhortation to teach better – or to facilitate better learning – will have little impact unless departmental cultures are conducive to better teaching (Knight & Trowler, 2000; Martin, Prosser, Ramsden, & Trigwell, 2003). Of course departments are not the only space where academic staff experience their professional relations. Most research staff are also members of scientific associations, editorial boards and have an international professional network. But still academic departments are important spaces in which staff experience leadership and contact with students at both undergraduate and graduate level. That is why this study focused primarily on academic departments. Much more than only for the sake of delimitations, the focus on teaching rather than also on research is due to the perceptions of challenges caused by the expansion of access of higher education. The opening, restructuring and refinancing of higher education during the past two decades has meant that classes are not only larger but also more diverse in terms of student cultural background, motivation and skills (Nyggaard & Holtham, 2008). This fact has generated a discussion on how university teaching should change to cope with this context. It has been suggested that a change in educational paradigm from a teaching-centered to a learning-centered approach is necessary to provide higher education with the capacity to prepare increasingly more diversified students for the knowledge-based economy which is characterized by a high degree of unpredictability (Biggs, 2007).

However, another argument that I develop here is that changes always require some level of learning (Bateson, 1972). In this sense, deep rather than incremental change in terms of educational practices requires processes of reflection in terms of worldviews. This is a topic that has been addressed in organizational studies under the labels of “organizational learning” and “knowledge management” as discussed in chapter 4 and more specifically in the case of

higher education in chapter 6 and article IV. Therefore, one main motivation of the study is to reflect upon the relation between processes of complex change, learning and leadership in academic departments. The word “process” in itself demands further reflection as it is discussed in chapters 3 and 4. In the conceptual dimension of this thesis, I discuss an understanding of processes compatible with the science of complexity in terms of un-linear movements over time marked by unpredictability.

1.2 Research rationale and structure of the thesis

This study presents one theoretical, conceptual dimension and one empirical dimension. These two dimensions are obviously interrelated. The empirical component of this study is based on investigations of perceptions of leadership in one academic department in Norway and in one renowned American private higher education institution. The choice of cases will be further explained in the methodology section but it can be anticipated here that the reason why an American department was chosen is that policy documents in Europe give a strong impression of a successful American system (Olsen & Maassen, 2007). The main empirical focus is on research-intensive university environments because whereas “teaching-focused” universities appear to be more likely to achieve significant progress in implementing learning and teaching strategies, progress seems to have been much less rapid, extensive, or securely embedded in research-intensive institutions where the collegial organizational culture militates against bureaucratic and corporate approaches to management (Gibbs et al., 2007). The goal of the empirical component of this study is not to draw generalizable conclusions about higher education institutions either in Norway or in the US. It is rather to provide an empirical basis to reflect upon key issues related to organizational change in universities in two different contexts. Rather than generalizations, the two fieldworks provided “fuel for thought” upon the complexities expressed in terms of stability and change in two different contexts.

In order to reconceptualize leadership, this thesis has two dimensions. One dimension is a *conceptual* one in which I discuss epistemological and ontological implications of complexity theory and compare with other approaches used to investigate leadership in higher education. The main topics in relation to this dimension are:

- To discuss the *philosophical implications* of the use complexity theory to the study of systems of human organization such higher education institutions and academic departments within these. (Goal A)
- To identify common aspects and differences of complexity theory with *theories of change leadership and organizational culture change* previously applied to investigate changes in higher education. (Goal B)

Such questions are the main focus of chapter 3 and 4 in which I discuss emergence as an ontological and epistemological principle and a view towards organizational change as processes of movement over time highlighting a temporal over a spatial dimension. The focus on emergence influenced many aspects of a conceptual discussion as well as the choice of methods in the empirical part of this study. I introduce my choice of research method in chapter 3 and further develop this discussion in chapter 7.

In the *empirical* dimension, the ambition is to investigate how change leadership is perceived and implemented in the academic context, with a particular focus on Norwegian higher education in a transition phase. The main goals of the present study can be listed in the following terms:

- To understand how leadership in the two academic departments are *perceived to respond to challenges* brought about by globalization. What are the *perceptions of change*? (Goal C)
- To understand how *departmental leadership and quality teaching are understood* in the academic environment in the two institutions. (Goal D)

To achieve these goals in the empirical dimension, it is important to formulate research questions focusing on the perceptions of organizational cultural change among department leaders and lecturers. During my two fieldwork sessions in academic departments in Norway and the USA I interviewed faculty and analyzed other evidence sources with a view to answering the following empirical research questions:

- How do *departmental leaders perceive their own activity* in relation to teaching? (Question A)
- How do *lecturers perceive their departmental leaders activity* in improving quality of teaching? (Question B)
- How do *lectures perceive their own teaching*? Any *perceptions of change*? (Question C)

Articles II and III address the empirical research questions. The fragments of organizational reality in the shape of perceptions presented by participants are analyzed and interpreted in the light of the perspective of complexity theory. The overriding problem formulation of this study expresses a concern with reconceptualizing leadership in the light of the development of complexity theory and its application to the study of human organization. However, research always involves an ongoing process of reflection of the contribution of the theoretical framework followed by the researcher. Bearing that in mind, this study aims at reflecting on the application of complexity theory to field of higher education studies. This concern is thus expressed in the following terms:

- How can complexity theory help us to *understand leadership and change* in higher education institutions? (Contribution A)
- How can academic departments be *led in adaptive ways*? (Contribution B)

My main reflections regarding these two contributions are presented mainly in the two final chapters (9 and 10) of part 1. However, it is possible to identify reflections related to the goals, the research questions and the contributions in different parts of the study. For instance, even in chapters that have a primarily theoretical character, it is possible to identify references to reflections that emerged from the analysis of the empirical data. Nevertheless, it is clear that each chapter in part I and the articles in part 2 address each of the above mentioned goals in a more direct way.

The following table aims at locating the goals and the ambitions of the study in different chapters of part I and articles in part 2:

Table 1:

Locating different goals and contribution in the overall structure of the thesis

<i>Conceptual Dimension</i>	
- Goal A	C3, C4, C9, C10, A-I, A-IV
- Goal B	C3, C4, C5, C6, C9, C10, A-I, A-IV
<i>Empirical Dimension</i>	
- Goal C	C7, C8, C9, A-II, A-III
- Goal D	C7, C8, C9, A-II, A-III
<i>Contribution A</i>	C4, C9, C10, A-IV
<i>Contribution B</i>	C9, C10, A-IV

Chapters 1, 2, 3, 4, 5, 6, 7, 8, 9, 10: C1, C2, C3, C4, C5, C6, C7, C8, C9, C10
Articles I, II, III and IV: A-I, A-II, A-III and A-IV

The intention of this study is to contribute to a better understanding of current transformations in higher education as well as to the development of theory regarding change in organizational studies. However, it has not been the objective of this study to present any sort of guide for leadership practice or more practical information on how successful strategies can be transferred from one context to another. It is important to make this clarification, as we are in a political and even historical context where leadership is regarded as a major factor – if not the main factor – for organizational success. Policy-makers claim that in autonomous institutions, the quality of management, communication and decision-making processes is decisive to survival in a competitive environment. This assumption will be discussed throughout this study which takes its point of departure from the following claim made by Simkins (2007):

Ideas about leadership which are predicated upon the assumption that ‘what works’ can be identified, prescribed and replicated are inadequate ways of conceiving the concept and often may be inappropriate and unhelpful. My argument is that, in the leadership world, ‘making sense of things’ is at least as important as ‘seeking what works’. (p. 10)

This study applies concepts from a rising perspective in organizational studies to discuss changes in higher education. It is thus in the area of studies in higher education I expect this study to have its main contribution and novelty. Although some would expect that a study of this kind would bring suggestions of practical solutions to existing problems, the perspective that I adopted here is a different one. Complexity theory is related with unpredictability and the recognition of the loss of linear connections between cause and effect in organizational life. Rather than something that can be brought under control, manipulated and designed, complexity is here assumed to be an intrinsic characteristic of the world where we live. In the specific case of human organization, this new perspective has brought an interest in the interactional and paradoxical nature of leadership and how it is related to stability and the emergence of different patterns of behavior (Johannessen, 2009). In these terms, rather than providing “solutions”, this new perspective might bring changes to practice by providing practitioners and policy-makers with a new way of looking at organizational reality and developing innovative practices in the context of complexity of their own activities.

The thesis has the following structure: in part 1, I present the theoretical framework highlighting concepts of complexity theory that contribute to a new understanding of organizational changes in higher education institutions. Universities and academic departments will be presented here as sets of relationships that we call systems. These will be analyzed as complex adaptive systems (CASs). They are complex in the sense that new patterns of behavior arise from multiple and interconnected factors, and, are adaptive in the sense that learning occurs in process of interdependence and systems can change. As these systems are nested in other systems (Sterling, 2004) and sustainability is a central issue in this discussion, I look at changes in the environment surrounding higher education institutions. In part 1, I also discuss the ontological and epistemological implications of this approach and classical approaches to organizational change. In the methodology chapter, I discuss the relation between complexity and interpretive research.

In the analysis chapter, I will present the four articles, demonstrate the relation between them and present a conceptual bridge based on a discussion of “edge of chaos” to chapters 9 and 10 which have an interpretive character. The articles are presented in a chronological order which will illustrate how my perspective towards organizational change in higher education developed during the four years during which this project was conducted.

Figure I illustrates of the research rationale of this study:

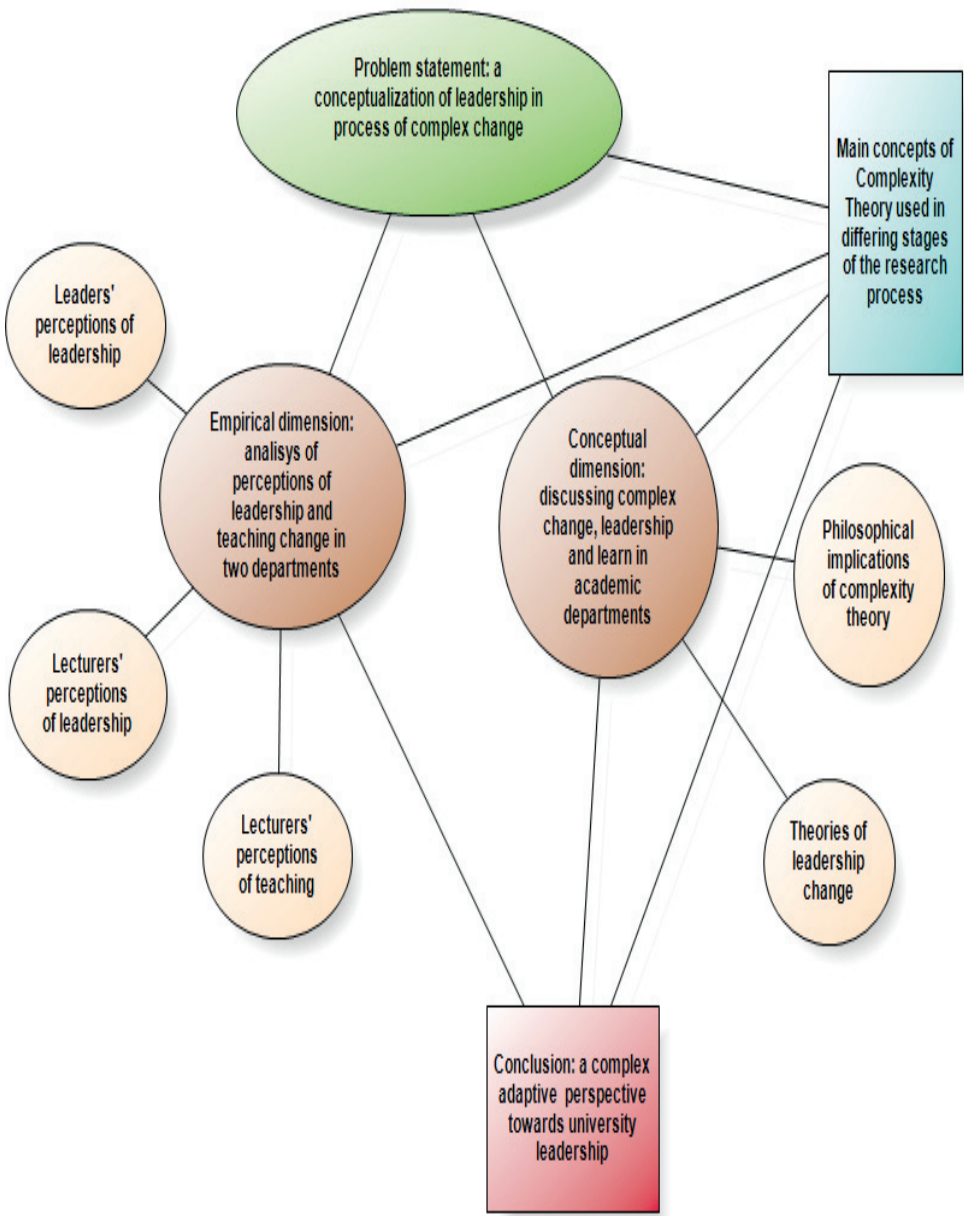


Figure 1: Graphic representation of the rationale of this study

The articles themselves will be presented in part two. As each article stands a separate study, it was at times difficult to avoid some overlapping as they share the same theoretical framework and some of the same assumptions. However, the articles were written in different stages of this study and aimed at answering different research questions. However, a further clarification needs to be done regarding the structure of this thesis. Although the initial plan was that it would take the format of a collection of articles connected by a synopsis, during my research process I felt that some of my main reflections needed some more space to be discussed than the scope of four articles could provide. Therefore this space (Part 1) which was originally planned to be the synopsis became longer and broader than the articles themselves. Bearing that in mind, this thesis assumes a format that is somewhat a hybrid one between a monograph and a collection of articles which has been informally labeled by some colleagues in my department as a “stereography”.

In the next chapter I begin by presenting the policy context in which Norwegian higher education institutions are located. In discussing sustainable changes in academic departments, understanding the political and economic context is important, as the policy environment represents the overall system in which the CASs that I investigate are nested.

2. Sustainability, Nesting Systems and the Changing Higher Education Landscape

The perspective I apply in this study is one that sees organizations as complex adaptive systems (Stacey, 2006; 2010), which I understand as sets of relationships characterized by non-linearity, interdependence and emergence. However, before deepening the discussion on each of these characteristics, I would like to present higher education institutions as nested systems and, hereby discuss the environment surrounding these in terms of sustainability. Sterling (2004, p. 52) presents the following definition of sustainability: “sustainability is the ability of a system to sustain itself in relation to its environment”. Brown and Wolf (1988, para. 1) present another definition that, by incorporating a time-spatial dimension, completes Sterling’s definition: “a sustainable society is one that satisfies its needs without undermining the prospects of future generations”. The challenge of creating social and cultural environments in which we can satisfy present needs without restraining the possibilities of future generations has been identified by ecologists as the main challenge of our time (Capra, 1996, p. 4).

However, the idea sustainability has evolved over time and still today it is not free of misconceptions. Sometimes it is presented portraying an image of stability and equilibrium in nature. In particular, early ideas regarding the achievement of a global society emphasized the practice of effective management controlling change and growth. Ahern (2011) describes this early view of sustainable practices towards sustainability as a “fail-safe mentality” based on the hope that effective management practices were essential to meet social and economic needs and correct environmental mistakes of previous generations. In this earlier thinking, sustainability is idealized as a durable and long-term property that once achieved through effective practices, would last for generations. On the other hand, during the second half of the twentieth century an alternative non-equilibrium paradigm in science brought a new understanding of sustainability focusing on emergence and assuming that natural and social systems (nested into natural systems) are always diverse, uncertain and tend to change in rather unpredictable ways (Ahern, 2011). Here the static view of sustainability is questioned rising the discussion about the characteristics of planning and decision-making structures in an ever changing world. Non-equilibrium (Pascale, 2006; Stacey, 1996, 2001, 2006, 2010; Tosey, 2002; Tsoukas & Hatch, 2006; Waldrop, 1992) is a property of complex systems which will be discussed in deeper in the next chapter. However, it is important to clarify at

this stage that this is my understanding of sustainability which is compatible with the complex perspective that permeates this study.

Living systems are always subsystems of larger contexts. Thus we can observe educational systems composed by institutions and policies, as subsystems of a wider society. Governance of such institutions is to a large extent guided by a sense of demands, values and regulations from the social systems. However, rather than passively adapting to a wider system, there is a co-evolutionary relationship which is an important aspect of change in all system levels (Walby, 2003; Stacey, 1996).

Figure 2 illustrates the view of education nested into a wider social system:

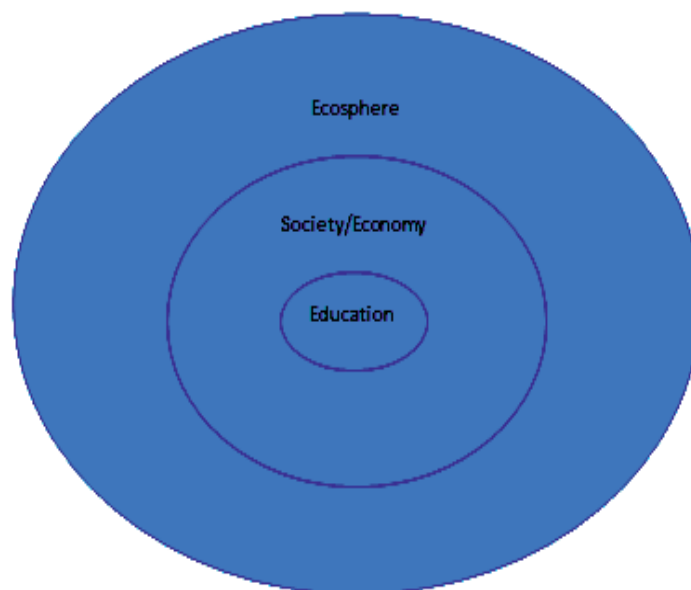


Figure 2: Education, society/economy, and ecosphere as nesting systems (Sterling, 2004, p. 52)

In this sense “systems failure” (Chapman, 2002) might be identified as “objectives not being met”, “inappropriate objectives”, or “undesirable side effects”. Most of the criticism in the public debate in Europe on higher education emphasizes the first idea of failure by describing a scenario of inefficiency. It is this claim that permeates policy reforms implemented in Europe during the last two decades. Understanding the European dimension of higher education is particularly important as, although universities have historically had both a transnational and a local dimension, current visions for the future of higher education seem to be increasingly related with the European integration process. Current concepts of quality now to a larger extent have their origins at the European level than at the national level. Historically, higher education institutions have played a role in supplying states with educated manpower, building national consciousness and identity, integrating national elites, and providing a national research capacity for economic and social developments (Gornitzka, Maassen, Olsen, & Stensaker 2007). Nonetheless, in recent years we have witnessed the consolidation of a European perspective on university governance as a reflex of a variety of stakeholders and agents beyond national territorial states (van Vught, 1996; van der Wende & Westerheijden, 2001; Westerheijden, 2002, 2007). A wide range of intergovernmental initiatives are expressed in new processes of cooperation and policy making that play a fundamental role in setting standards of assessment and accreditation.

2. 1 The European dimension

As part of the eight hundredth anniversary of the University of Sorbonne, Ministers responsible for higher education in France, Germany, Italy and the United Kingdom signed the “Joint declaration on harmonisation of the architecture of the European higher education system” which was based on the assumption that:

The European process has very recently moved some extremely important steps ahead. Relevant as they are, they should not make one forget that Europe is not only that of the Euro, of the banks, of the economy: it must be a Europe of knowledge as well. We must strengthen and build upon the intellectual, cultural, social and technical dimensions of our continent. These have to a large extent been shaped by its universities, which continue to play a pivotal role for their development. (Allegre, Berlinger, Blackstone, & Rüttgers, 1998, p. 1)

A year later, Ministers of education from 29 European countries met in Bologna and signed the “Joint Declaration on the European Higher Education Area”, which stated more explicitly the policies to be adopted for the consolidation of the European Area of Higher Education. Implementation of the Bologna Declaration in the individual signatory states is commonly referred to as the “Bologna Process”. Both documents rapidly became a major focus of public attention. Although these documents have been presented as a turning point in European higher education, there has been much confusion about their significance and content. The most usual interpretation has been that after a long period of distinct development, higher education structures in Europe are to be harmonized, which would enhance free movement of students and teachers and free choice of study and workplaces (Hackl, 2001).

By assuming that if we are to understand university transformations, it is necessary to go beyond routine and incremental change by focusing on the conceptualization of current dynamics as a search of a new pact between universities and environments (Gornitzka et al., 2007), the next section discusses the knowledge economy and the ideal of a “Europe of Knowledge”.

2.1.1 The concept of a “Europe of Knowledge” and political discourses on the US system

The world economy has been transformed in the last three decades by the growing importance of international markets for national economic development in a context of growing functional interdependency between countries throughout the world. There is no doubt that knowledge and information have historically been important aspects in all modes of development, as the level of production always depended on some level of knowledge and processing of information. What then is the specificity of the role of knowledge in post-industrial societies? For Castells (2000), the specificity of production in the post-industrial era is essentially the centrality of the role played by knowledge:

information processing is focused on improving technology of information processing as a source of productivity, in a virtuous circle of interaction between the knowledge sources of technology and the application of technology to improve knowledge generation and information processing: this is why, rejoining popular fashion I call this mode of development informational, constituted by the emergence of a new technological paradigm based on information technology. (p. 19)

Thus, as knowledge becomes the critical point of production and as innovation becomes a more specialized process, universities become a fundamental tool of development. In the words of Castells (1994, p. 16), “if knowledge is the electricity of the new informational-international economy, then institutions of higher education are the power sources in which the new process development must rely”. According to this view, universities are critical in fulfilling missions such as providing the labour force that is necessary for processes of technological transfer and technology development, both in terms of specific skills, and in terms of general learning ability.

Policy papers from the European Commission (2003; 2004; 2005) share the assumption that the new economy is knowledge-based in the sense that it relies on the production of new knowledge. Universities are seen through an instrumental perspective in the process of consolidation of a “Europe of Knowledge” as able to compete in the knowledge world economy. It is claimed that:

The knowledge society depends for its own growth on the production of new knowledge, its transmission through education and training, its dissemination through information and communication technologies, and on its use through new industrial process or services. Universities are unique, in that they take part in all these process, at their core, due to the key role they play in the three fields of research and exploitation of its results, thanks to industrial cooperation and spin-off; education and training, in particular training of researchers; and regional and local development, to which they contribute significantly. (European Commission, 2003, p. 2).

The Commission locates European universities at the crossroads of research, education and innovation by, in many respects, holding the key to the knowledge economy and society. The same report briefly recognizes university contributions to other objectives such as employment and social cohesion, and to the improvement of the general level of education in Europe. The European Commission (2003) identifies six challenges European universities are facing:

- Increased demand for higher education: this is due to the increasing demand for lifelong learning and to the need of certain countries to increase the number of students in higher education.

- The internationalization of education and research: internationalisation is regarded as a result of competition between universities and between countries, but also between universities and other institutions, particularly public research laboratories.
- The development of effective and close co-operation between universities and industry: the Commission identifies this challenge based on the assumption that from a competitiveness perspective it is vital that knowledge flows from universities into business and society. It is argued that cooperation between university and industry needs to be intensified at the national and regional levels, as well as geared effectively towards innovation.
- The proliferation of places where knowledge is produced: this development linked with the increasing tendency of the business sector to subcontract their research activities to the best universities indicates that universities are being challenged to operate in an increasingly competitive environment.
- The reorganization of knowledge: such a reorganization is seen in a blurring of the borders between fundamental and applied research, although it does not remove the difference between them. American research universities are seen as examples of successful balancing, making themselves attractive partners for industry, which in turn provides them with substantial funding.
- The emergence of new expectations: this challenge consists of new educational needs in education and training resulting from the knowledge-based economy and society. These are expressed as the increasing need for scientific and technical education, horizontal skills and opportunities for lifelong learning, which require greater permeability between the components and the levels of the education and training systems.

It is possible to trace direct or indirect links from all the challenges identified by the Commission to the issue of competitiveness. Competitiveness is indeed a driving force behind

the concept of a Europe of knowledge, as is suggested by the Commission. This is usually presented in at least two ways. First, the contribution of European universities to economic growth and competitiveness is emphasized. Second, the need for European universities to compete in a global education market, which is expressed through the assumption that European universities are “lagging behind”: “the European university world is not trouble-free, and the European universities are not at present globally competitive with those of our major partners, even though they produce high quality scientific publications” (European Commission 2003, p. 2). The same policy documents describe American research universities as Europe’s major competitors and usually presuppose that the success of American higher education is the result of the marketization of their system, and of high private investments in education coupled with low state intervention (Gornitzka et al., 2007, p. 211). According to Frazer (1997) and Brennan and Shah (2000), public policy reforms implemented in Europe in the 1980s and 1990s aimed at securing quality and responsiveness to external demands by:

- stimulating competition within and between institutions;
- making institutional use of public funds more accountable;
- assigning institutional status as a response to increased diversity within higher education;
- assisting the mobility of students (within and across national borders);
- assessing new (and often private) higher education institutions, and;
- supporting the transfer of authority from the state to the institutions.

The expansion of the higher education system and the pressure to be more responsive to societal needs have intensified the debate among policy makers on quality and quality assurance. In September 1998, the Council of Ministers adopted the Recommendation on European Cooperation in quality assurance in higher education (Council of European Union, 1998). The Recommendation called upon member states to support the establishment of quality assurance systems and to encourage higher education institutions and competent authorities to cooperate and exchange experience. The most concrete result of this development was the creation of the European Network for Quality Assurance in Higher Education (ENQA). All member states and other European countries have set up quality assurance systems or are about to do so. Policy documents claim that “the moment has come

to take decisive steps to achieve genuine mutual recognition of quality assurance and accreditation systems and assessments and let quality assurance contribute effectively to our shared objective of making European higher education a ‘world quality reference’” (European Commission, 2004). The next section narrows the analysis of this process down from the European to the Norwegian context.

2.2 The Norwegian dimension

The Quality Reform that was formally approved by Parliament in 2001 and implemented in 2003 was a set of policy level measures aimed at moving away from a Norwegian tradition of being a conservative and slow reformer in higher education (Bleiklie, Høstaker, & Vabø, 2000). Norway has been at the cutting edge of reforms and their implementation following recommendations from the Bologna declaration. Rather than only improving higher education institutions, the Reform had the overall ambition of transforming Norway into a leading country in the knowledge-based world economy. According to Bleiklie (2009, p. 139), the reform consisted of three main axes:

The implementation of the *Study Program Reform* that complied with recommendations from the Bologna declaration by introducing the “3+2+3” (bachelor + masters + PhD) degree structure. The objective here was to make study programs more efficient by shortening completion time. For institutions, it meant more responsibility for efficiency and the necessity to implement new teaching methods and to provide more frequent feedback to students.

Internationalization: which was mostly expressed in terms of increasing student mobility for Bachelor’s degree students.

Organizational changes: motivated by a discussion on the formal status of higher education institutions in relation to the State, changes in governance structures within institutions and changes in funding patterns with the adoption of an incentive based element that emphasizes efficiency in production of student credits and publication.

Although these three elements are interconnected, the third one is the main focus of this study. The initial recommendation was that higher education institutions would have their status changed from special “civil service institutions” to “public enterprises”. The main implication for leadership of the suggested changes was that leaders at each organizational level would be appointed by superior authorities rather than being elected at the local level, which had traditionally been the case in higher education institutions (Michelsen & Aamodt, 2007). As these changes encountered severe opposition, the Ministry of Education and Research left each institution to decide whether they would introduce the centralized leadership model or keep the traditional electoral model. The new legislation that was passed in 2005 kept higher education institutions’ status as civil service institutions and again left it to the institutions to choose their own internal organizational structure (Bleiklie, 2009). Since then, many institutions have adopted mixed solutions by appointing leaders at departmental levels but keeping the traditional elected model of leadership at the faculty and senior management positions. In most cases, this meant that department heads were attributed a stronger role than before. Whereas previously department heads were elected from amongst the faculty, their authority today formally derives from their position as chosen from an upper hierarchical level.

An evaluation study conducted by Michelsen and Aamodt (2007) observed that while senior managers claim that this new structure increased the viability of the Quality Reform, 42% of university staff pointed out that this organizational approach limited both their autonomy and their flexibility. For policymakers, the main argument supporting more institutional autonomy and more centralized leadership is that more than ever institutions have to compete with each other for students, research funds, and other resources. The report points out that smaller institutions which have historically been more dedicated to teaching face the challenge of increasing their research load in order to expand their funding patterns. On the other hand, large research institutions face different challenges as the new incentive-based funding system highlights the centrality of students, although there is also competition for research grants. This is a new and challenging situation for institutions that have historically seen research as their main activity.

2.3 Conceptualizing the Norwegian context

Bleiklie, Ringkjøb, & Østergren (2006, p. 12) present three governance models in higher education that are based on different perceptions of democracy and visions of accountability. Rather than being seen as accurate descriptions of the organizational reality in higher education institutions, these should be understood as ideal types, as we can identify elements from each of them in every institution. However, the balance between these three models certainly varies in different contexts, indicating different perceptions of the universities' relation with society, objectives, and both internal and external power relations. The three models are:

The *Social* model departs from the recognition that universities are public institutions and should therefore be influenced by democratically elected authorities as in other branches of public administration. The authors claim that while the authority of public officials has historically been expressed in terms of setting overriding regulations, there is a shift now towards authority being expressed in terms of establishing goals. While the reforms arguably provide institutions with more autonomy, they also reward institutions for satisfying publicly formulated goals. On the other hand, there is also an increasing presence of representatives of different stakeholders on university boards which represents an attempt to increase external social influence on internal decisions.

The *Academic* model is based on the authority of the professionals with scientific competence. This is expressed through the traditional collegial model of management in higher education. Here the principle of collegiality guides decision-making in all levels of the organization and it is expected that leaders have high academic competence, which is a guiding criterion when leaders are elected.

The *Party* model emphasizes the importance of staff at different levels in the organization having influence on decisions. The assumption in higher education institutions has been that different interest groups (faculty, administrative staff, and students) play a role in decision-making by having representatives on different

boards. These representatives are usually elected independently from among each interest group.

It is thus useful to observe the prevalence of these models and how they affect each other. The social model has had a shift in approaches, from legal regulation to goal-setting and increasing the influence of university boards. This shift, combined with the funding mechanism based on incentives, indicates that institutions are now moving towards a model closer to a business-management structure. This also indicates a shift from a collegial to a more hierarchical structure where the party model is losing ground as representation from the various sectors appears to be reduced. The result of the interplay of the changes in the three management models in higher education institutions is that decision making is gradually being more concentrated in the senior management arenas in higher education institutions. This is in part due to the fact that they have been granted more decision-making autonomy by the authorities governing them, and in part because their management internal control capacity has been increased so that the decision-making authority can be withdrawn from the subordinate levels of the organization.

Another conceptual framework that aims to form an understanding of aspects of organizational culture change in higher education is presented by McNay (1995). He distinguishes between four organizational types that vary on two dimensions: the degree of definition of policy and the degree of control of implementation. These dimensions are crucial to understanding the extent of development and implementation of learning and teaching strategies in universities. Traditional collegial organizational structures and cultures that are common in long-established, and sometimes medieval, research-intensive universities exhibit a loose definition of policy and loose control over implementation, while enterprise cultures exhibit a tight definition of policy and loose definition of implementation.

Figure 3 illustrates the four organizational culture types in higher education suggested by McNay (1995):

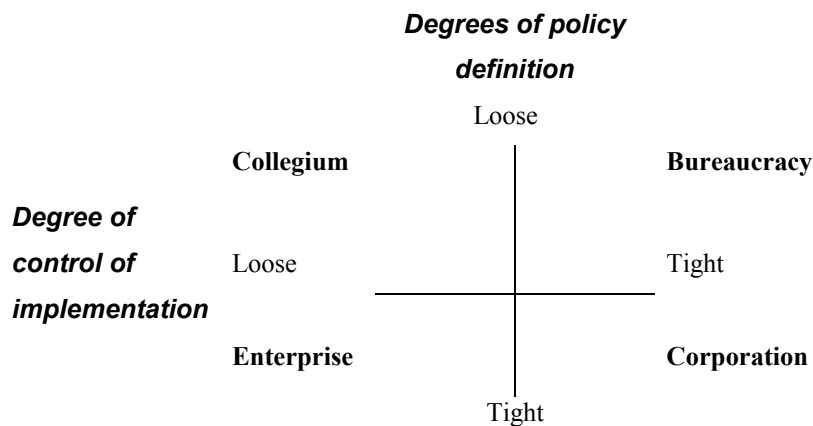


Figure 3: McNay's four university models (1995, p. 106)

The typology suggested by McNay (1995) has the following implications for higher education:

- Collegial cultures are characterized by: freedom to pursue university and personal goals unaffected by external control. Standards are set by the international disciplinary scholarly community and evaluation is by peer review. Decision-making is consensual, management style permissive.
- Bureaucratic cultures are characterized by: regulation, rules, and consistency with standards related to regulatory bodies and external references (such as institutional quality assurance procedures). Evaluation is based on the audit of procedures. Decision making is rule-based.
- Corporate cultures are characterized by: an emphasis on loyalty to the department and its management. Management style is commanding and charismatic. There is a crisis-driven, competitive ethos. Decision-making is political and tactical. Evaluation is based on performance indicators and benchmarking.
- Entrepreneurial cultures are characterized by: a focus on competence and an orientation to the outside world, involving continuous learning in a turbulent context. The management style involves devolved and dispersed leadership. Decision-making is flexible and

emphasizes accountable professional expertise. Standards are related to market strength.
Evaluation is based on achievement.

It is important to bear in mind here that, as an ideal type, the present approach might imply an oversimplification of the process of organizational change as there is evidence of the presence of characteristics of all four organizational types rather than a pure form that can be represented exclusively by one type. When it comes to the reform of Norwegian higher education we can observe that there has been a movement from the collegial model by incorporating elements from the other organizational types. However, international literature on changes in higher education does not present any evidence to suggest that this movement in itself improves teaching. Some studies have even pointed out that the loss of collegiality has led to the creation of an inhospitable environment for teaching characterized by less socializing, less time spent in the department, and hence less opportunity to discuss teaching practice (Knight & Trowler, 2000).

The adoption of management innovation from other settings has always been a controversial issue in higher education institutions. In his study on the lifecycle of management fads in higher education, Birnbaum (2000) demonstrates how management strategies are imported from other settings emphasizing rational decision making but often without full consideration of their limitations. These are ideas that were initially presented in the business sector as “universally applicable solutions” highlighting the importance of goals, rationality and causality (p. 13). The tension between the values supporting these solutions and the traditional collegial model of leadership in higher education was well illustrated in January 2010 when the University of Oslo commissioned an external evaluation from a consulting company to identify what organizational factors would contribute to the university assuming a position among the world’s top universities in international rankings. In its early findings, the study described the University of Oslo as “organized anarchy where the only control is set by external boundaries” and claimed that there is “no UiO culture, everyone writes and says whatever they like in the [university] paper, there is no loyalty” (Grinde, 2010). The same report claimed that the university needed “strong leadership that can force through changes that are needed”. These observations caused a great stir within the university community the gist of which was that managing a “knowledge institution” is not the same as managing a “production company” and that the study had misunderstood what a university should be.

2.4 Discussion: higher education and system sustainability

Throughout this chapter I have contextualized higher education institutions as systems nested within wider systems in which dominant political discourses advocate changes motivated by perceptions that objectives are not being met and that competition through the implementation of market-oriented reforms is necessary if universities are to become more responsive to societal demands. This study discusses and questions both assumptions. Although the criticism of higher education in the public debate highlights failure in terms of not meeting externally defined goals, we can enquire if in fact higher education institutions fail in terms of not identifying objectives that take into account sustainability and, therefore, have undesirable side-effects, including widespread ecological illiteracy (Hames, 2007). The failure of educational systems thus reflects a broader failure in the systems within which higher education is nested: “the fundamental ‘system failure’ is our continuing inability to sufficiently adapt our social and economic systems to their ecological context – the limits and laws and systemic nature of the ecosphere” (Sterling, 2004, p. 53). His claim is that our dominant worldview fails because it sees our ecosphere system as part of the economy rather than the other way around. As higher education is a subsystem of society, it becomes part of an overall system failure.

The organizational responses to external demands have usually emphasized more centralized decision making, control of resources, and market efficiency. This is a management perspective that is deeply rooted in the principle of equilibrium where changes take place in a linear and predictable fashion. However, as I understand sustainability, it cannot be equated with a search for perfect equilibrium but must rather be seen as the capacity to respond, adapt and discover new activities in the context of a world that is always changing in an unpredictable way. In this sense success is not merely about improving resource and technology performances in relation to the external environment. It is also a qualitative property emerging from the internal and external relationships of the system. In chapters 5 and 6, I present central concepts of complex adaptive systems and how this perspective explains organizational change. This is a perspective which sees sustainability as an integral part of a process of change in social paradigms. However, it is important to discuss the

ontological and epistemological implications of the application of complexity theory to the study of organizational change and its novelty in relation to other approaches. This is the topic of chapters 3 and 4.

2.5 Summary

In this chapter, I have presented important aspects of higher education reform at the European level and shown how Norway embraced much of the developments led by the Bologna process. Competitiveness is a key word here as it is expressed in at least three ways: the necessity of higher education institutions to contribute to economic growth and national competitiveness; the challenge to compete with other institutions globally for resources, and; competition and market mechanisms serving as an allocator of resources and as a driving force for organizational efficiency. This development was motivated by a perception of system failure in terms of responding to externally determined demands. A different notion of system failure is offered here in terms of my understanding of the concept of sustainability. Bearing in mind complexity theory's concern with processes of interaction, the question that arises now is how changes in political agenda and in the overall university structure are related to patterns of behavior on the department level where academics usually construct their interrelations and perform their work.

3. Ontological Emergence

The goal of the present chapter is to discuss the ontological and epistemological implications of the theoretical framework adopted in the study. During the past two decades, much has been written about the new “science of complexity” (Battaram, 1999; Byrne, 1998; Chia, 2006; Dent, 1999; Hatch & Cunliffe, 2006; Havey & Read, 1994; Liang, 2010; MacIntyre, 1997; Middleton-Kelly, 2003; Stacey, 2006, 2010; Urry, 2005; Tosey, 2002; Waldrop, 2003) but surprisingly little has been written about the epistemological and ontological dimensions of complexity. Therefore some questions raised by philosophers and scientists regarding the novelty of complexity theory remain as areas of dispute. Is complexity an overarching principle that connects the study of complex adaptive systems across physical and social sciences? Is it a set of common assumptions to discuss different phenomena such as environmental sustainability and organizational changes in higher education? Is it a new way of understanding how order emerges at the edge of chaos? Is complexity real or a symptom of our limited understanding of the world? What kind of ontology is compatible with assumptions made by complexity theorists? In this chapter, I position my own understanding of complexity theory in relation to overall questions regarding philosophy of science. I present a discussion about how complexity theory relates to existing paradigms in organizational studies.

Put in simple terms, ontology is concerned with the nature of the phenomenon while epistemology relates to how we know that phenomenon (Burrell & Morgan, 1992; Schapper, De Cieri, & Cox, 2005). The overall ambition of this chapter is through an epistemological and ontological discussion to provide the reader with a better understanding of some of the main choices made in this study regarding theory, methods and analysis of empirical findings. I use here a reflection regarding the highly influential paradigm matrix of the field of organizational theory presented by Burrell and Morgan (1992) to initiate this discussion.

3.1 Critical realism and organizational theory

Burrell & Morgan’s (1992) sociological matrix (Table 1) produced in 1979 was an attempt to relate theories of organization to their wider sociological context. The grid aims at providing

an intellectual map upon which social theories could be located according to their ontological and epistemological tradition. It has been claimed that the most significant contribution of the Burrell & Morgan framework had been to legitimize (or at least provide space for legitimization of) alternative approaches to the study of organizations by signaling to a growing dissatisfaction with the dominant functionalist paradigm (Goles & Hirschheim, 2000). Their main proposition was that social theory could be conceived in terms of four key paradigms based on different sets of assumptions about the nature of social sciences and of society. In regard to organization studies, they claim that each paradigm generates theories and approaches that are inherently in opposition to other paradigms. Since its publication, their grid motivated a tendency among organizational researchers to locate theory building among the four paradigms and thereby legitimize emerging alternatives to the functionalist paradigm.

As represented on figure 4, the two dimensions define four distinct sociological paradigms. These four paradigms represent fundamentally different perspectives for the analysis of social phenomena: “they approach this endeavour from contrasting standpoints and generate quite different concepts and analytical tools” (Burrell & Morgan, 1992, p. 23).

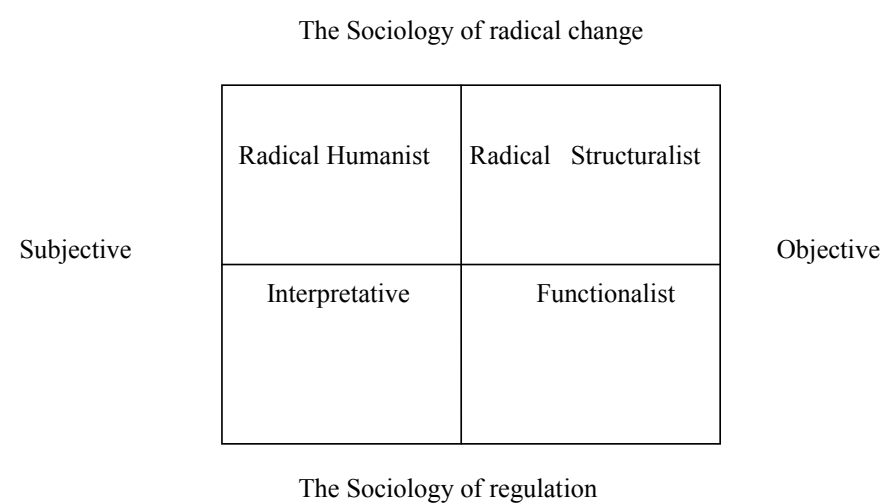


Figure 4: Four paradigms for the analysis of social theory (Burrell & Morgan, 1992, p. 22).

Theories of organizations are based upon both philosophies of sciences and theories of society. Thus, social scientists approach their object via ontological, epistemological and methodological assumptions about the nature of the social world and how it should be investigated. Philosophical assumptions which underwrite different approaches to social sciences represent the horizontal axis of the sociological matrix developed by Burrell & Morgan. This is the *epistemological* aspect of each paradigm. Different positions on each of the four strands reflect the two main intellectual traditions in social sciences over the last two centuries. The first one, sociological positivism, represents the attempt to apply models and methods derived from natural sciences. It treats the social world as if it were the natural world, adopting a realist approach to ontology. It is supported by a positivist epistemology and relatively deterministic view of human nature. The second tradition stands in opposition to this by assuming that reality should be understood in terms of “ideas” rather than in the “data” sense perception. In contrast with the natural sciences, it focuses on the subjective nature of the human being. Summing up, the two traditions can be associated respectively with the objective and subjective extremes of the model proposed by Burrell & Morgan (1992).

The vertical axis of the matrix is related to assumptions about the nature of society. In other words, it is about *ontological* assumptions. Burrell & Morgan (1992) claim that social sciences theories tend to reflect different assumptions regarding order conflict and transformations in societies. In one extreme, there is the “*sociology of regulation*” which refers to theories that seek to explain societies in terms of its unity and cohesiveness. This sociology has as main concern the need for regulation in human affairs and focuses on why and how societies are maintained as entities. In contrast, the “*sociology of radical change*” has as its basic concern in finding explanations for structural conflicts, modes of domination and structural contradiction. It has a concern with humanity’s emancipation from the structure which limits its potential for development. The authors conceptualize these two sociological perspectives in forms of polarized dimensions. Although recognizing that variations in the context of each are possible, these perspectives are necessarily different from each other.

The functionalist paradigm has been regarded by Burrell & Morgan as the dominant framework in the study of organizations. It is based upon the *sociology of regulation* and assumes an *objectivist* perspective. Rooted on sociological positivism, its main concern consists in providing rational explanations to social affairs in a highly pragmatic standpoint. It

is often problem-oriented aiming at providing solutions to perceived problems. Organizational science has been to a large extent guided by the assumption that the nature of organizations is a basically objective one waiting for impartial exploration and discovery. There is thus a tendency to operate using a deductive approach to theory building by formulating hypothesis appropriate to the organizational world and testing them via objective procedures.

Figure 5 illustrates the dominance of functionalism in organizational studies throughout the twentieth century:

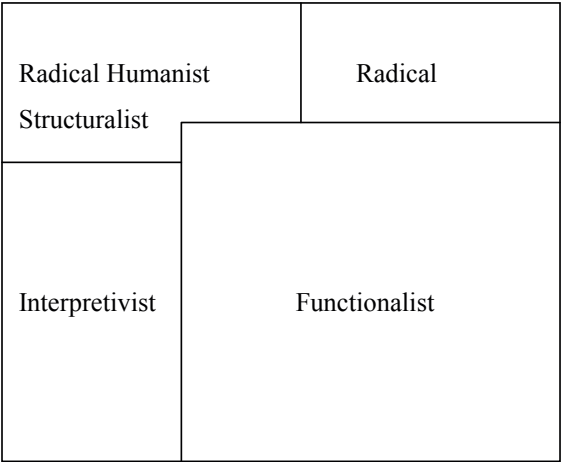


Figure 5: A representation of the dominance of functionalism in organizational theory and research (Gioia & Pitre, 1990, p. 586).

The four paradigms do not necessarily stand for unity of thought. In the context of any given paradigm, there will be much debate among theorists who adopt different standpoints. However, each paradigm represents an underlying unity in terms of overall assumptions which fundamentally divide researchers in different paradigms. As scientists, we have both the tendency and the need to relate previously existent ideas to dominant perspectives in scientific thought. In my case, during my training as a researcher in the organizational field, I have often tried to locate new ideas in the matrix presented by Burrell and Morgan. In spite of its limitations, this has proved to be a helpful tool in many situations. However, as I was

deepening my reading about complexity theory, it turned out to be extremely difficult and maybe impossible to locate complexity in any of the four quadrants in the matrix. In part, it can be explained due to the fact that complexity theory is not a single and unified theory, but a set of conceptual tools that arise from a series of multidisciplinary developments that at the same time acknowledges the importance of previous dominant paradigms but questions the capacity of fully understanding organizational reality relying exclusively in one perspective. It does not deny the importance or calls for the elimination of intra-paradigmatic research. Nevertheless, instead of assuming the classical scientific view eliminating uncertainty, complexity theory accepts uncertainty as inevitable (Allen, 2006). I agree with Byrne's (1998, p. 7) assertion that complexity theory resonates with realism: "complexity inductively founded the way it is, is not innocent in metatheoretical terms. It does have ontological and epistemological implications which make it essentially part of the realist programme of scientific understanding and enquiry". However, critical realism is in itself not a new version of the positivist epistemology and the realist ontology that characterizes the functionalist paradigm. This will be further discussed in the next sections.

3.1.2 Complexity and the vertical axis: the radical change vs. regulation dimension

As both my understanding of complexity theory and the analysis of my empirical findings progressed, the initial difficulty in placing my theoretical framework in the matrix suggested by Burrell and Morgan consisted in its radical change vs. regulation dimension. Initially, complexity theory reveals a concern with the rise of new meanings, new patterns of behaviour and innovation. These are typically the central concerns of the application of complexity theory to the understanding of human organization in complex systems. However, it also seems fair to me that every theory that aims at explaining change should also be able to explain stability. It seems to be clear to me that if we are to determine how changes emerge, we should also be able to understand how stability emerges and change sometimes does not happen. Furthermore, it should also explain how change and stability might often co-exist in a paradoxical way in organizations. In many ways, that is exactly what this study shows in the two empirical cases that were investigated in which I identified both elements of change and continuity. Complexity theory provided me with the concepts to explain change and stability in academic departments that other perspectives previously used to address leadership in such environments did not. So my experience as researcher during this project motivated a

reflection about the change vs. regulation dimension of social theory. Although my personal interest had previously always been on change spectrum of this dimension, my empirical findings revealed many accounts of resistance to change. So as the research unfolded, it became clear to me that I would have to find in my theoretical framework tools to explain why a new leadership configuration in the Norwegian department was not contributing to cultural change related to educational practices. The empirical findings in the department in Norway showed that although leadership practices might have changed, faculty perceptions of their educational role as lecturers seem not to have been modified. Some attempts to innovate in terms of educational practices emerged from everyday initiatives of some individuals while properties of the system itself demonstrated resistance to change. This is described in articles II and III in this study.

3.1.3 Complexity and the horizontal axis: subjective – objective dimension

During my literature review I observed that there is virtually no consensus regarding the epistemological and ontological implications of complexity to the study of organizations. Rather than presenting a full description of the different positions assumed among complexity theorists, I identify here two main strands and present the epistemological and ontological assumptions in which this study is based.

In one strand, there are authors who defend a post-modernist ontology claiming that reality is composed of local fragmented and non-linear realities, but also defend a modernist epistemology emphasizing prediction, generalization, falsification and experimentation (McKelvey, 1998). Most studies following such assumptions are conducted in the shape of computer-based agent-modelling descriptions of organizational reality (McKelvey & Lichtenstein, 2011). The central assumption of such studies is described by McKelvey (1998, p. 20) as such: “it is possible to translate non-linear idiosyncratic non-into probabilistic event flow-rates that fit the assumption requirements of normal science and thus allow formal mathematical or computational modelling as well as normal science justification logic”.

The present study, however, shares its assumptions with the ontological and epistemological assumptions of a different strand of complexity theory which assumes a more interpretive perspective identified with critical realism. During the twentieth century, different social

theorists identified limitations of what they identified as the over-determinism of positivism and the total relativism of constructionism (Hatch & Cunliffe, 2006). As Parker (2001, p. 91) describes, “critical realism asserts the reality of structures in the world but the critical dimension recognizes that all structures can only be known under some socially mediated and hence historically contingent form of description”. It is an approach to knowledge that lies between modernism and postmodernism. The British philosopher Roy Bhaskar presented in 1975 what seems to be the most influential discussion of the main contentions of critical realism. Bhaskar’s critical realism combines ontological realism (real structures) and epistemological relativism (knowledge is socially produced). Three central arguments can be identified in Bhaskar’s (1975) project:

- Society is composed of real structures characterized by social practices that are reproduced and transformed by individuals. Although society pre-exists individuals, it is not independent of human action for two reasons. First because individuals take these structures into account when they act. Second, because elements of social life emerge from interactions become objectified once human activity relies on their existence. For example, the hierarchy of an organization emerges from how different individuals interact and relate with it.
- Reality is stratified with substructures and mechanisms that underlie most visible events. The goal here is to understand such generative mechanisms and deep structures that explain surface events and processes humans experience as part of their social lives.
- Knowledge is socially produced, but not to the point that it can be understood only in terms of discursive and textual practices as claimed by constructivists. Knowledge is thus also the result of loops of dialectical constructions and testing of explanations and models. For critical realists, the primary goal is to understand, rather than predict social behaviour.

By examining these central arguments, it seems clear to me that critical realism cannot be located in the paradigm grid suggested by Burrell and Morgan as it selectively combines elements of modernism and post-modernism. It is not an attempt to mix different paradigms

but it intellectually challenges the researcher to move in a reflective manner along different perspectives and as it incurs in serious challenges to paradigm incommensurability (Schultz & Hatch, 1996; Weaver & Gioia, 1994).

The British scholar Joseph Sterling discusses systems thinking as a basis for paradigm change towards sustainability in higher education. The central epistemological assumptions of this study resonates with the ecological epistemology suggested by Sterling (2003) who agrees with the existence of an independent world while rejecting objectivism, and recognizes the importance of human construction in perception. It also recognizes the role of such perception in transforming reality and creating change. Therefore the focus of this study is on perceptions. As I understand, critical realism is compatible with a complex perspective that stresses our systemic role in the interplay between the ideal and the real and our participation in overall structures.

This recognition brought obvious implications for the choice of phenomenology as the research methods in this study which is an approach primarily concerned with of the phenomenon as they are experienced through human perceptions and consciousness (Moussakas, 1994). Phenomenology is regarded as a key foundation of critical realism. This is obviously not the only way that leadership in academic departments can be studied. One can, for example, choose to empirically observe behaviour in academic departments over a certain period in time describing rituals, traditions and symbols. An observation of how these change over time would certainly enlighten some aspects of organizational behaviour and raise new important questions regarding leadership. As stated above, the complex perspective that I apply here does not claim to deny the importance and contribution of intra-paradigmatic research. This study however has a different ambition and different goals. Rather than trying to present a “whole picture” of what academic departments are, my ambition consists in recognizing the importance of human consciousness and the interaction between the ideal and real in shaping a future that is perpetually being reconstructed. My focus here is therefore on how and if perceptions express change. I agree here with Sterling (2003, p. 434) when he states “that perception is an inherently participative event, a reciprocal interplay between perceiver and perceived”. It is important to stress that to my reader: the present study is a discussion about perceptions and how they present or not evidences of change in leadership and educational practices in higher education. So rather than focusing on the “whole picture”, in its empirical component, this study focused on “fragments” in the shape of descriptions of

perceptions of leadership and teaching in academic departments. It is assumed here that such fragments provide powerful manifestations of the assumptions from which complex processes such as leadership emerge (Snowden, 2004). Fragments that we tell about our day-to-day experience are representations of our discourses and sensemaking abilities, and create meaning (Snowden, 2002a). These fragments are analyzed and interpreted in the light of complexity theory.

The epistemology that is discussed here has implications not only for the research of organizational issues in education but also for changes in educational practices. Emergence is a central concept in complexity theory. In varied fields of study ranging from city planning, internet social networks, to the study of amoeba cells, emergence has in recent years presented a transformative understanding of how low-level components possess the ability to self-organize in higher-levels of system sophistication translated into new patterns of behaviour (Johnson, 2002). For some authors, the term emergence in the way it is understood in science of complexity marks an exciting agenda for research in which consequences to social research might be just in its beginning (Sawyer, 2009). I have so far discussed the philosophical implications of emergence to the study of organizations. In the next section, I discuss the epistemological implications of emergence to educational practice.

3.2 Epistemological implications of “strong emergence” to learning in organizations and education

Osberg and Biesta (2007) and Osberg, Biesta and Cilliers (2008) present an interesting argument of the epistemological implications of emergence to education. Their main argument is that if we assume emergence as part of our way of seeing the world, we have to think in terms of a form of education that is no longer dominated by questions about how best to teach about a pre-existing world, but also about a form of schooling concerned with questions about responsibility and response. Their perspective is based on a revision of the concept of emergence in science and a critical review of dominant perspectives in modern educational practice. As I understand it, their argument shares many assumptions with the critical realist perspective that I discussed in the previous section. This is because according to their argument we cannot talk exclusively about linearity and we assume that temporality and contextuality are important.

Initially, these authors identify two contemporary understandings of emergence that are intrinsically linked with novelty. They define “weak” and “strong” emergence as such (Osberg & Biesta, 2008):

- *Weak emergence*: emergent properties are understood as novel in that they are unexpected given the principles governing the lower-level domain. However, these new properties emerge deterministically from non-linear rules of interaction.
- *Strong emergence*: in this sense, emergence presents a challenge to determinism as it implies that emergent properties are novel as they are not deducible even when there is extensive knowledge regarding initial conditions. Here, outcomes are not logically derived from constituents.

The *strong emergence* is highlighted by the authors as a property of open systems rather than closed systems, as emergent outcomes are irreversible and not reducible or calculable from an observation of the initial conditions. The notion of irreversibility that they present originates from Prigogine’s work on thermodynamics which claims that all known processes in nature tend towards a state of disorder as there are simply more ways for a system to be disordered than becoming ordered.

The reader might here wonder what the relevance of such studies originating in natural sciences to the study of human organization might have. As I understand, it has a crucial relevance as traditional assumptions in natural sciences influenced a whole positivist dominant tradition in organizational studies. In the broader spectrum of the social sciences, such assumptions have already been questioned by postmodernists. However, if such assumptions are also being questioned in the natural sciences, it opens another sphere to bring new perspectives to organizational studies. Classically, science has been marked by attempts to logically determine every step of a progression towards a new state which in theory would enable to run processes forwards and backwards and trying to find reversible properties in process which might seem to be irreversible. Irreversibility is seen as failures in understanding processes that are reversible and deterministic. Prigogine (1997) demonstrated

instead that this understanding of irreversibility applies only to closed systems. However, in open systems – systems that interact with the surrounding environment and which change themselves and influence their environment – irreversibility is an integral property of the process itself. Thus, instead of looking for deterministic emergence, irreversibility assumes a probabilistic characteristic which resonates with the notion of strong emergence suggested by Osberg and Biesta (2007). Strong emergence has its roots in the role of chance in bifurcations. When an open system responds to some external flux by moving to a different condition, there are always a number of structural possibilities for “novelties”. In bifurcations leading to new bifurcations, the system “chooses” one out of many possible outcomes. For Prigogine, as a system moves from one state to another, additional bifurcations appear and the “choices” that the system makes are characterized by chance rather than being deterministically caused. For Osberg and Biesta, as chance is involved in bifurcations, there is the following implication for emergence: “it is not just that we have insufficient information about the system to know what will emerge, we cannot determine what will emerge even in principle (all we have are probabilities)” (p. 38).

As most of our reality is characterized by open nested systems, we can say that we are in a reality which is emergent (rather than purely deterministic) where the present and future are always more than the sum of the parts from which it emerged. As other open systems, academic departments interact with the environment in various ways: leadership negotiation with the overall university structure in various matters, faculty competition for research grants, competition for students, government demands for excellence in research and teaching activities, and demands from different stakeholders. Also as open systems, academic departments have an impact in its surrounding environment in different ways being it throughout the impact of its research or the participation of its students in the society both as professionals and as citizens. This feature of academic departments in mutual causality with the surrounding environment justifies the nested systems views advocated in this thesis. In this sense, we can say that academic departments are also open systems with dissipative structures.

What are then the epistemological implications of strong emergence? The discussion about change and stability is about processes. Processes are here understood more as movement over time than on space. Rather than the spatial dimension, it is the temporal dimension that is the main concern here. If strong emergence demonstrates the limitations of the assumption

that the universe unfolds in a deterministic fashion, it is necessary that we rethink the relationship between the world and our knowledge of it (Osberg, Biesta, & Cilliers, 2008). In an entirely deterministic epistemology each stage of process follows and is entirely predictable from what initial conditions exist. If there is enough knowledge of all the factors of the equation, processes can be understood from any temporal standpoint. In this deterministic perspective, it is assumed that it is possible to decipher the logic that drives whole processes and by collecting data about the successive stages, it is possible to grasp the “correct” history of the process (Osberg & Biesta, 2007). In this deterministic perspective, it is assumed that we can determine with correctness the nature of each stage and thereby have an accurate explanation of the process. This is a linear understanding of temporality. On the other hand, an epistemology informed by strong emergence indicates that not everything can be understood as a linear sequence of one way to another. As chance is part of the process, we can not identify any immutable logic that would lead us to the initial stages of the process. In this context, the work of George Herbert Mead has influenced not only Osberg et al (2008), but also Stacey and his associates in the Hertfordshire group which are some of the main proponents of the interpretive strand of complexity theory. Mead (1959) argues that it is only from our experience of the present that we are able to reconstruct the past. He claims that our historical accounts of the past will always be influenced by our perspective of the present. As I understand, this in no way a relativist claim as it is not assumed here that a real world does not exist. But it assumes that it is through our senses and perceptions of the world that we construct our knowledge of it.

However, even the idea of “knowing the present” is problematic as the concept of knowledge itself implies knowledge of moment or world that is already in the past or in the process of passing. As we live in an emergent reality, we would have to be constantly reassessing our knowledge which arises in a present that is already passing. I think this assertion is very pertinent in a networked world in where individuals experience fluxes of information circulating in global basis in an extremely high pace. In this sense, to say that knowledge is determined from our lived experience would also imply in some level of determinism. The solution offered by Mead - and accepted by Osberg, Biesta and Cilliers, and Stacey – is that rather than being determined, knowledge emerges from our engagement with the world. If we assume that knowledge is emergent from our engagement with a world that is constantly in a temporal dimension, each knowledge event is necessarily also new. As Osberg and Biesta (2007) describe, “it is radically new because, although it follows from what has come before,

it does not follow on logically from what has come before. It does not follow on logically because it contains an addition – a supplement – which was not present *in* what came before” (p. 43). Emergent knowledge thus leads to a new reality which is incalculable from what came before.

The perspective towards construction of knowledge that has been discussed so far has focused on the possibility of gaining knowledge of the present. What about knowledge of the future? If outcomes emerge in a probabilistic manner from initial conditions, is it possible to have responsibility for the future? From a deterministic perspective, where the rules of the game are pre-defined, it would be logical in terms of responsibility to choose the “right” procedures. However, is it possible in a complex world characterized by emergent outcomes to rely in predetermined rules of responsibility? The answer to this question has to be a paradoxical one. In a world in which the present is not contained in the past relying exclusively in predetermined rules can only be irresponsible as such rules were thought to a moment that has already passed. But on the other hand, ignoring what was learned from past experiences is also irresponsible. This argument has epistemological implications both to leadership and educational practices in this study.

First, this is a perspective that has permeated this study about leadership. Although I acknowledge the contribution of previous studies in departmental leadership that have almost always tried to identify characteristics of leadership behaviour associated with success and present prescriptions of leadership practices, I argue here that there is now the need to explore the phenomenon of leadership through other lenses. This has been part of my learning process as a research as a research while conducting this study. While I was deepening my conceptual knowledge about leadership change and analyzing my data, I was observing that the concept of distributed leadership that was my original conceptual focus was not enough and that complexity theory provided me with other tools to understand the problem that I was looking at. Hence, what I describe here was a process of change in my own conceptual assumptions.

Second, the epistemology that these authors suggest recommends a redefinition of the purpose of education that demands a learning-centered approach. The criticism that Osberg, Biesta and Cilliers (2008) present of the current paradigm in education claims it is dominated by what they call as representational-presentational spectrum which is primarily concerned with ways in which the student can be brought to an accurate understanding of the world. They argue

that if we rethink the purpose of education using strong emergence, we need to think of educational institutions not as places where the knowledge is replicated and preserved but instead as places where new worlds are allowed to emerge. They suggest an educational paradigm based on a learning-centered perspective expressed in the following terms:

The main insight – relatively old, but for some reason education needs to be reminded of it from time to time – is that teaching does not determine learning. What students learn may have a link with what teachers teach, but the two are not necessarily identical. Through their participation in educational practices learners learn much more and much different things than which they were supposed to learn (Osberg, Biesta & Cilliers, 2008, p. 217)

One of the lessons that can be taken from this assertion is that the search for “best practices” or patterns associated with success in education can only show us what has worked in past and in some specific contexts but that there is no assurance that they will work again in the future. Such research ambition is important because it can give us possibilities for action but it would be misleading to expect or to look for recipes or rules for action. I have assumed throughout this study that the same can be said about leadership in academic departments. The next section discusses the relevance of complexity theory to the study of leadership and change in higher education.

3.3 Why complexity theory?

One could question what the value of using complexity theory to the study leadership in higher education is. Complexity theory can be seen as a way of perceiving or interpreting how environments are and therefore one can question how and why we can make a bridge to the study of leadership and change in academic departments. My answer to this question has two dimensions. First, it is related with a process of change in my own assumptions as a researcher. The second dimension demands that we revisit events in science linked with the roots of complexity theory as a multidisciplinary development.

Part of the answer to this question is related to the process of change in personal assumptions of the author during the period this project was conducted. While in the beginning of this

project, my own way of thinking and research goals reflected a dominant perspective in organizational studies which aimed at identifying characteristics of individual behaviour associated to success that could be generalized, the research process itself showed me that I would have to think in a different way. In my interviews, department leaders often described challenges that besides being absolutely contextual, made them experience the unknowability as part of their everyday life experience. Therefore attempts to presents recipes for best behaviour that are often suggested in organizational studies seemed unrealistic to me as they were always identified in structures that necessarily emerged from contexts that could only repeat themselves, if at all, by accident and not by design. Also descriptions of experiences of academic staff, mostly in the department in Norway in which externally designed attempts to exert a more bureaucratic character - based on a principle of system efficiency and equilibrium - to their role as lectures, did not contribute to a reflection of change and innovation in educational practices. At the initial stage of my research I did not know about complexity theory. However, during my data collection, I came into complexity theory in a more or less accidental way partly as result of informal conversations with colleagues and partly by running into literature about complex adaptive systems. As I deepened my reading about complexity theory, it became clear to me that its main concepts presented a new language to explain the phenomenon that I was studying. As that was an unplanned and absolutely unpredicted process during the design phase of this project, I can say that I experienced complexity as an essential part of my own experience as a researcher. By learning and applying a theoretical perspective that I did not know in the earlier stages of project – and that is still today relatively unknown in the field of education - demanded that I assumed a path full of bifurcations whose results I could not know but that still seemed to me more promising, exciting and challenging than what my original plan was.

Often, concepts of complexity theory can be identified in the jargon of ecologists and those concerned with environmental issues. Therefore one might be led to the conclusion that complexity theory is essentially or even exclusively a theory of the natural environment. However, if we have to trace to origins of complexity theory, we will observe that its foundations as a multidisciplinary project belong to a period when the concern with global warming and other environmental issues was far from being as prominent as they are today. For example, the Macy's Conferences that took place in New York between 1946 and 1953 were a series of meetings of researchers from various disciplines at which ideas about complexity, feedback loops in open systems, developing in different research fields were

discussed (Abraham, 2011). The Conferences were organized by mathematicians, engineers, neurophysiologists, biologists and social scientists. The attendees were leading scholars in different research fields among which were social scientist and linguist Gregory Bateson, mathematician and founder of cybernetics Norbert Wiener, and cultural anthropologist Margaret Mead. Insights that emerged from discussion in this series of conferences are usually associated with the birth of cybernetics as a research field but, from a broader perspective, its main contributions boosted the discussion about complex systems in different fields often demonstrating dissatisfaction with the limitations of the dominant positivist philosophy of science (Abraham, 2011).

As I understand, complexity theory is not a science that emerged essentially from the recognition of environmental issues but it is a perspective that also provides conceptual tools to understand the social and biological environments and at the same time informed and was influenced by these. This is not something new in science. I have assumed here that academic departments with their specific characteristics and history are a form of human organization. Different ontologies and epistemologies have influenced the way we address human organization mostly by reflecting what were perceived as challenges in each historical period. Social theory is always connected to some specific historical context: “after all the sociology of knowledge also claims that all knowledge is an expression of a specific state of affairs” (Biesta, 2003, p. 72).

Every theory used to understand human organization has been based upon ontological and epistemological assumptions that at the same time reflected and informed the perception of challenges at each historical period. One example of that is the discussion about strategy in organizational studies which has been described by Stacey (2006) as dominated by two well-established perspectives. The first perspective called strategic choice, assumes that organizations adapt to external changes by restructuring themselves in an intentional and rational manner. The positivist ontology in which this perspective is based upon both reflected and informed the perceptions of challenges of a raising industrial society. The second perspective called competitive selection, assumes that organizations are located in evolutionary processes of competitive selection in which whole populations of organizations adapt to external conditions in processes characterized by institutional inertia and resource specificity. These are theories that I discuss in more detail in chapter 5. However, it is important to observe here that despite their differences, they originate from Newtonian

physics and Darwinism (Stacey, 2006) and therefore share the assumption that successful systems are marked by negative feedback processes toward predictable states of adaptation. Stability, regularity and predictability are therefore seen as the key to organizational success. From a critical realist perspective, we can assume that each of these dominant perspectives constituted an integral part of the historical context from which they emerged and to some extent also shaped the perceptions of reality. However, if the main assumptions in consolidated perspectives in organizational studies are being questioned at a fundamental level by developments in the same natural sciences from which they derive, there is then the need for new ways of approaching human organization. Therefore, it seems to me that the question is no longer why we should use complexity theory, but why would not we?

It is true that most developments in complexity theory arose from the study of natural systems. However, in my view complexity theory provides an extremely powerful analogy to organisational life as it illustrates how instability and unpredictability are essential to innovation, creativity and change. One might wonder whether it is reasonable or not to apply this metaphor to investigate social phenomena and forms of human organization such as academic departments. The reflection provided by Reason and Goodwin (1999, p. 297) on the role of metaphors in the formulation of theories is in my view very representative: “metaphor is at the basis of all theory (and) while of course complexity theory is a metaphorical construct (...) it is helpful to see social and organizational life as a complex, self-organizing process”. In the next chapter, I discuss classical perspectives to organizational change and leadership.

3.4 Summary

The goal of the present chapter is to clarify the epistemological and ontological assumptions of this study. The initial step was to demonstrate the impossibility in locating the critical realist perspective assumed in relation to the highly influential paradigm grid presented by Burrell and Morgan. It was discussed how different assumptions seem to be present in complexity studies. So rather than trying to present a full description of these, I have presented my own assumptions in related to my own understanding of complexity theory as part of a critical realist agenda. The next step consisted in discussing what the main implications of such intellectual project to the field of education are. The concept of strong

emergence is here a key one. The last part of this chapter presented a discussion about the relevance of complexity theory to the study of leadership and change in academic departments. It assumed the shape of a personal account of my own experience as a researcher in terms of challenging my own initial assumptions and research goals. Then I briefly discussed the relation between theory and historical context.

4. Departmental Leadership and Changing Organizational Culture

The present chapter discusses change leadership in higher education and departmental culture. I have throughout this study claimed that leadership is an activity carried out in complex and dynamic social systems. Social systems like academic departments are characterized by culture, traditions and practices. Therefore the overall goal of this chapter is to provide a conceptual bridge between changes in all different organizational aspects of academic departments and the narrative of complexity theory that will be offered in the next chapters. This chapter consists of three different sections. The first section of the chapter presents main perspectives that have historically permeated the formulation of models of organizational cultural change. In the second section, I will narrow down the discussion from the broad field of organizational studies to the specific case of departmental culture in higher education institutions. This examines challenges identified in the literature that are faced by individuals aiming at exercising leadership in the context of changing environments in higher education. I review here some influential studies that aimed at understanding how leadership is related to change in academic environments. The third section will present my own reflection in terms of a process of change in my own personal assumptions which led to the choice of complexity theory as my conceptual perspective.

4.1 Classical perspectives in organizational culture change

The present chapter is about cultural change. Change is an inherent characteristic of most organizations and can be related to different aspects: challenges brought by external changes, the rise of new technologies, internal conflicts, organizational growth, etc (Jackson, 2005). It is not rare that changes are related to all those factors together. In most cases, they actually are. Such changes can happen in the shape of altered work practices, new personnel and new work routines. In the case of higher education institutions, the issue of change assumes a deeper meaning as the expansion of the sector and the challenge to respond to new external transformations demand a discussion about cultural change. I hereby depart from Schein's (1985, p. 6) definition of organizational culture change: "the deeper level of basic assumptions and beliefs that are shared by members of an organization, that operate

unconsciously, and that define in a basic 'taken-for-granted' fashion an organization's view of itself and its environment". The relevance of this definition for this study is that it raises the question about the relation between leadership and cultural changes associated to changes in educational practices.

As discussed on chapter 3, changes involve processes that are understood here as movement in a temporal dimension. Changes can also involve movements in a spatial dimension but for the present study about changes as processes, the temporal dimension is the main concern. In the previous chapter, I discussed how a strictly linear understanding of temporality does not catch the essence of strong emergence in open systems. I highlighted the existence of bifurcations, chance, the importance of contextuality and, throughout the study we will discuss uncertainty and sensibility to initial conditions. As I understand, all these characteristics of CASs demand an understanding of cultural change in organizations that contrasts with dominant perspectives. Most organizational culture change models in use today are surprisingly still permeated by the theories presented by Max Weber in the 19th century and Kurt Lewin in the 1950s (Hatch & Cunliffe, 2006). I present and discuss those theories in the two next subsections.

4.1.1 Lewin's linear model for planned cultural change in organizations

Lewin's (1951) model for planned cultural change defined human organizations as a balance of forces either driving or opposing change. Hence, stability was assumed to be a stalemate between forces from both sides. For him, planned change was a period of temporary instability interrupting an otherwise stable equilibrium. He claimed that changes can be seen as movements among three different stages: unfreezing, movement and refreezing. The unfreezing stage happens when there is an unbalance in the equilibrium that sustains organizational stability. Once unfreezing has taken place, the second stage, movement, involves the implementation of strategies to influence the direction of change in the destabilized system that can be achieved by promote training in new behavioral patterns, reward systems or introducing new styles of management. The movement remains until a new balance between forces driving and restraining change is achieved leading to the refreezing stage. This is when new behavioral patterns are institutionalized and a new organizational culture is consolidated.

The figure below illustrates Lewin's influential understanding of planned change in organizations:

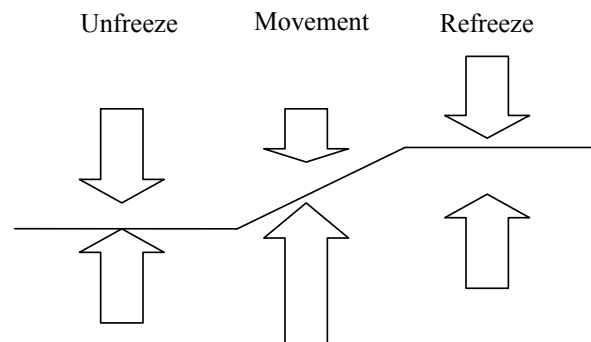


Figure 6: Representation of Lewin's model of planned organizational changed

Lewin's model presents a linear perspective of change from one stage of stability towards another. In other words, change is seen as a period between two stages of desired equilibrium. The basic implications of this model are that (1) leaders should be able to predict and choose changes; (2) change is a linear process, and; (3) organizations tend to move among different stages of stable equilibrium. The application of this theory to the study of leadership in academic departments would mean that department heads can idealize linear change in educational practices and identify movements of transition from one period of system equilibrium towards another desired one. It would mean that individual leaders can conduct the cultural changes linked to changes in educational practices through the three stages. However, the analysis of the literature shows that there is an intrinsic incongruence between this view and the complex, emergent view of changes that I discussed in the previous chapter. First, it is the linearity of change which is not compatible with the emergent ontology. Second, the emphasis on system equilibrium is strongly questioned by the science of complexity as it is discussed on the next chapter.

As stated earlier, Lewin's theory has been widely accepted in the literature about organizational change. Although I have not found any explicit reference to Lewin's work in

the literature about changes in higher education, the idea that change involves a movement from one state of system equilibrium to another seems to be implicit in most studies that I discuss in the second part of this chapter. When I look back to the initial stages of this study, I remember that then my own understanding of change in organizations reflected this perspective. However, the research process itself gave me indications that I would need to think in a different way. During my gathering process of data in the shape of perceptions of leadership and teaching in the two academic departments, I found no indication of a linear process happening in the shape of “unfreezing-movement-refreezing”, as suggested by Lewin. The perceptions of leadership and teaching described by leaders and academic staff did not resemble to anything even close to that. When asked to describe their activity in the department, leaders mentioned their involvement with managerial and bureaucratic tasks, conflict-solving, intermediating internal and external demands. Expressions related to routine and maintenance like “my role here is to keep the shop running” (department head in the Norwegian department) were common. Although in other stages of the interview, they described their vision to the department, they did not in any moment describe any plan related to change in organizational culture in the terms suggested by Lewin. Changes in educational practices, when occurred, were described in the shape of stories of initiatives of one or more individuals that through network relations gained recognition and support by peers in ways that could not be predicted either by leaders or any of the agents involved in the process. In other words, these processes were emergent rather than linear. In these processes, if there was any common behavior from leaders, it was that they had the sensibility to identify what was emerging and articulate it in ways that recognized uncertainty. One example of that was the story of the formulation of a new curriculum in the main study program in the American department that was neither forecasted nor designed by department head or the deputy head. As participants described, this was an initiative that emerged from series of interactions among faculty members whose classroom experience indicated the need to reformulate their study program. In this example and in others, the leader perceived the momentum and encouraged change.

In the previous chapter I discussed bifurcation in processes of change. One of my reflections as researcher during the time I was conducting this project is how research is in itself a nonlinear process throughout which I encountered bifurcations. The choices made in such bifurcations involve accepting both uncertainty and openness to question my own initial assumptions. The analysis of the example that I presented in the previous paragraph

represents for me one of these bifurcation moments in which I questioned my own linear view of change process that assumed an inherent dichotomy between stability and change. Therefore insisting on the linear perspective towards change that I had intuitively assumed would lead to an abstraction of the perceptions of everyday reality of leadership in academic environments. At this moment, complexity theory provided me a more exciting track that recognized a paradoxical situation in which stability and change coexist in an emergent way in systems of human organization. If we assume this perspective, we have to think about change in education in the following terms described by Mason (2008, p. 41): “change in education, at whatever level, is not so much a consequence of effecting change in one particular factor or variable, no matter how powerful the influence of that factor. It is more a case for generating momentum in a new direction by attention to as many factors as possible”. Based on the philosophical assumptions discussed in the previous chapter, I would add that leaders can contribute to generate such momentum but should also have the sensibility to understand and identify when momentums for change emerge. This is an aspect of the activity of leadership that I further discuss in chapter 9.

4.1.2 Weber’s theory of charismatic leadership and organizational culture change

The other theory has been used as a “template” for most organizational models is the one presented by Max Weber (1978), called routinization of charisma. His main overall concern was on the different forms of domination that he identified in premodern and modern societies. Weber explained the dynamics of cultural change in relation to the introduction of new ideas by a charismatic leader. By championing new ideas, the charismatic leader can exert a revolutionary influence. However, although all changes in culture originate from the influence of a charismatic leader, the routinization allows cultural members to exert considerable influence in shaping new ideas in the change process. During the process, followers adjust the ideas introduced by the leader to their everyday life experience, needs and interests. The identification and acceptance of a leader’s charismatic influence and authority takes place in a determined system of cultural beliefs. Thereby, he places leadership and culture in the realm of subjectivity. In this context the authority of leader rests on how followers and subordinates regard them. This means that the basis of every authority and the willingness to obey is the current system of belief that he also described as worldview. Weber’s theory has many different implications that either resemble or contradicts the

ontological and epistemological assumptions that I discussed in the previous chapter. This will be discussed in the next paragraphs.

The application of Weber's theory to the context of academic departments would indicate that charismatic individuals in formal leadership positions initiate and drive cultural change. Although from this perspective, change would involve a high degree of unpredictability and low levels of control, a cultural change process would take place with the figure of the academic leader assuming a central and emblematic position. As I understand Weber's theory, it shares the assumption that power relations emerge in a contextual manner from processes of routinization that can neither be predicted nor controlled by individual leaders. This is a common claim with the complex perspective that permeates the theoretical framework of this study. On the other hand, when Weber claims that all cultural changes are initiated with the introduction of new ideas by a charismatic leader, his theory is not compatible with the principle of strong emergence which assumes that novelty emerges from complex networks of interactions in where the leader is operating in the unknown like everyone else. When it comes to the analysis of my findings in the two academic departments, I did not find any evidence of charisma playing an important feature of how leaders were perceived. The leaders in the two departments were academically respected by their colleagues but it is not the same as saying that they were charismatic in the Weberian sense. In fact, if we think about the three types of authority suggested by Weber (charismatic, traditional and rational legal), it can be said that leaders in the Norwegian department, were perceived to be in a context of a transition from the traditional to the rational-legal model.

It is important to observe here that when Weber differentiates the forces of rationality that work from a hierarchically superior perspective to change organizational culture from above, from the subjective forces of change that work both horizontally and vertically, he anticipated elements of organizational learning theory. Both Lewin and Weber attempted to describe organizational change in terms of processes of incorporation of new ideas and practices in the everyday life of the organization. In contemporary organization theory, rather than organizational change, the study of the phenomenon has different labels: knowledge management or organizational learning (Hatch & Cunliffe, 2006). The literature review that I conducted in this chapter showed that the relation between learning, leadership and change is still very limited in the study of organizational aspects of academic departments. In this study, the relations between organizational change and learn in academic departments are discussed

in deeper in chapter 6 and in article IV. My central claim in article IV relating to organizational learning is that most studies that claim to describe departmental leadership and change focus much more on improvement than on change. Change implies higher levels of learning than system improvement.

The theories of Weber and Lewin have strongly influenced most models of organizational culture change. In spite of their differences, they share the assumption that changes in organizational culture manifested with the incorporation of new ideas and practices are initiated by leaders either through their intended plans or by their charisma. Both theories present a clear division between change and stability. Both imply that leaders either through rational planning or charisma conduct the organization towards a desired state of equilibrium. Furthermore, both theories illustrate a bias in organizational thinking towards the management of ordered systems focusing on efficiency and stability. As I discuss in the next chapter, this assumption is challenged by complexity science.

4.2 Challenges faced by leadership in academic departments

One important point to be observed in leadership research is that it is always clearly associated with its context. As Middlehurst (2008) describes, scientific research on leadership emerged in the twentieth century and the main focus was initially on business, military and governmental organizations. As it will be discussed on the next section, the focus of study tended to be on individuals in formal leadership positions which resulted in a certain bias towards the study of white males that typically occupied such positions at that time in the US. Most research conducted until the second half of the twentieth century shared assumptions with a positivist paradigm marked by the search for universal patterns of leadership behavior (Middlehurst, 2008). The review of the literature that constitute the basis of chapter 6 and article IV in this thesis show that this tendency can also be identified in studies of leadership in higher education. Some authors have documented the influence of dominant ideas about leadership often expressed in terms of tales and myths on leadership practice (Birnbaum, 1989; Middlehurst, 2008). Bolden (2004) and Bryman (2007a) claim that traditional and contemporary theories of leadership influence discourses about policy and leadership practice in education. As Bryman (2007a) claims, although there is a variety of approaches in the

study of departmental leadership, most studies seem to identify similar features of expectations of leaders such as:

- maintenance of autonomy;
- consultation over important decisions;
- the fostering of collegiality (both democratic decision-making and mutual cooperativeness);
- and, fighting the department's corner with senior managers and through university structures.

Mainly the high value placed on leadership embedding commitment to the department's values express the specificity of middle leadership (department heads) in higher education in relation to other types of organizations. This illustrates the context in which heads of department are usually in a position where she/he is not directly involved with executive leadership – formulating and implementing policies from the overall structure of the university – but in defending and protecting academic staff sometimes in opposition to expectations from senior managers. In addition to the inherent challenges of being in such a specific position, heads of department in large research universities are also usually in a temporary position that they did not aspire when they assumed an academic position. As Wolverton, Ackerman, and Holt (2005) claim, recently appointed or elected heads of department usually have little knowledge regarding the complexity of the position that they have just taken. They are often described by colleagues as “people in the middle, hemmed in by a pincer movement of senior management and academic staff” (Bryman 2007b, p. 7). In this study, this is a situation that was clearly identified in the American department and, to a less extent, in the Norwegian department where the feature of authority was more intensively described by participants. Also the fact that most heads of department are in a temporary position characterized by conflicting demands does not facilitate the linear perspective towards change described by Lewin.

The question that is then often raised in the literature about departmental leadership is how successful leaders operate in this context. There is thus an explicit concern in identifying “what works”. Bryman (2007b, p. 6) lists main leadership behavior characteristics associated

with leadership effectiveness at the departmental level identified in his review of the literature published since the 1990s:

- clear sense of direction/strategic vision;
- preparing the department arrangements to facilitate the direction set;
- being considerate;
- fostering a supportive environment for staff to engage in their research and teaching;
- treating academic staff fairly and with integrity;
- allowing the opportunity to participate in key decisions/encouraging open communication;
- communicating well about the direction the department is going;
- acting as a role model/having credibility;
- creating a positive/collegial work atmosphere in the department;
- advancing the departments cause with respect to constituencies internal and external to the university and being proactive in doing so;
- providing feedback on performance;
- providing resources for and adjusting workloads to stimulate scholarship and research, and;
- making academic appointments that enhance department's reputation.

This seems to me to be a very demanding and even intimidating list of characteristics of leadership behavior. It can be questioned how the traditional head of department that entered the academic world without the initial intention of assuming a managerial position could be prepared to incorporate all the characteristics of this list. Furthermore, it is not clear if and how the elements in this list are related to organizational change that is the main concern in this study. Bryman (2007b, p. 3) also identifies in the literature some characteristics of leadership behavior associated with failure:

- failing to consult;
- not respecting existing values;
- actions that undermine collegiality;
- not promoting the interests of those who the leader is responsible;

- being uninvolved in the life of the department/institution;
- undermining autonomy, and;
- allowing the department to drift.

To a large extent, these are common sense behaviors to be avoided by leaders not only in the higher education sector. On the other hand, in both lists, behaviors that highlight the importance of fostering an atmosphere of collegiality and maintenance of autonomy resemble to a particular historical in higher education. Claims for accountability and increasing pressure to address external demands are often in contradiction with principles of autonomy, independence and professional orientation that have historically characterized work in higher education. That raises the question that if leadership play any role at all in such environments. For instance, Kerr and Jermier (1978) have argued that the need for independence and professional orientation can potentially neutralize the impact of both relationship and task-oriented leadership. However, as Bryman (2007b) claims, most of the literature suggests that professional orientation and collegiality in such work environments demand a more subtle form of leadership, different from leadership in the sense of providing direction in its traditional sense. In such environments, leadership would assume the shape of protection and support. Thus, for Bryman, task-oriented leadership in higher education is usually more associated to adverse effects and problems than with any possible desired effect. If we accept this claim, then it seems that leadership in higher education is not so much about what leaders should do, but rather about what they should avoid doing. Middlehurst (1993) makes a similar claim when she characterizes leaders in higher education as agents in cybernetics organizations. As she describes, a cybernetic organization reflect the image of a living system that self-corrects itself when deviations occur. It is a rather optimistic view of the organization as unit that learns with its environment and assumes corrective action when necessary. She suggests that leadership in such environments should be limited in order to allow the “self-correcting mechanisms of the institution to operate effectively” (Middlehurst, 1993, p. 64). This is a claim that is in accordance with the “learning organization” school that will be discussed in the next chapter.

For me, it is not clear what the difference between the leadership form suggested by Middlehurst and the traditional form of leadership in higher education based on a principle of collegiality and self-regulation is. It is also not clear if and how this perspectives towards

leadership in higher education explains change, As it will be further discussed, although the learning organization perspective presents some common assumptions regarding emergence in human organization, this is a perspective that is criticized by strands of complexity theory as it still seems to associate organizational success with system equilibrium.

In recent years, different conceptual perspectives have been applied in the study of leadership in academic departments. In the next section, I discuss the concept of transformational leadership as one influential attempt to describe the activity of leadership in processes of change in higher education. The claim for transformational leadership developed by Ramsden (1998a; 1998b) that I discuss on the next section is an influential one the field of leadership in higher education, besides being one of the few studies that targeted departmental leadership in a more detailed form.

4.2.1 Transformational leadership approaches

In an influential book called “Learning to lead in higher education” published in the 1990s, Paul Ramsden (1998a) discussed leadership in the same scenario of change that I described in chapter 2: mass higher education, knowledge growth, reduced or stagnate public funding and pressure for more accountability. As he describes, these changes have resulted in a growing sense of disillusionment among academic staff “whose confidence and spirit have been degraded” (Ramsden 1998, p. 3). By describing this scenario, Ramsden departs from the assumption that leadership is the most critical and cost-effective strategy to organizations that struggle to survive in turbulent times. His main focus on this book and in an article (Ramsden, 1998b) about the same topic is on leadership at the level of academic departments. In a survey that he conducted in the 1990s, department heads from the United Kingdom, Hong Kong, Singapore, New Zealand and Australia nominated what they perceived as the key challenges faced by academic leaders (Ramsden, 1998b, p. 7):

- Maintaining quality with fewer resources; doing more with less
- Managing and leading academic people at a time of rapid change
- Turbulence and alteration in the higher education environment
- Student numbers and responding to new types of students
- Balancing own academic work with the demands of being an academic leader.

The main argument in both the book and in the article is that the effective universities of the future “will require academic leaders whose qualities that resemble those of good teachers in higher education” (Ramsden 1998b, p. 347). It is thus assumed that the effective academic leader will be an individual capable to lead his or her followers through change. It is also assumed that the effective leaders of the future will have a clear grasp of external demands and will recognize the need to produce the qualities of excellence to guarantee a competitive position. Ramsden expresses this need for a new leadership model in the following terms: “it will have no fear of tighter monitoring of standards. It will welcome public scrutiny of its excellence, and it will delight in throwing off the self-forged shackles of cloistered narrowness” (1998b, p. 348). Ramsden advocates that transformational leadership in academic departments is associated to student-focused approaches to teaching, which in turn is linked to perceptions of effective teaching from the perspective of students. He defines transformational leadership as such: “a form of leadership which is held to be appropriate to the dynamic environment of the ‘learning organization’ in an external context of rapid change. It is a value-drive form of leadership which engages followers through inspiration, exemplary practice, collaboration, spontaneity and trust” (Ramsden, 1998, p. 66). His main claim was that transformational leadership was favorable in departments in which dialogue about teaching is encouraged. This kind of leadership is described by Brown and Moshavi (2002) as such:

- Idealized influence: transformational leaders entail sharing risks with followers and are consistent in their dealings with them.
- Inspirational motivation: transformational leaders provide meaning and challenge; show enthusiasm, and; arouses commitment to future states.
- Intellectual stimulation: transformational leaders stimulate innovation and creativity; encourages new ways of approaching work.
- Individualized consideration: close attention paid to followers’ needs; potential encouraged; personal differences recognized.

It is possible to identify at least one common feature of the concept of transformative leadership with the view of organizational change suggested by Weber that I discussed in the previous chapter: the aspect of charisma as a personal trait. Most transformational leadership

roles seem to be associated to charisma as a personal trait of the leader. In the context of academic departments, that would mean that effective individuals in formal leadership positions articulate a vision for the department and inspire academic staff to higher levels of performance and commitment. In fact, there are many challenges to this leadership model in the context of academic departments. First, the temporary status of most heads of department makes it difficult to assume the commitment to a long-term vision that this model of leadership requires. As stated before, the lack of training and experience also poses a challenge to transformational leadership. Other aspects of the context of most academic departments is that often leaders seem to be reluctant to assume a formal leadership position as they see themselves as academics rather than managers (Bryman 2007b, p. 9). The review of the literature conducted by Bryman (2007b) also highlights the low status attributed to leadership and management responsibilities among many academics. Rather than a career move, becoming a head of department is often viewed as a burden or a deviation from typical academic activities.

Some elements that demonstrate the low status of assuming a leadership position could be identified in both departments where I conducted the empirical part of this study although it was more clearly noticeable in the American department. Evidences of that will be given in the chapter 8 in which I analyze the empirical findings. Furthermore, one core argument of the transformational leadership perspective is that effective leaders achieve transformation through the symbols they project, the way they respond to crisis, the way they model their expectations, the way they allocate resources and how they deal with selection and dismissal of personnel. In the case of academic departments in which leaders are usually in a temporary position and, often assume a role to defend the departments' interests and internal values, it is really difficult to combine such practical managerial activities with the long-term thinking both in terms of projecting into the future and creating the atmosphere to implement a vision that transformational leadership implies. The analysis of how leaders describe their activities in the two departments in which I conducted my fieldwork highlighted the concern with such managerial everyday matters without establishing any clear connection between these and their vision of if/how change should happen in the department.

So far, I have discussed how traditional aspects of leadership in academic departments such as the temporary situation, lack of preparation and the low status limit the possibility for a transformational model of leadership. However, my own choice of complexity theory as the

theoretical framework in this study points out several conceptual challenges to transformational leadership. Transformational leadership has been criticized on the grounds that it remains still a one-person centered and does not take into account the context in which leadership is exercised. Some have even gone further by claiming that transformational leadership is too technicist, instrumental and often manipulative as it strongly relies on persuasion and influence (Allix, 2000). Other studies, mostly focusing on leadership on the school level have suggested a post-transformational leadership which is intrinsically value-led (Day, Harris, Hadfield, Toltey, & Beresford, 2000). This includes personal alignment with organizational alignment, moral consistency of integrity of actions, contextuality, continuing professional development, and reflection. Other strands of criticism towards transformational leadership claim that there is little in this concept about conflicts, resistance to change and paradoxes in organizational life. In chapter 6 and in article IV, I discuss how complexity theory recognizes and addresses the inherent paradoxical nature of human organization in complex systems.

Authors writing from the perspective of complexity theory have criticized the concept transformational leadership by claiming that assuming that it is possible to identify a direct relation of control between the actions of leaders and future events does not illustrate the reality of organizational life (Marion & Uhl-Bien, 2001). However, the same authors also recognize that there are some interesting elements of transformational leadership that are not in contradiction with complexity theory. For example, encouraging rather limiting risk-taking and new ways of approaching work are important aspect of leadership in processes of complex change. However, change is assumed to take place in a fundamentally different way in complex systems. While the transformational leadership concept implies that transformations are created, complex thinking departs from the starting point that transformations emerge. Complex theorists usually refocus their analysis from the relationships between direct leadership behavior and organizational outcome to the analysis of the relationship between transformational environments and fitness to the activity of leadership in catalyzing (rather than creating) such environments (Marion & Uhl-Bien, 2001). Some authors explore the nature of network dynamics from which changes emerge or discuss the nature of control vs. enabling in changing networks. This is a discussion that I conduct in article IV in this study.

In spite of the many differences between Ramsden's claim for transformational leadership and the complex leadership approach that I apply in this study, it is possible to identify some common aspects. Among his conclusions, he states that in times of change in higher education "the art of leadership is to help people to live with uncertainty" (Ramsden 1998b, p. 369). Stacey (2010, p. 216) makes a similar claim when he claims that from a complex perspective, "one recognized as leader has a greater capacity than others to live with the anxiety of not knowing and of not being in control". He also highlights the need for leaders to demonstrate willingness to live with paradox, risk-taking and to nurture tolerance. The recognition of paradoxes in organizational life (Allen, 1996) is indeed a central aspect of complexity leadership as it will be discussed in chapter 6.

Ramsden (1998a) addresses his book to individuals who are or have recently been in academic positions and work in higher education institutions as "middle managers" of academics. However, he refers to leadership in a broader perspective embedding "all everyday process of supporting, managing, developing and aspiring academic colleagues. In this second sense, leadership in universities can and should be exercised by everyone, from the vice chancellor to the casual car park attendant" (p. 4). This assertion opens space for the discussion about dispersed leadership in higher education that Ramsden also briefly advocates in his book.

4.2.2 Dispersing leadership

For Ramsden (1998a), the reason why universities have survived and adapted to different historical circumstances lies in the combination of two factors that are apparently opposites. According to him, these are intrinsic and the extrinsic values of higher education. The first relates to the search for truth and disinterested pursuit of knowledge, while the second refers to the capacity to respond to external demands. However, typical responses aiming at increasing organizational efficiency to external demands had a series of negative internal costs on the career prospects and morale of academic staff, a growing sense of anxiety and in some cases a sense of betrayal. The solution that Ramsden suggests to the discontentment in higher education institutions is "effective leadership" at multiple levels in terms of what he vaguely defines as "softer" (1998a, p. 256), human side of leadership as enabling and supporting people, and aligning their goals to the vision of the university. He claims that this

requires a view of university planning as “shared process which assumes that the environment can be controlled, and does not simply have to be responded to” (1998a, p. 256). So the dispersal of leadership across the organization is assumed by Ramsden to be a key feature of organizational success in higher education. He states that in federal organizations such as large research universities there is a need for strong and responsive leadership in the local level who understands the vision of the university. In this context, heads of departments should be able to identify and tackle what he regards as pressures towards fragmentation and incoherence of products and processes caused by basic elements of traditional academic culture such as self-direction, diffused decision-making, autonomy, individualism, peer review and separation of knowledge into separate areas. It is not clear in his book how local leaders can impact and contribute to change such elements of academic culture associated to the fragmentation that he describes as “ill-matched to proactive adaptation, organized ability to change, client-centredness, and a common vision” (p. 256). However, he is clear in his claim that part of the “solution” consists in the decentralization of power from the top management to heads of department able to identify everyday mechanisms that people employ to resist to centrally and/or externally designed change towards a common vision.

Ramsden does not deepen the discussion about dispersed leadership as a concept and seems to refer to it mainly as a process of decentralization and delegation of power from senior to middle management (heads of department). However, the concept of distributed leadership has a broader meaning by referring not only the distribution of authority but the creation of an environment in which leadership becomes a group activity through interconnections, rather than individual action (McBeath, Oduro, & Waterhouse, 2004). The relation between distributed leadership and organizational change is the subject of the next section.

4.2.3 Distributed leadership and organizational change

The research of distributed leadership has been more extensive and developed into leadership of primary and secondary education rather than on higher education and has implied that leadership in successful institutions are usually dispersed across the organization rather than residing on the role of the head teacher alone. There are different definitions of the concept. Gronn (2000) advocates that distributed leadership has to be understood in terms of concertive action where the total is always significantly more than the sum of its parts. He

claims that for an analytical focus on three forms of concretely patterned activity-based conduct in terms of structural solidity: spontaneous collaboration, intuitive working relations, and institutionalized practices. Spillane (2004) suggests that “from a distributed leadership perspective, leadership practice takes shape in the interaction of people and their situation rather than from the actions of an individual leader” (p. 3). This is a perspective that offers a very inclusive way of seeing organizational life in which individuals and groups at different levels collectively influence strategic direction. Spillane, Halverson, and Diamond (2004) argue that the fundamental unit of analysis is on leadership practice which is constructed and formed over time through the interaction of leaders, followers and situation. These authors distinguish between three forms of distributed leadership: collaborated distribution (when individuals work together in time and space to lead), collective distribution (when individuals work separately and independently to practice leadership), and coordinated distribution (when individuals work in sequence to accomplish a leadership routine). This is a concept that is usually associated to the notions of “learning organization” and systems thinking suggested by Senge (2006) which limitations I discuss on chapter 5.

Spillane’s (2004) approach to leadership as the interaction between leaders, followers and context resonates with complexity theory. However, main normative claims linked to distributed leadership can not be associated to complexity theory. The main recommendation for leadership practice coming from this perspective indicates organizational effectiveness is to be associated with the decentralization of leadership. Besides different definition, there are different claims about forms that distributed leadership might assume to contribute to organizational success. For example, the study of patterns of leadership practice in schools conducted by Leithwood, Mascal, Strauss, Sacks, Memon, and Yashkina (2007) suggests that distributed leadership involves two key aspects for successful distribution of leadership. The initial condition is that leadership activities should be distributed to individuals who either have or can develop the expertise required to carry out such activities. Furthermore, they claim that distributed leadership requires coordination and planning.

The article by Harris, Leithwood, Day, Sammons, and Hopkins (2007) reviewed the research literature relating distributed leadership and organizational outcomes in schools. The article was written in a policy and professional context marked by increasing concerns about student achievements. The increasing emphasis on standards and benchmarking reflected a social and political expectation for improved performance and student achievement. As the authors

describe, distributed leadership was presented in this context as concept with the potential to create an organizational environment in which positive changes could emerge in the school system. However, it is interesting to notice that the article does not present any clear definition of change. The words change, improvement and achievement are presented interchangeably in the article which suggests that the main concern is with identifying aspects of leadership that can contribute to schools to secure and sustain improved performance. It is important to observe that the article seems to imply that change is associated with improvement and that is an understanding of organizational change that is different from the one emphasized in this study as it is discussed in chapter 6. Harris et al (2007) concluded that although there is encouraging evidence that there is a positive relation between distributed leadership and organizational change in school, further research was still necessary to understand the potential of the concept as well as its limitations and inadequacies. Among the conclusions, there are the recognition of contextual and situational aspects and the call to the dynamics of change in organization: “distributed leadership is not necessarily a good or a bad thing. It depends. Distributed leadership does not automatically result in organizational improvement. Much depends on the way in which leadership is distributed, how it is distributed and for what purpose” (Harris et al., 2007, p. 345).

The application of this concept to the context of leadership in academic departments would anticipate that the dispersal of the activity of leadership among individuals, rather than the concentration on the hands of the department head and the deputy head can be linked to organizational success. Distributed leadership is one of the central concepts that framed the international study of leadership conducted by Gibbs et al. (2008) in 19 departments identified as examples of quality in teaching. The departments in the case studies in which were conducted were exceptional in different ways. Some were winners of national prizes for best teaching in their countries, some were identified as world emulators of teaching practices in their academic field, while others concentrated a high number of teaching awards in their universities. These were each in its own way, unusual departments and therefore the authors of this investigation if the leadership of teaching in these departments were different than in “average” departments. Moreover, the study aimed at identifying aspects of leadership practice common in all departments. However, the study concluded that teaching excellence was achieved in “entirely different ways involving widely contrasting leadership behavior” (Gibbs et al 2008, p. 416.). In two cases there was little evidence of leadership playing a decisive role in achieving teaching excellence. Although most departments had in different

ways spread leadership across the department, it was not a rule. Dispersed leadership was identified in some departments, it could not be claimed that it was a fundamental factor to be associated with quality in teaching. The issue of change was also investigated. The study sought to investigate if changes over time in teaching could be identified as the result of planned processes of strategic change or resulted from small-scale exploration that were gradually being taken up more extensively. In some departments, change assumed an explicit emergent character as innovation was brought in idiosyncratic ways by individual initiatives within a supportive environment and not part of any organized planning or agreement. In departments where strategies towards planned change were implemented and where it might be possible that changes would not have happened otherwise, the authors did not identify any direct connection between such strategies and how change occurred: “it may be that cultures other than strongly collegiate ones drive out emergent change and swamp it with planned or enforced processes” (Gibbs et al. 2008, p. 428).

There were no cases of a head of department being responsible for impacting excellence in teaching within a single term of office. This is an important finding that has implications for the way departmental heads are appointed and their terms of office determined, and also for the timescales of institutional teaching development initiatives that heads are sometimes expected to respond to. This observation brings again the view of changes as movement in time that I discussed on the previous chapter. Gibbs et al. (2008) conclude by questioning the assumption about the general applicability of any existing leadership theory towards system efficiency – the main focus of their study - or cultural change. Furthermore, they claim that any possible advice about how leadership should be exercised should pay attention to the context than assume there is any fixed set of tools of how change should be achieved. The theoretical foundations of their study do not seem to be informed by complexity theory, and the way they use the concept of emergence does not explicitly refers to it as an ontology in itself. However, their main conclusion – the refutation of the existence of a single formula for leadership practice and cultural change in academic departments - is compatible with the application of complexity studies to the study of cultural changes in organizations.

I discuss some of the limitations of the application of the concept of distributed leadership on chapter 8 and on article IV of this thesis. However, as the present chapter refers to organizational change, it is important that I conclude this section by summing up my argument about the limitations of this concept to the study of the phenomenon that I am

investigating which is leadership and change in academic departments. The first limitation is that the literature about departmental leadership does not present any relation between this concept and organizational change in the sense that I investigate in this study. As Johannessen (2009) describes, this concept has its roots in a bottom-up approach calling for cooperative leadership in which managers work together with other members in the organization in their efforts to implement change in work processes towards increasing productivity. The argument for shift from individual leadership towards empowered team organization guided by visions and values implies is rooted in such approach. In fact, as Johannessen (2009), claim this is a model that in some contexts might even have the potential of avoiding, rather than fostering deep cultural changes. This is because its concerns with group interests and group thinking might overshadow individuality and difference to a point in which intolerance to new thinking might emerge:

indeed, the necessary distance and difference needed to take on the role of 'leader', falls in danger of being collapsed into the common pool of 'us'. This also means that power is more subtle and concerning identity and roles of leaders could be so diffuse that it becomes difficult to actually address processes of change in organizations. (Johannessen, 2009, p. 216)

Second, although some authors writing about distributed leadership, might claim to depart from system thinking, the concept itself does not seem to me to have any relation to complexity theory or to the philosophical assumptions that I have discussed so far. In a more prescriptive fashion, some authors writing from a systems perspective have argued that complexity theory suggests a distributed leadership model within which any particular person will participate as a leader or follower in different occasions and for different purposes (Lichtenstein, Uhl-Bien, Marion, Seers, & Orton, 2006). It seems to me that sometimes there is a tendency to equate self-organization, which is one of central concept of complexity theory, with self-regulation when in fact these are two different things. As I understand complexity theory, its application to the study of academic departments or any other form of human organization would indicate the organizational reality is far more intricate than it is portrayed by this prescription. In spite of its empowering and democratizing connotation, it seems to me that the paradoxical and unpredictable aspects of organizational reality. Furthermore, I do not identify any connection between this concept and the ontological emergence that I discussed on the previous chapter. In the next section, I provide a conceptual

bridge between the challenges associated with cultural change and leadership theories that I discussed so far and complexity theory.

4.3 A bridge to complexity theory

The concern with the local organizational context of departmental leadership that Gibbs and colleagues highlight in their conclusion revokes the issue of contextuality that I addressed on the previous chapter. During the review of the literature in this chapter, I came across different studies about leadership that have in one or another way demonstrated concern with the context, but without deepening the discussion of what contexts are. In most studies, there seems to be an interest in first developing some general concept of leadership informed by what is identified as challenges of each historical period and then providing sets of recommendations or advices. The analysis of the concepts and theories of leadership change discussed in this session confirms the assertion of Osborn, Hunt, and Jauch (2002, p. 799) that “traditional leadership approaches usually start by discussing individuals and what they do as if they almost always operate in conventional organizations”. The concern with the complexities of each local context usually comes after that and often in the shape of a discussion of the limitations of some general concept or theory of leadership. That is clear the case in the concepts that I have discussed in this chapter so far. Those are concepts that influenced the initial steps of my own project and that influenced my way of thinking at this stage. However, as I conducted my data gathering and got familiar with central concepts of complexity theory, I started asking myself the following question: what happens if we address organizational phenomena the other way around? What if we assume local complexity as our starting point as an integral part of how we see the world, rather than a latter set of conditions or local complexities under which we test and often recognize the limitations of our general assertions? Assuming this as an intellectual project might even indicate that we need to redefine the word “theory”. Therefore complexity theory cannot be regarded as a “theory” in the usual sense of the word but a general perspective from which we see the world and, more specifically address departmental leadership. This is not to say that current leadership theorizing is invalid, but recognizing that it is inevitably incomplete. The different leadership concepts and ways of seeing leadership and culture change play important roles in highlighting different aspects of the phenomena. On the other hand, if we assume that reality

is paradoxical with apparently opposites such as stability and instability, equilibrium and non-equilibrium, continuity and change co-existing in CASs, then various approaches are relevant for different conditions.

At this stage, it is important to review the critical realist position. From the critical realist perspective that I assume here, human social forms and human consciousness emerge, each formed by the other at the same time. Therefore the ideas in which we base the way we try to make sense of the world around us also shape this world. By assuming this perspective, it became clear to me that I would have to use different concepts to analyze the data that was I gathering instead of using the same concepts such as transformational or distributed leadership used by Ramsden (1998a; 1998b) and Gibbs et al (2008). If my critical realist position assumed that “solutions” are always unique as in a complex world similar conditions only repeat themselves by accidents and not by law, I would have to start a journey more open to discovery instead of focusing on goals determined by the exploration of general concepts or theories previously used to study departmental leadership. So rather than trying to analyze my data in the light of such concepts, my choice was to analyze the “fragments” of the reality in the form of accounts from the participants as movements in time marked by points of bifurcations in which new meanings could emerge or not. As highlighted in this chapter, the literature about leadership in higher education institutions highlights key challenges faced by leaders in academic departments. I could also identify some of these challenges in my empirical investigation: managing and leading academic staff at a time of rapid change; turbulence and change in the higher education environment, and; responding to a larger and more diversified students. When leaders in academic departments engage in processes of interaction with academic staff and work with the of challenges related to leadership of teaching mentioned along this section, they encounter moments of uncertainty and exploration of the unknown from which conditions for the emergence of new patterns of behavior may emerge.

As I discuss academic departments as CASs, it is understandable that the reader will expect me to bring new insights on how academic departments can be led in adaptive ways. This is a fair expectation and this is a question that I answer throughout the two concluding chapters of part I that have an interpretive character. Nevertheless, before answering this question my theoretical framework demands that I discuss and question main assumptions in the debate about leadership in higher education. Therefore I have formulated the problem statement of

this study as a process of reconceptualization. It is this reconceptualization that is main goal here. As the critical realist perspective applied here assumes that the reality of the world of organizational dynamics at the same time shapes and is shaped by our perceptions, then perceptions become the primary source of evidence. The central concepts of complexity theory applied to this study of human organization that I present and discuss in the next chapter are the tools that I use to analyze such evidence.

4.4 Summary

This first part of this chapter reviewed classical perspectives in the study of organizational culture change. I presented a critical review of the theories of Lewin (planned cultural change) and Weber (routinization of charisma) and discussed the differences between these and main conceptual assumptions in this study. In the second part, I narrowed down the discussion to the specific context of challenges related to change in higher education. The literature about leadership and culture change in higher education identifies a series of challenges faced by leaders in academic departments and has usually aiming at identifying patterns of behavior associated to success in addressing such issues. Transformational leadership and the dispersal of leadership were advocated by Ramsden (1998a, 1998b) as main central elements of successful universities. On the other hand the study of Gibbs et al. (2007, 2009) concluding by highlighting the contextual aspects of leadership which suggests that we need to address the relation between leadership and cultural change in higher education in a different ways. In the third part, I provide a further insight on my reflection as changes on my own assumptions during the development of this research and relate to the main goals of this project.

5. Complexity Theory

Most studies into higher education leadership so far have implied in one way or another in a principle of equilibrium. In chapter 2 I discussed the concept of sustainability and initiated the discussion on one of the key aspects of this study: a critical view of the notion of system equilibrium that permeates most higher education reform initiatives and organizational responses to external demands. In this sense complexity theory, which has many parallels with the development of realism in sociological thought, breaks with the main assumptions supporting dominant perspectives in the study of organizations.

While the dictionary definition of “complex” is something that is difficult to understand or a synonym for “complicated”, “complexity” means here that the analytical focus is on systems where patterns of behavior emerge from different sets of interrelations which cannot be understood in a linear fashion (Byrne, 1998). Globalization in itself revived a sociological interest in systems, as the empirical analysis of large-scale interconnections required new theoretical tools because events in one part of the world affect those in another. Complexity theory is an ambitious intellectual project that addresses the tension between the formulation of general theory and the search for contextual and specific understanding. By encouraging a re-thinking of the nature of living systems, it offers an anti-reductionist approach. As Walby (2003) puts it, the quest for general theory in the social sciences has often involved breaking complex events down to simpler ones. This might mean reducing events down to smaller units or, perhaps, reducing upwards as is the case with structuralist thought in the human sciences. However, some schools of thought reject the quest for general explanation by focusing on the meaning of human actors, making use of rich descriptions rather than causal explanation. By focusing on interconnectiveness and processes of emergence, complexity theory has the ambition of providing tools that facilitate “the development of some concerns of classical sociology, such as combining an understanding of both individual and social structure, that does not deny the significance of the self-reflexivity of the human subject while yet theorizing changes in the social totality” (Walby, 2003, p. 2). On the chapter about research methods, I discuss how human reflexivity, meanings and perceptions have become part of the research agenda of complexity theory.

Broadly speaking, complexity theory is not a single unified theory, but a worldview that incorporates perceptions of limitations and the exhaustion of previous ones. It is the result of a multidisciplinary movement that emerged in the sciences, mainly in the fields of physics and biology (Hatch & Cunliffe, 2006; Urry, 2005). While the previous chapters discussed philosophical assumptions and implication of the understanding of complexity theory that embeds this study, the next section presents some key scientific developments that contributed to the rise of this worldview.

5.1 A multidisciplinary development

Founded in the 1980s, the Santa Fé Institute, which brings together researchers from different areas with the common interest of developing and applying the “new science of complexity” (Waldrop, 1992), provides the following definition of complexity

Complexity theory refers to the condition of the universe which is integrated and yet too rich and varied for us to understand in simple common mechanistic or linear ways. We can understand many parts of the universe in these ways but the larger and more intricately related phenomena can only be understood by principles and patterns – not in detail. Complexity deals with the nature of emergence, innovation, learning and adaptation. (Santa Fé Group, cited in Battram, 1999, p. V)

Although the concept of complexity did not begin to have an impact on the social sciences until the late 1990s, it can only be understood as part of a broader scientific development that occurred throughout the twentieth century. In 1996, the physical chemist and non-linear scientist Ilya Prigogine defended the end of the division between natural and social sciences by claiming that both were characterized by “complexity” (Urry, 2005). Prigogine, who won the Nobel Prize in 1977 for his work on dissipative structures, complex systems, and irreversibility, posed the following question in his last book *The End of Certainty*: Is the future given, or is it under perpetual construction? His answer to this question was that every level of the universe is perpetually being constructed and that processes of construction are to be understood in non-equilibrium terms marked by unpredictability where new order emerges from disorder (Prigogine, 1997). His main contribution was in thermodynamics, where he described dissipative systems as operating far from thermodynamic equilibrium in a constant exchange of energy and matter with its environment (Capra, 1996). These structures not only

maintain stability, but also evolve and change under non-equilibrium. When the flow of energy and matter increases, these systems may transform themselves into new structures, thus adopting new levels of complexity. He understood life as an unstable system with an unpredictable future marked by the irreversibility of time (Stacey, 2010). Prigogine characterized evolution as encountering bifurcations in which the taking of paths depends on the internal and external interrelations of systems at these points. Bearing that in mind, he sees similarities in nature's and human creativity and that is the point of departure for his call of new dialogue with our physical environment moving from domination and control. In his analysis, agents develop new patterns of interaction and at the same time are being formed by these interactions. This is a paradoxical form of causality that is defined by Stacey (2010) as transformative causality. Stacey "translates" Prigogine's claims to the study of human organization in the following terms:

If we are to think of human organizations in these terms, it would mean that interdependent individual agents are forming patterns of organization/society in the interplay of their intentional acts while, at the same time, being formed by patterns they are creating where what is being formed is personal identity, including ways of thinking. This is the causality of perpetual construction of the future as movement into the unknown. (p. 57)

In physics observations of the limitations of the Newtonian principles during the early twentieth century were the starting point for the discussion on complexity as a new scientific view. This involved a re-conceptualization of how we perceive time and space. Before that, time was seen as invariant, infinitely divisible, measurable in length, and reversible. In the twentieth century, sciences demonstrated that time is local, an internal characteristic of any system of measurement. It varies as to how and where it is measured. Time and space are not disassociated from each other, but are combined in a four-dimensional axis under the influence of mass (Urry, 2005, p. 4). Einstein's mathematical description of the photoelectric effect explained how light is not only a wave, but is also composed of particles – photons. This is known as the wave-particle duality of light. Einstein did not invalidate Newtonian physics, but demonstrated that there were more perspectives for understanding reality. For Tôres (2005, p. 4, *my translation FB*), "Einstein showed that the universe is not composed only of matter but also of energy. Furthermore, energy and matter are the same thing: $E=mc^2$. We are matter and energy, we manifest ourselves as particle and as wave". Rather than being obstacles to the understanding of the world, paradoxes were then seen as an inherent part of

reality. For Hawking and Mlodinow (2010), the acceptance of dualities – contexts in where two very different theories explain the same phenomenon – is coherent with model-dependent realism. They defend an understanding of reality throughout a network of theories which together constitute M-theory. For them “no single theory within the network can describe every aspect of the universe – all the forces of nature, the particles that feel those forces, and the framework of space and time in which is plays out” (p. 58).

Furthermore, the development of quantum physics described the state in which electrons move in different and unpredictable directions before settling in particular patterns. The study of quantum behavior demonstrated that it takes place in simultaneous and unknowable ways and moved the analytical focus from the parts to the interactions or interrelations between them. This is also known as the “principle of uncertainty”.

The concept of chaos is a key part of complexity science. While in popular usage the word “chaos” means anti-order, in the scientific usage it is understood as not-order as described by Hayles (1991, p. 1): “in both literature and science, chaos has been conceptualized as extremely complex information, rather than absence of order”. This is a fundamental distinction. The metaphor of the “Butterfly Effect” illustrates what complexity science understands by chaos which usually means sensitive dependence on initial conditions in complex systems. It is based on Edward Lorenz’s work on weather forecasting (Capra, 1996; Levy, 2006, Wikipedia, 2010). In 1961, he was running a numerical computer model which would give a graphic representation of the weather. He decided to rerun the test using the decimal .506 as his initial data instead of the full .506127. His expectation was that rerunning the test ignoring the three last decimals would have a minimal impact on the graphical representation that he was trying to produce. To his great surprise, the computer model produced a completely different representation of the weather. The sensitivity to initial conditions makes it difficult to predict outcomes in complex systems as predictability would require here knowledge about tiny changes and the measurement of each to an infinite degree of precision. The classical metaphor here is that the “flip of a butterfly in São Paulo can cause a hurricane in Florida” (Stacey, 2010). Thus small variations can have big effects, while “big causes” can have little or no impact at all. The concept of “edge of chaos” (Stacey, 1996) is the main application of such notion of chaos to the study of organizations. In chapter 8, I present an understanding of “edge of chaos” which is the basis of the interpretation of findings in this study.

Not every aspect of chaos theory seems to be relevant when studying human organization, as its applications are usually related to computer modeling, which usually displays new patterns according to pre-determined equations and according to which results vary, but only in relation to initial conditions. In other words, they do not model internal creativity (or human learning and creativity, as in the case of human organizations). However, this theory brings relevant insight into the unpredictability of living systems which challenges dominant management discourses that build their foundation on principles of rationalism, efficiency, and formative causality, assuming that control and long-term predictability are possible. Even if we think in mathematical terms, we have elements to challenge the linearity of relationships, which is usually expressed as $Y=a+bX$, where a is the initial condition and where the future Y is determined by the impact X of the factor b . As Byrne (1998, p. 18) maintains, “it has been remarked that ‘regression equations are the laws of Science’ and indeed the search for laws in science has in essence consisted of attempts to find relationships which can be formalized in linear terms”. There is nothing intrinsically wrong with linear equations like this other than the fact that they have inherent limitations due to the fact that most systems, especially living systems, do not work this way. Non-linearity also gives us the methodological concern with multicausality, which will be discussed in more detail in the methodology section.

Before narrowing down this discussion from broad scientific developments to the application of central concepts of complexity science to the study of organizations, the next section presents complexity in terms of worldviews.

5.2 Worldviews

It is important to bear in mind that complexity theory is not a uniform single theory but a set of scientific developments that together give us a new way of seeing the world. Dent (1999, p. 5) defines complexity theory as “an approach to research, study and perspective that makes the philosophical assumptions of the emerging worldview – these include perspectival observation, mutual causation, relationships as units of analysis, and others”. The definition of worldview that I use here is the one provided by Norton (1991, p. 75): “the constellations of

beliefs, values and concepts that give shape and meaning to the world a person experiences and acts within". Another valuable definition is the one provided by Tôrres (2005, p. 1, *my translation FB*): "a worldview is a conceptual window through which we perceive and appreciate the world both to understand it and to transform it". This set of values and beliefs does not always appear as a structured and systematic philosophy but the values and beliefs manifest themselves as sets of backgrounds, assumptions upon which we organize thought, perceptions, and actions (Morgan, 1980; Gladwin, Kennelly, & Krause, 1995). However, different forces use different mechanisms to cohere, legitimize, and consolidate the worldview, which is also seen in the mechanism of self-reinforcement (Kuhn, 1996; Gladwin et al., 1995). This helps us to understand why worldviews are so resistant and why the paradigm shift always needs a long time-span to consolidate itself. The rise of a new worldview occurs when our perception of limitations grows and when our dissatisfaction with the dominant worldview increases. For Capra (1982), there is essentially a crisis of perception when people realize that a dominant mental model does not provide answers and solutions that satisfy questions and challenges of their time. Hence the complex worldview rises from the limitations of two dominant worldviews in the study of organizations – the *mechanistic* and the *economic* worldviews.

The *mechanistic worldview* has its foundations in Newton's laws of scientific rationalism legitimized by physical and mathematical logic (Tôrres, 2005). The world is seen through the metaphor of the market. In this view the focus of organizations is on structures and tasks. Leaders here concentrate power and assume command and control through a top-down decision-making process. Linearity, monocausality, determinism, reductionism, and immediatism are key principles here. This worldview is characterized by the rise of positivist philosophy and the technological development that originated during the industrial revolution. At that time, organizations were divided into different units according to specific tasks. With the exception of individuals in formal management positions who centralized power and control, people were seen as "human resources". Strategy is formulated by following a principle of mechanical efficiency.

The *economic worldview* has its origins in the late 1970s with new developments in information technology, where the metaphor of the market supplanted to a great extent the metaphor of the machine (Tôrres, 2005). In this worldview the focus of organizations is the market and the customer. Structure and tasks are similar to the mechanistic worldview: the

worker applies knowledge that already exists while managers try to implement procedures that have been associated with examples of success. Competitiveness is emphasized in different spheres of human life and a culture of quality control and benchmarking is imposed.

The *complex worldview* of reality is essentially defined by relationships and processes. Monocausality is seen as the exception and not the rule, as outcomes are seen as the effects of multiple interactions. Rather than searching for one single “right answer”, it is accepted that there might be many right answers, sometimes paradoxical and sometimes even contradictory. Reality is seen as a web of relationships where non-linearity is the main feature (Capra, 1996). When it comes to understanding organizations, this worldview claims that more important than focusing on structures, it is necessary to observe the quality of relationships and processes. This approach also claims that rather than having a management culture of command and control, it is necessary to encourage dialogue and shared leadership which will contribute to creativity.

Table 2 illustrates these different worldviews:

Table 2
Comparing the three worldviews

	Mechanistic	Economic	Complex
Organizational outlook	Parts	Parts	Interrelations
Knowledge claims	Right Answer	What gives profit	Many right answers / contradictions
Thinking	Linear thought	Linear thought	Complex thought
Ontology	Objectivity	Objectivity	Collective, focus on diversity
Success	Mechanical Efficiency	Efficiency and competitiveness	Cooperation
Decision-making	Top - down	Top – down	Shared meaning and consensus
Leadership	Command and control	Command, quality control	Shared leadership
Organizational focus	Structures and tasks	Market, customer, profit	Relationships and processes

5.3 Complexity and organizations

In the previous section, I used Tôrres' conception of worldviews and how these influenced general perceptions about organizations. Stacey (2006, p. 75) presents two well-established perspectives on the study of strategy that are challenged by complexity theory that in many ways reflect these worldviews. The first one, which he labels as *strategic choice*, assumes that organizations adapt to external conditions by rearranging themselves according to principles of logic, intentionality, and rationality. The second, called *ecology* or *adaptation through competitive selection*, implies that there is an evolutionary process of competitive selection in which organizations adapt to external change. Here adaptation is assumed to be limited by institutional inertia and the need for external resources. In spite of the differences, these perspectives share the Newtonian and Darwinian assumptions that the successful organizations are characterized by negative feedback processes, moving towards predictable states of adaptation to external conditions. While adaptation through choice can be associated with the mechanistic worldview, adaptation through competitive selection can be identified with the economic worldview. As claimed by Stacey (2006), these two well-established perspectives enable an understanding of organizations operating in stable equilibrium, where change can be predicted either by identifying past behavior or selecting foreseeable outcomes from a limited range of behavior. However, the ontological emergence discussed in chapter 3 highlights the limitations of such assumption. Furthermore, in both adaptation through choice and adaptation through competitive selection, changes are seen as movement from one state of stability to another. Another limitation of such perspectives identified by Stacey (2006) is the difficulty in understanding innovation as "this shift to a new, predictable state of equilibrium state is not the same as true innovation and creativity because that which is truly new is not already in the past or the present and cannot therefore be predicted" (p. 82).

It is possible to observe that different views on strategy and change have different implications to how learning is perceived in organizations as discussed in chapter 6. Table 3 illustrates different assumptions regarding strategy processes in well-established perceptions of organizational processes and contrasts these with the complex perspective:

Table 3

Fundamental assumptions on system dynamics made in different perspectives on the strategy process

Adaptation through choice	Adaptation through competitive selection	Complex perspective
Clear-cut cause and effect links- predictability	Clear-cut cause-and-effect links- predictability	Clear-cut cause-and-effect links – but they are circular. leading to unexpected outcomes
Organizations intentionally seek adaptive equilibrium	Organizations are selected according to criteria of equilibrium adaptation	Organizations are nonequilibrium systems with disorderly dynamics
Long-term outcomes are intentional and chosen	Long-term outcomes determined by environment and inertia of organization	Long-term outcomes are partly emergent and partly intentional
Negative feedback drives systems, i.e. individual organization	Negative feedback drives systems, i.e. individual organization	Complex nonlinear systems with positive and negative feedback. Spontaneous self-organization and creative destruction

Source: Stacey (2006, p. 79)

In the language of complexity, feedback loops are fundamental properties of organizational life (Pascale, 2006; Stacey, 2006, 2010). In this sense when we talk about negative or positive feedback, we do not mean whether the outcome is “good” or “bad”. Negative feedback processes refer to goal-seeking loops that generate action with the objective of moving or keeping the system at a desired state. In other words, negative feedback focuses on the stability of the system, whereas positive feedback can destabilize the system and make it move in an unpredicted direction. Positive feedback can amplify changes and move a system from its equilibrium state. This is a particularly important distinction as the research question that I am investigating is related to organizational change. So far I have discussed the concepts of non-linearity and non-equilibrium in living systems. Below I introduce and describe other main principles of organizations seen as CASs which enable us to understand how change occurs and how new patterns of behavior are created:

Self-organization: CASs are formed by a large number of agents interacting with others according to the system’s own principles of local interactions. No individual

or group of individuals is controlling these interactions. These patterns of local interaction are called self-organization, which is an emergent property of the system. The classical example of self-organization in CASs is the human brain, which consists of billions of neurons working as agents discharging energy (Freeman, 1994). Each neuron is connected to a small number of other neurons and from the local interactions emerge continuous patterns of behavior across the whole population. Stacey (2010) shows some common ways of misunderstanding self-organization. One is the equation with empowerment. Another is to equate self-organization with an anarchic context where everyone can do whatever they want. Self-organization is the complete opposite of that. Agents' responses are constraining, and enable each other, if they just do what they want, they will most certainly be excluded. This then links to the principle of interdependence.

Interdependence: in living systems interdependence assumes that decisions and actions of one agent may affect other agents in the same system. This mutual dependence means that the behavior of every individual depends on the behavior of others. As Mitleton-Kelly (2003, p. 5) describes it, "the greater interdependence between related systems entities the wider the 'ripples' of perturbation or disturbance of a move or action by any other one entity on all other related entities". This means that when one agent tries to improve or maximize his or her own position, this might have a detrimental effect on others.

Co-evolution: in biology, co-evolution is described by Kauffman and Macready (1995) as "a process of coupled, deforming landscapes where the adaptive moves of one entity alter the landscapes of its neighbors". In a process of interdependence, the evolution of one system or agent within the system is always to some extent dependent on the evolution of other systems or agents. This distinction made here between co-evolution and adaptation to external changes challenges much of the traditional thinking about organization and management. Change here is seen to take place in the context of co-evolution with other agents and systems, rather than being isolated adaptation to a different environment.

5.4 Complexity and leadership

One point of discussion in organizational studies is if and how leadership and management are related. Since my main research question here focuses on processes of change, my option is to regard leadership and management as different but intertwined processes. Most commonly, leadership is given the task of deciding change and originating something new, while management is tasked with maintenance and problem solving (Fineman, Sims & Gabriel, 2005, p. 86). Both in the academic debate and in the common perception of organizational issues, this distinction seems to be blurred as people in formal management positions are often expected to play the role of leaders. The two dominant perspectives in the study of organizations that I presented in the previous section approach leadership in different and competing ways. On the other hand, although complexity theory is a relatively new approach in organizational studies, it has already produced a variety of ways of conceptualizing leadership that have in common the fact that they challenge previously dominant discourses.

The literature review of the leadership field reveals an evolving movement across different schools of thought that did not always answer questions raised by other schools but moved the discussion forward and attempted to focus on different aspects of leadership (Bryman, Gillingwater, & McGuiness, 1996). For the “adaptation through choice” perspective, leadership is seen as embedded in the figure of individual leaders who control and manage organizations through a principle of technical rationality, efficiency, optimization and routine (Terry, 1995). Here the distinction between management and leadership does not exist. It was assumed here that the leader was an exceptional person with qualities that made him fitted to be followed. The reason why I used exclusively “him” here is due to the fact that in the earliest studies, this approach saw leadership as “primarily male, military and Western” (Bolden, Gosling, Marturano, & Dennison 2003, p. 6). The focus here was on identifying key personal characteristics of leaders. Institutional theory that arose in the 1970s and is identified more with the “adaptation through competitive selection” perspective claimed that organizations could not be understood only as rational instruments with specific purposes, but also as adaptive social structures with other needs fulfilled if the organization is to survive, adapt and compete. In his classical work entitled *Leadership in Administration*, Selznick (1984) identifies leadership institutional functions such as definition of mission, institutional integrity, and resolving internal conflict. His main argument was that the main task of the

leader is to transform the organization into an institution: “the executive becomes a statesman as he makes the transition from administrative management to institutional leadership” (Selznick, 1984, p. 4). For institutionalists, leaders play a fundamental role in inspiring a shared vision and consolidating organizational identity. For instance, Schein (1985, p. 317) describe the role of leadership in the following terms: “the unique and essential function of leadership is the manipulation of culture”.

5.4.1 The learning organization

Senge (2006) used a system perspective to develop the concept of organizational learning claiming that learning is a fundamental characteristic of adaptive organizations. His organizational learning perspective described the leader as the designer of the whole organization and thus as the integrator of learning ideas or “the five disciplines”: system thinking, personal mastery, mental models, shared vision and team learning (p. 321). Even though Senge sees leaders as a part of the living systems that they design, his perspective still contextualize leaders as central planners in designing and managing new ideas, guardians of organizational vision and also as teachers. In some way, it can be regarded that Senge combines aspects of systems thinking with conceptualizations of leadership identified with the open systems school of thought in organizational studies. However, both the designing role of leaders and the concept of the learning organization suggested by Senge are either questioned or reduced by latest developments in complexity theory as it is the case of the concept of complex responsive processes that will be discussed later.

5.4.2 Complex adaptive leadership

The concept of complex leadership was originally suggested by Marion and Uhl-Bien (2001), claiming that traditional hierarchical views of leadership represent oversimplifications of organizational reality that do not take into account the complex adaptive needs of organizations in the knowledge-based economy. In this context, “rather than leading for efficiency and control, appropriate to manufacturing, organizations find themselves leading for adaptability, knowledge and learning” (Uhl-Bien, Marion, & McKelvey, 2007, p. 301).

Their claim is that leadership studies and practices need to move from a top-down design to a model that enables interconnectivity and enhances dynamic system behavior and innovation (Marion & Uhl-Bien, 2003). Rather than a skill or a symbol, they see leadership as an emergent outcome of interactions between agents (Lichtenstein, Uhl-Bien, Marion, Seers, Orton & Schreiber, 2006). From this perspective, leadership has three main functions. The first one which Uhl-Bien et al. (2007) call *adaptive leadership* describes adaptive, creative, and learning events that emerge from interactions. These are informal emergent dynamic events that occur in the context of internal tension. The second leadership function, called *administrative leadership*, relates to the role played by individuals in formal leadership positions. The third function, *enabling leadership*, is understood as the intertwining of both bureaucratic (administrative leadership) and emergent (adaptive leadership). This intertwining, the authors prefer the term “entanglement”, involves creating appropriate organizational conditions that facilitate adaptive leadership and enhance the flow of knowledge and creativity from emergent to formal bureaucratic structures.

Perceptions of the leader’s role are the outcome of relations of interdependence and, rather than just creating the system, the leader is also created by it through a process of aggregation and emergence. However, the importance of the people occupying formal leadership positions is underscored. Although the authors focus on interrelations and approach leadership as an emergent property that permeates the whole system, they still focus on the role of individuals in formal leadership positions and bureaucracy:

[...] as all organizations are bureaucracies (there are no such things as ‘post-bureaucratic organization’), CAS necessarily interact with formal bureaucratic structures in organizations. Moreover, there are times and conditions in which rationalized structure and coordination (e.g. hierarchical authority) need to be emphasized in subunits (e.g. when the environment is stable and the system seeks to enhance profits). (Uhl-Bien et al., 2007, p. 305)

There are many arguments in their works where the designing role of people in formal leadership positions is highlighted. For example, there is the expressed claim that complex leaders foster network construction, build interdependence that enables tension, stimulate bottom-up behavior, spark creativity, and foster distributed intelligence (Marion & Uhl-Bien, 2003). For Marion and Uhl-Bien, formal leaders can enhance complexity and enable tension from which creativity emerges. The complex responsive process perspective that will be

discussed in the next section questions this enabling role as complexity is seen here as an inherent characteristic of organizational reality rather than a feature that can be enabled or potentialized by leaders,

5.4.3 Complex responsive processes

The work of the Complexity and Management Centre at the University of Hertfordshire represents a more profound break with traditional models of leadership by advocating an approach that resonates in many ways with a critical realist thinking emphasizing intersubjectivity, emergence, and both individual and collective agency (Griffin, Shaw, & Stacey, 2006, p. 183). It assumes a critical perspective on Senge's concept of learning organization that, according to Stacey (2006, p. 237), reifies and anthropomorphizes organizations. For the authors of this research center, the learning organization concept is part of a movement in organizational studies that uses insights of complexity theory in a way that they call "rational constructivism" (Griffin et al., 2006, p. 164). According to this theory, while talking about changing mental models, perceptions, and paradigms, rational constructivism implies that such changes can take place in an intentional and designed way, which is a perspective that imports notions of complexity and accommodates these in traditional management thinking.

Stacey and associates do not see learning happening in organizations exclusively as individual processes, nor do they say that an organization (a thing) can learn. Learning is understood as an activity of people in processes of interaction and interdependence (Stacey, 2006). The complex responsive process theory suggested by Stacey, Griffin and Shaw (2000) looks at organizations as patterns of people's interactions which produces further interaction. Instead of looking at organizations as the main object of study, the focus on interactions moves from a spatial metaphor in which one contextualizes individuals producing a system higher than them, to a temporal process of human interaction: "organizations are then understood as processes of human relating, because it is in the simultaneously cooperative-consensual and conflictual-competitive relating between people that everything organizational happens. [...] As they do so, they perpetually construct their future together as the present" (Stacey & Griffin, 2005, p. 4). Self-organization here means widespread coherence that emerges from

individual's local patterns of interactions without being planned or controlled by any overall policy. As new patterns emerge from these local interactions, leaders do not have the power to determine, conduct cultural change or transform organizations based only on their vision. The concept of complex responsive processes thus has implications for power relations as it is in the context of interactions that power takes place. Every human relation is embedded by some relation of power that at the same time enables and constrains: "as soon as we enter into relationships we constrain and are constrained by others and, of course, we also enable and are enabled by others. Power is this shifting enabling-constraining others on the relative need for each other" (Stacey & Griffin, 2005, p. 6). The complex responsive process questions mainstream leadership thinking by claiming that the role of the leader emerges in social processes of recognition. When working together, individuals engage in interaction characterized by communication and power relation in which mutual responses are constantly being provoked (Stacey & Griffin, 2005, p. 10). These interactions involve processes of mutual recognition in which the role of the leader is co-created.

The shift from a spatial to a temporal metaphor questions systems thinking upon which organizational learning is based as this perspective is fundamentally based on the first metaphor. For Stacey (2006) much of the criticism of the dominant management discourses, even within complexity theory, take for granted that organizations are entities that actually exist outside of human interaction. In this sense, both the dominant view and its critique claiming to use systems thinking assume that individuals are located at one level of existence while organizations are located at another level. Thus, organizations are reified sometimes as mechanistic things and sometimes as living systems (organisms) with purposes and intentions of their own. The organization is thus a metaphorical state outside the individual. For Stacey (2010, p. 125) the problem with this representation is that when "thinking in this metaphorical way about mind and society, we are abstracting from our experience of the direct interaction between bodies and of bodies with themselves by postulating the existence of spaces outside that direct interaction". Instead of seeing organizations consisting of individual people as parts that produce a whole, he argues that organizations are evolving patterns of interaction between people who apply tools to make sense of these interactions. Systems are thus tools constructed and employed by people in order to provide an understanding of how different tasks are connected. However, as Stacey claims, that it is not the same as saying that people are parts of a system.

In terms of methodological concerns, the approach suggested by authors from this research center does not conceptualize causality within a traditional rationale (moving toward a pre-chosen goal) as it has been the tradition in management studies, but rather focuses on cognitive processes and on the living present from which an unknown future emerges. This is what Stacey (2010, p. 58) defines as transformative causality characterized by diverse micro interactions and escalation of small changes. The focus on transformative change through the interpretation of story-telling, participant observation, and narratives is constantly present in their writings. As discussed in chapter 7, the present study shares some of its methodological assumptions with those of proponents of the concept of complex responsive processes. However, it is also assumed that both complex responsive process and system thinking are important contributions that are not necessarily incompatible.

5.5 Why systems and responsive processes

Different strands of thought applying complexity theory to the study of human organizations assume different position regarding the usefulness of the concept of systems. Stacey and his colleagues from the Hertfordshire group assume a critical position towards systems thinking that they label as the “dominant discourse on the management of human organizations” (Stacey et al, 2000, p. 56). For them, systems thinking may contribute to the understanding of stability but it does not account for the emergence of novelty and new forms of behavior that did not exist previously. However, their criticism of systems thinking goes far beyond that. It is the focus on organizations as imaginative constructs seen as wholes that is criticized. In this sense, it is important to clarify here what Stacey and his collaborators understand as systems. For those scholars, systems are thing-like entities that can be identified, designed and controlled either from outside or from above. Their understanding of system thinking assumes that the concept of systems intrinsically implies in an externalist perspective. However, although I recognize that the complex responsive processes perspective is a powerful approach to the study of organizations, in my view Stacey’s polemic criticism of systems thinking presents either some misunderstanding of the concept of systems or an understanding that still associates systems with early cybernetics.

As I understand, both perspectives emphasize emergence as part of organizational reality. However, it is possible to highlight here that the concept of complex responsive processes goes further in moving from a spatial to a temporal perspective that early system thinking does. The goal of the present section is to present an argument to why complex responsive processes and systems thinking can be complimentary perspectives rather than mutually excluding ones.

I justify here why, in my view, the concept of systems is a valid one to the understanding of organizations. Before focusing on differences between the two perspectives, it is important to summarize what complex responsive processes and systems thinking have in common:

- The recognition of the emergent nature of organizational reality
- The importance of local-level dynamics
- The importance of everyday life interactions marked by intentions, spontaneity, creative and rational action
- Unpredictability of the future.

The view of organizational transformation as well as organizational phenomena emerging and re-emerging in process of local interaction is common to both perspectives. For both perspectives, organizational change has to be understood in the context of changes in people's behavior in local situations in which routines, values and established power relations are expressed. On the other hand, the disagreement between these two perspectives is about the validity of using a model called system to understand organizational reality. The abstraction process of creating a model and identifying something as a system always involves some degree of simplification of the reality. Luoma, Hämäläinen and Saarinen (2011) express this in the following terms: "the map is not the territory, and life is more than any models, concepts of systems to describe it" (p. 8). However, the same authors affirm that it does not mean that models, and particularly systems, are not useful as conceptual tools. When we talk about complex systems what we are actually doing is to apply descriptive terms that will help us to understand our reality. We are not saying that organizations *are* systems, but by looking at them *as* systems, we are using conceptual tools such as system properties that help our sense-making process.

In this study, I have stated that I understand systems as sets of relationships. This set of relationship involves processes that take place in a context. I understand systems as not physically real or measurable but as perceived subjectively by participants in their context. Contextuality is important here as “although it might be difficult to articulate in what sense a ‘context’ exists and what it involves, it is hard to envision human life without reference to contexts” (Luoma et al., 2011, p. 4). In this sense, a system can be a conceptual device used by people to relate and identify themselves with their surrounding environment. The relation of systems with contextuality is described by Luoma et al. (2011) in the following terms: “the system might also present itself as ‘the context’, ‘the situation’ or ‘the environment’, amounting to an integrated whole on a time axis and in the process of becoming” (p. 4). It is particularly important for the empirical part of this study focusing on perceptions that people perceive wholes as real. This was expressed in many ways by participants when they described their experiences as members of academic departments or of the broader academic community in their research field. It is not possible to understand people’s identities without taking into consideration social constructs such as nations, families and social groupings to which individuals usually relate to. Both bonding and exclusion are human phenomenon in which enabling and restraining processes occur. These processes take place in the context of sets of relationships that I understand as systems. This view of systems is not one that reifies organizations as it no way claims that systems learn or have objectives of their own. The focus is rather on perceptions of processes of human interaction from which objectives and identities emerge.

The criticism presented by Stacey and his collaborators in relation to system thinking seems to be a reaction to what they regard as an externalist position. From this position, leaders act *upon* systems that they identify as predictive, cause-effect models. I agree with Stacey’s criticism of this perspective but, on the other hand, I believe that it is possible to think about systems from a different perspective. There is nothing in the concept of CASs that indicates that these models follow an objectivistic and positivistic epistemology. Systems do not need to be perceived as objective entities but should be understood as abstractions that express values and experiences. In this sense, I agree with Luoma et al.’ assertion that “it is quite feasible to imagine human intelligence as operating in *terms of systems* as opposed to being focused from the outside *upon* systems or being thinking *about* systems” (2011, p. 5). In my view, this is a perspective that is compatible with the main message behind complex responsive processes: an individual leader cannot possibly transform an organization as a

whole due exclusively to her/his own design because organizational changes emerge in unpredictable ways from complex nets of interactions. Here leaders are important players due to their visibility and power configurations but are part of the system and are operating in the unknown like everyone else. Her/his activities and position in power relations also emerge and change as the systems changes. From this perspective, we have a view of systems that does not reify organizations. In the abstraction suggested here, changes happen as emergent processes in a temporal dimension and in particular contexts of human interaction.

The criticism that the systems perspective implies in an externalist position is in itself a very paradoxical one especially if we follow a methodological approach that focuses on perceptions. This is because people often experience “wholes” as real. Participants in this study often described their experiences in relation to their perception of being members of a department, of a community of scholars or staff of a university. Of course from the position of a researcher investigating processes of organizational change, it is possible to talk about the limitations of abstract concepts like systems. However assuming that the “wholes” that people often describe as real when they describe their own experiences do not exist means in itself assuming an externalist perspective. This is a perspective that is valid and often necessary to understand certain aspects of organizational life. On the other hand, it also shows that trying to understand emergent issues in organizations being it from the perspective of the researcher or of the leader demands some external view on what is going on. However, as perceptions of the role of the leader are also emergent, it is important to focus on the paradox nature of leadership in which *both* the external *and* the internal co-exist in processes of movement over time. That leads to the reflection about paradoxes in organizational life that will be discussed in the next section.

5.6 Paradox in organizations

On section 3.1 I discuss the acceptance of dualities as part of the multidisciplinary development of complexity theory. It is important to discuss the implications of the recognition of dualities for the study of organizations. The particle-wave duality of light is regarded as an evidence of the existence of paradoxes in nature. I use here the definition of paradox presented by Slaatte (1968, p. 4): “a paradox is an idea involving two opposing

thoughts or propositions which, however, contradictory, are equally necessary to convey a more imposing, illuminating, life-related or provocative insight into truth than either factor can muster in its own right". So paradox is a situation when two contradictory and even mutually exclusive ideas are equally valid and necessary explanations of the same phenomenon. Cameron (1986) differs paradox from other concepts such as dilemma, irony, inconsistency, dialectic, ambivalence and conflict that are often used as synonyms. As Cameron (1986) defines, the main difference between paradox and other concepts is that no choice needs to be made between two or more contradictions. In this article written from an open-systems perspective, he discusses the existence of paradoxes that he regards as an inherent characteristic of effectiveness in organizations.

Table 4 illustrates the difference between paradox and other concepts.

Table 4

Cameron's differentiation of paradox from other concepts often assumed to be synonyms

Paradox: two opposing but equally valid ideas	\neq	Dilemma: either-or situation, when one alternative must be selected over another
		Irony: when an expected or contradictory outcome arises from a single alternative
		Inconsistency: a discontinuity from past patterns
		Dialectic: a pattern which always begins followed by an antithesis and resolved by a synthesis
		Ambivalence: uncertainty over which of two or more attractive alternatives should be chosen
		Conflict: perpetuation of an alternative at the expense of others

From the perspective of complexity theory, when we accept the existence of paradoxes in organizations, these are seen as non-equilibrium systems marked by contradictory processes making it impossible to leaders to consolidate or identify a shared vision about goals and outcomes in the long term. Also from the perspective of complexity theory, a clear paradox is the fact the dynamics of interaction from which power relations emerge at same time enable and constrain individuals to act.

In the previous section, I presented arguments why a systems perspective and complex responsive processes are complimentary concepts that can therefore be used together. Some would say that the assumption that both perspectives are valid create a paradox in which individuals can sometimes be external observers at one time and participants in another time. Sometimes, writings claiming to follow a system perspective present this “either ... or” presenting prescriptive solutions and recommendations for leadership practice. My understanding of paradox here is more radical than that. In my view, understanding the paradoxical nature of leadership involves shifting from an “either ... or” position to a “both ... and” position. In this sense, the activity of leaders as complex individuals has to be understood *both* as observers *and* as participants at the same time. So in order to understand the paradoxical nature of leadership, one needs different perspectives focusing *both* on the abstract *and* on the concrete, *both* on live experiences *and* the abstractions we make of these. Furthermore, the review of the literature about departmental leadership in article I and chapter 4 shows how the idea of paradox has been almost absent in previous studies.

5.7 Discussion: higher education as a matter of complexity

Although scholars from the Hertfordshire group adopt a critical view towards the system perspective, I would like to use Stacey’s (2001) own definition of CAS to demonstrate why I believe organizational change in higher education institutions is complexity in action:

A complex adaptive system consists of a large number of agents, each of which behaves according to its own principles of local interaction. No individual agent or groups of agents determines the patterns of behaviors that the system as a whole displays, or how these patterns evolve, and neither does anything outside the system. (p. 106)

For me, the resonance of this definition with the organizational reality of a large research university is powerful. In these institutions, we find teachers and administrators (individual agents), groups of agents (managers, teaching teams) and external forces that do not linearly determine the patterns of behavior of the whole system. Understanding change in such higher education institutions involves reflecting upon how teaching teams in academic departments self-organize and eventually change in relation to new challenges in particularly unpredictable ways that might seem irrational to someone outside the environment in which change either occurs or do not take place. It also involves understanding how stability and change may paradoxically co-exist. Another reason is that higher education institutions are facing profound changes in which outcomes are unknown. Although we are still far from fully grasping how these changes take place, it is fair to assume that they involve behavior, values, beliefs and culture. The issue of organizational change and learning in higher education will be discussed in more detail in the next chapters but at this point, it seems clear that linear ways of thinking about causes and effects of change will, at the most, provide a very limited understanding.

The novelty of applying complexity theory to the study of organizational change in higher education is that it employs a different worldview in relation to most conceptual models that have been utilized. I use the example of two conceptual models that have been influential in the field of higher education, even though they assume contrary positions in relation to higher education reform, use the same metaphors, and depart from the same worldview: Slaughter & Leslie's "academic capitalism" and Clark's concept of the "entrepreneurial university". The first uses resource dependence theory that sees organizations as not being self-directed and autonomously pursuing their own ends undisturbed by other settings (Pfeffer & Salancik, 1978, p. 257). Resource dependence theory claims that a given organization will respond to and be dependent on other organizations in the same environment that control resources that are critical to its operations and over which it has limited control. Leslie and Slaughter (1997, p. 8) claim that higher education institutions respond to change in funding patterns by turning to academic capitalism which they define as the "institutional and professorial market-like efforts to secure external moneys". For them, this has the risk of both business failure and the failure to meet societal demands which might undermine public confidence. Clark (1998, p. 7) presents a more positive view by claiming that entrepreneurial universities overcome these risks, as their response to environmental changes is to diversify the funding sources to better

enable the possibility of making significant moves without waiting for central reforms that might bring standardized rules.

Even though contrary positions are proposed in the study when it comes to organizational change in higher education, both concepts share an origin in an open-systems perspective in which outcomes are related both to environmental changes and organizational inertia. It is a perspective based on adaptation through competitive selection and the metaphor of the market. Although presenting different considerations regarding market-oriented reforms in higher education, these two approaches share a common origin in the open systems perspective. This perspective conceptualizes organizations as open systems in dynamic equilibrium with their environments. The underlying assumption is that organizations seen as open-systems can be moved one context of dynamic equilibrium to another according to either centrally planned goals or shared visions of what organizational outcomes should be in contexts of external competition for resources. On the other hand, the novelty of the approach that I suggest is that transformational rather than only incremental changes emerge in processes of self-organization. The metaphor of the network highlights the importance of interactions and feedback loops that in my view resonates much more with transformative changes.

During my literature review I encountered two main interpretive approaches to organizations within complexity theory that, although sharing some common assumptions as to the limitations of previously dominant views on management, present opposing views on the concept of systems. We can observe that one of the reasons why these models differ is that they seem to have been produced for different purposes. While the complex leadership model seems to have been constructed to propose changes in practice that will bring about improvement, the complex responsive processes model was designed to help us understand what people are already doing (Stacey, 2010, p. 122). In this study I choose to investigate leadership in higher education institutions as CASs, but in doing this I intentionally incorporate elements of both approaches. I argue that this is fully viable with respect to the understanding of complex systems that I propose here. Furthermore, it is consistent with the ontological emergence discussed in chapter 3. I share Stacey's assertion that organizations are essentially evolving patterns of interaction between people and it is problematic to look at systems as something outside and thus larger than people. However, if we conceptually understand systems purely as sets of interactions between people, we do not necessarily

assume that systems are entities located outside humans and thus governed by a vision of their own. We still find here that the main focus is on people's interactions that produce further interactions in which new patterns of behavior emerge. Viewing organizations as systems can be important for the sake of delimitation, meaning the specific patterns of interaction that we are investigating in a nested system.

The differences between the complex adaptive systems and the complex responsive process approaches indicate that complexity theory reconceptualizes some of the epistemological and ontological disputes that have characterized organizational studies. These will be discussed in the next chapter dealing with methodology and knowledge theory. At the beginning of this discussion I mentioned characteristics of higher education institutions which in my view illustrate how complex large research universities are. However, as Casti (1986, p. 149) defines complexity, it is less an intrinsic property of the systems that we try to observe than a matter of the perspective assumed by the observer. This claim highlights the ontological and epistemological implications of emergence discussed so far. That is what is called "second-order complexity", which leads to the implications for ontology and methodology that will be discussed in the research methods chapter. Second-order complexity resonates with the ontological emergence that I discussed in chapter 3.

In the next chapter, I discuss the implications of complexity theory to the discussions about organizational learning and change in organizations.

5.8 Summary

This chapter presented a literature review of the origins of complexity theory and schools of thought in organizational studies that take their point of departure from a complex worldview. I summarized main scientific developments that challenge dominant views in management studies such as rational and adaptive choice based on Newtonian principles and highlighted limitations of classical approaches to strategy. In my discussion, I demonstrated the novelty of complexity theory in relation to some main concepts aiming at understanding organizational change in higher education institutions. I also presented the differences between Senge's concept of organizational learning, complex adaptive leadership and complex adaptive

process. Furthermore, I discussed how systems perspective and complex responsive processes can be compatible approaches enabling an understanding of the paradoxical nature of leadership. How the concept of CASs fits the organizational reality of higher education institutions was also discussed.

6. Organizational Change and Learning

This study examines organizational change. However, change has been presented in different and sometimes vaguely defined ways in the organizational studies of higher education institutions. The goal of the present chapter is two-fold. First, it discusses a change in educational perspectives from a teaching-centered towards a learning-centered paradigm which resonates with sustainability and transformation. Second, it discusses organizational change using insights from the system perspective. This discussion is relevant as we are now moving from the theoretical to the empirical part of this study and narrowing down from the CAS approach to the case of transformative changes in higher education. The central argument of this study so far can be summarized as follows: during the past two decades conceptions of change in leadership in higher education have been dominated by neo-conservative thinking on the role of higher education and organizations in society. The main argument here is that there is a clear contradiction between the paradigm of instrumentalism and managerialism in which the dominant discourse is rooted and between the concepts of transformative change and sustainability that complexity theory advocates. Policy efforts to create excellence and enhance quality seem to be predicated on an understanding of human systems that leans towards equilibrium. However, from a complex worldview, creativity and innovation do not emerge from order (Marion & Uhl-Bien, 2001; Middleton-Kelly, 2003; Pascale, 2006; Stacey, 2006). It is assumed here that change and learning are intertwined concepts. The relation between these two concepts and the implications for leadership are the main concerns of this chapter.

6.1 Changing paradigms and learning

I have discussed so far a complex way of thinking about organizations as a response to perceptions of limitations and signs of exhaustion in dominant paradigms in organizational thinking. Paradigmatic changes have been described by Kuhn (1996) in *The Structure of Scientific Revolutions*, one of the most influential books on the philosophy of science. The main idea suggested by this book is that the development of science is not uniform but presents alternating “normal” and “revolutionary” phases. Paradigmatic changes take place

when the ruling paradigm is perceived as not able to provide a satisfactory answer to certain anomalies. It is the accumulation of such anomalies that leads to scientific revolutions, when the previously dominant paradigm is substituted by another paradigm. Bateson (1972) contributed to the discussion on paradigm change and the fundamental role of learning in such processes. For him, transformative change never takes place without learning. But on the other hand, learning can also occur without necessarily implying paradigmatic changes. He describes different learning levels:

Learning level I: this level is related to self-correction. It is usually related to changes in perceptions of errors in choosing the right alternative. It is sometimes expressed in “right-wrong” situations. In other situations it involves common notions of learning as acquisition of new skills and new knowledge (cumulative). For Tosey (2006, p. 7), this level of learning is the central focus of much learning in higher education and management reform policies. For Sterling (2004, p. 55), it is related to “*doing things better*” and it characterizes much of the quality raising discourse in Western educational systems. *Efficiency* is a key word here.

Learning level II: is more than merely learning, here one learns how to learn. It is related to learning the features of a context in which the learning activity takes places. According to Sterling (2005, p. 55), this level is about “*doing better things*”. It introduces a reflexive feature to learning as context involves social influence that is interpreted individually and often without collective consensus. *Effectiveness* is the key dimension here.

Learning level III: to the same extent as level II this is a change in the process of level I. Level III represents changes in the process of learning level II as it involves a corrective change in the systems of *sets* of alternatives. Sterling (2004, p. 55) also calls this epistemic learning and claims that this learning level can be expressed in terms of “*seeing things differently*”.

Learning can serve either to keep a system in a condition of stability or change it into a new state in relation to its surrounding environment. It is very often the case that different levels of

learning co-exist. For this study of change, the most relevant feature of this typology is found in the difference between the first two levels and level III: while learning levels I and II suggest change within the paradigm, level III has a much higher transformative potential. While learning within the boundaries of the prevailing paradigm does not change it, learning that recognizes this paradigm and enables reflection upon its limitations can be transformative. The rise of a paradigm of system sustainability and demands for complex adaptive change derive from learning level III which is the key notion of second-order change (transformative change). On the other hand, first-order change is what has become embedded in higher education reform policies. Sterling (2004, p. 63) differentiates between the first and second orders of change as illustrated by table 5:

Table 5
Difference between first-order change and second-order change

Improving/reforming educational systems	AND	Transforming educational systems
Making adjustments in existing system		Redesigning education systems
Piecemeal change		Whole system/systemic change
Planning process		Design process
Designing for the future		Designing the future
Adaptive learning		Transformative learning

Source: Sterling (2004, p. 63)

Rather than accommodation and reformation, transformative learning is thus associated with deeper changes in terms of transforming educational systems. This means a shift in paradigms from one marked by determinism, objectivity, and control that is not capable of coping with the internal and external complexity, uncertainty, and mutual causality. But when we talk about transformative learning in higher education institutions, who are the learners? If we consider that universities are composed of a number of agents, such as administrators, lecturers, and students, who are interdependent members of a community of learners even though they have to relate to different power relations, then the answer to the above question is “everyone”. Transformative learning thus has implications for both educational paradigms

and leadership in higher education institutions. These will be the topics of the two next sections, respectively.

6.2 From teaching to learning paradigm

For Nygaard and Holtham (2008), the dominant paradigm in higher education implies that learning takes place as a result of transference of knowledge from teachers to students. Curricula are designed with a strict concern for the transfer of content rather than learning processes (Nygaard & Holtham, 2008, p. 11). According to this paradigm, the activity of the teacher in terms of presentation skills equates with learning. The typical instruction-focused model in higher education implies that methods for evaluating outcomes are pre-specified and prescribed as if they were objective and independent of context. This paradigm relies on a perception of a closed system designed according to predetermined objectives and is very textbook based. In this *content-centered* approach, it is possible to say that both levels I and II of learning are emphasized but definitely not level III, which is the level of learning in which paradigmatic changes towards sustainability might occur.

However, a shift in educational approaches from content-centered to a *learning-centered* view has been advocated by many authors (Banathy, 1999; Biggs, 2007; Nygaard & Holtham, 2008; Sterling, 2004; Tosey, 2002, 2006). Such emphasis on learning has been characterized by some authors as a shift of paradigms from teaching to learning. In brief, this can be described as a shift in the mission of universities from institutions whose mission is to provide instruction to institutions whose mission is to produce learning (Barr & Tagg, 1995). For the first, the mission is to provide instruction, and the means and ends are one and the same. On the other hand, for the learning paradigm, the end and the product are separate and the end governs the means. The new paradigm is based on the assumption that better learning is related to the behavior of the lecturers and the way they design their courses is what facilitates deep learning rather than some essential characteristics of individual students. The locus of the lecturer's activity shifts from the self and the classroom to the student and to the wider environment as the teacher's conception of learning changes (Trigwell & Prosser, 1996). Planning moves from the immediate "what I will say" to the longer term: "what the students

will do, what they will need and how they will be assessed”. The shift of paradigms was welcomed by Barr and Tagg (1995) on the following terms:

We are beginning to recognize that our dominant paradigm mistakes a means for an end. It takes the means or method – called “instruction” or “teaching” – and makes it the college’s end or purpose. To say that the purpose of colleges is to provide instruction is like saying that General Motor’s business is to operate assembly lines or that the purpose of medical care is to fill hospital beds. We now see that our mission is not instruction but rather that of producing *learning* with every student by *whatever* means work best. (p. 1)

This discussion was highlighted in a historical context when higher education shifted from elite education to massification, where the academic landscape became more accessible to a larger and more diversified student group. Educational development programs have been established to support institutional values and to help teachers cope with changes in this new environment. But there are more than pedagogical concerns here as the new paradigm also has influence on the structures and behavior of universities as it implies a redefinition of purposes of higher education and new criteria for assessing organizational success. Sterling’s four “Ps” (Paradigm, Purpose, Policy, and Practice) give insight into how a shift in paradigms has implications for various aspects of higher education, including leadership practice. For example, in their analysis of leadership in academic environments in Sweden, Mårtensson and Roxå (2009) concluded that “this perspective entails a shift from focus on the leader, or even on the leader’s activities, to the led, a shift that mirrors the well-known shift from a focus on the teacher and what he or she does to the students, what they do and achieve” (p. 218). These authors emphasize the role of leaders as planners, guides, and facilitators who support educational development. However, although the roles that Mårtensson and Roxå attributed to educational leadership have an interesting potential, my theoretical framework indicates that changes usually take place in non-linear and unpredictable ways, and it is often difficult to determine when and how changes are initiated. This is especially the case with transformative change which involves learning and creation of meaning that cannot be determined exclusively by the vision of those occupying formal leadership positions.

As we have discussed up to now, we are dealing with a process of transformative change that involves shifts in paradigms. The question that arises now is how complex changes take place in higher education institutions and how leadership is related to changes. Moreover, the shift from knowledge transmission to learning involves a whole system change that leads to

profound changes in the working lives of those working in higher education. This in turn has implications for all the four “P”s of education, as suggested by Sterling:

Table 6 represents changes the four “P”s of whole system change in higher education as described by Sterling:

Table 6

The four “P”s of whole system change in higher education

	Old	New
<i>Paradigm</i>	higher education rooted in a mechanistic paradigm embedded in reductionism, positivism, and objectivism	higher education reflecting upon a paradigm founded on a complex view of the world embedded in holism and critical subjectivity
		opens for changes in...
<i>Purpose</i>	higher education seen as preparation for economic life	broader education for sustainable changes in overall systems: economy, ecology, environment
		opens for changes in...
<i>Policy</i>	higher education seen in terms of products	higher education seen in terms of processes of developing capacity through life at both the social and individual level through continuous learning
		opens for changes in...
<i>Practice</i>	higher education seen as instruction and transmission	learning seen as participative, dynamic learning process generating knowledge and meaning, solving real-world/situated problems

Source: adapted from Sterling (2004, p. 64)

If we look at complexity theory as a theory of change and evolution through relationships, interesting reflections about a complex agenda for the philosophy of education emerge. However, little has been written about the implications of complexity theory to philosophy of education (Morrison, 2008). On the other hand, if we follow Fullan's (1989) claim that change equals learning, thus learning becomes a central element of both complexity theory and philosophy of education. Morrison (2008) raises some interesting questions in relation to the implications of complexity theory to educational practice such as "what does it mean to 'know' in times of uncertainty?" (p. 19) and "what constitutes a web of learning rather than a programmed sequence of learning?" (p. 20). These are challenging questions that I do not aim at fully answering in this study. However, the concepts of *deep* and *surface learning* that I mention in the two empirical articles constitute one way of starting a reflection about the implications of complexity theory to educational practice.

These concepts were discussed by Biggs (2003) departing from the assumption that learning is a way of interacting with the world. This means that as people learn, their conceptions of reality change and they see the world differently. As I understand, this claim can be seen as point of interaction between philosophy of education and complexity theory. For Biggs (1999), education is seen in terms of conceptual changes rather than transmission and acquisition of factual knowledge. Hence, although Biggs' contribution does not seem to be informed or inspired by complexity theory, there are at least two main common assumptions: learning resonates with change and learning changes the way we interact with the world. As Biggs (1999, 2003) suggests, the concepts of surface and deep approaches to learning are one way of discussing changes in teaching in a context when lecturers see major difficulties in maintaining academic standards in larger and more diversified classes. Deep learning involves the analysis of new ideas, critically establishing relations to already known concepts and principles, leading to understanding and long-term retention of concepts so that they can be used in unfamiliar situations. On the other hand, the surface approach implies a tacit acceptance and memorization of information as isolated and unlinked pieces leading to superficial retention in order to pass exams and does not promote long-term knowledge and understanding. Surface and deep approaches to learning are not understood as intrinsic personal characteristics of students, but as reactions to the teaching environment. It is clear for me that the idea of deep changes towards sustainability which is the perception of global

challenges that embeds this study resonates with the deep approach to learning and not with the surface approach. This is a claim also presented by Pepper and Wildy (2008) in a study about embedding change towards sustainability in secondary schools. Their main empirical observation was that embedding transformative changes toward educational institutions demands deep learning not only from students, but from different agents in educational settings. This is particularly challenging also in higher education because as argued by Biggs (1999), the main challenge in relation to pedagogical practice in higher education is that although good teaching supports the deep approach, most of the traditional practice encourages the surface approach.

The next sections discuss changes in the four Ps of whole system change in the light of the main aspects of complex organizational change and present my understanding of complex adaptive leadership.

6.3 Complex organizational change

The complex change examined in this study is one in which new patterns of behavior emerge from interactions where cause and effect are not easily identifiable, if not impossible to determine, and where responses from various participants in the process might appear to be irrational. Change is usually an emotional experience involving different feelings ranging from the positive, such as excitement, challenge, and relief, to the negative, such as fear, resistance, threat, and skepticism regarding the reasons and/or benefits of change (Jackson, 2005). Negative feelings are usually expressed in terms of what Stacey (2010, p. 113) calls the “arts of resistance”, which are everyday informal and often hidden attitudes to coping with official demands which otherwise aim at providing an image of unanimity and harmony. Together with macro reform projects there is always local interaction that might support or subvert those projects and which might lead to unexpected and detrimental outcomes. Some examples of the “art of resistance” were given by participants in this study.

The reform agenda that I discussed in Chapter 2 emphasizes effectiveness, efficiency, and improving practices. Sometimes the idea is also expressed that disseminating good practice is equal to “coping” and “adapting”. One of the main arguments of this study is that although all these aspects of change require some level of learning, they still represent a way of changing

within the boundary of one paradigm. Contrastingly, the quality discourse on higher education reform has been regarded as a factor that impedes changes rather than enabling them. This is described by Jackson (2005) as follows:

the reform agenda for higher education increasingly pushes teachers and institutions to the levels of change that are most difficult to accomplish. This is compounded by quality assurance environments that discourage risk taking and work environments that are unable to provide the space and time for individuals and groups of individuals to think through and make these changes (p. 6).

Most quality assurance mechanisms are based on performance according to predicted goals and applicable to closed systems that are assumed to be predictable and in a state of equilibrium. However, if we think of academic departments as CASSs, we need to think in other terms. Moreover, transformative change requires a much higher level of creativity and innovation than change within the boundaries of a paradigm. It is important to reflect upon how creativity and innovation, in accordance with Bateson's learning level III, emerge. Innovation, as I am discussing it here, does not only refer to technological novelty but also, and mainly, to novelty in emerging patterns of behavior and meaning. The agreement-certainty matrix suggested by Stacey (Figure 7) is one way of looking at change in CASSs:

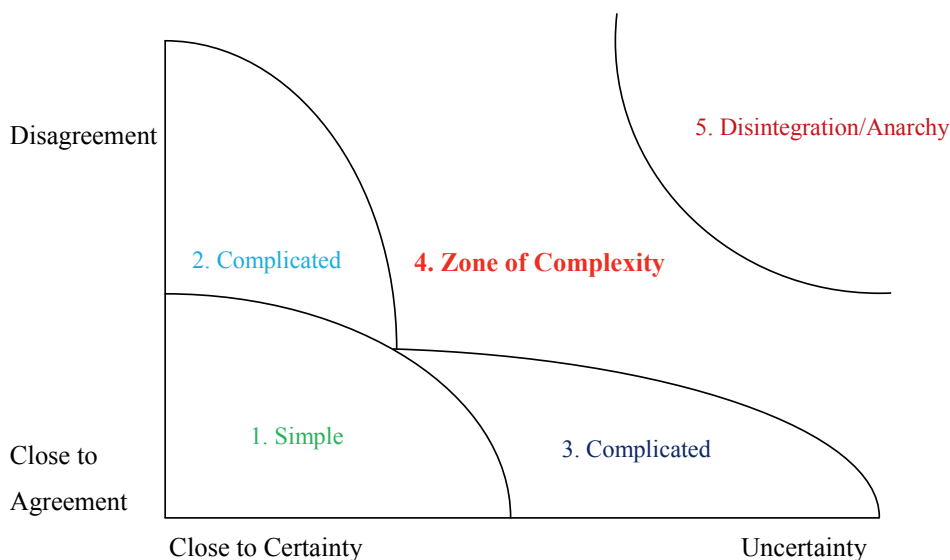


Figure 7: Modification of Stacey's agreement-certainty matrix (1996, p. 47)

For Stacey (1996), the “zone of complexity” – also known as the “edge of chaos” – is marked by a high level of uncertainty and many perspectives, and is the area where innovation takes place and transformational change emerges. Griffin, Shaw, and Stacey (1999, p. 303) claimed that “uncertainty in the form of radical unpredictability is the inevitable companion of novel evolution, that is, the creation of new knowledge”. Zone 1 of the matrix is characterized by technically rational decision making. In zone 2, there is certainty about outcomes but a lack of agreement that turns decision making into a highly political process. The opposite situation is present in zone 3, where decision-making sets the path towards an agreed future in an ideologically driven way with control based on conformity. For Stacey, while in zones 1, 2 and 3 it is possible to determine how people should conduct their work, zone 4 (complexity), where decision making tends to be intuitive and unprogrammed, is where change is likely to occur. For Tosey (2002), the same standpoint can be used for teaching and learning as we already tacitly acknowledge the nature of systems when we recognize that we cannot control learning as it is emergent and constructed (self-organizing). The application of this early understanding of “edge of chaos” by Stacey and associates to the study of departmental leadership would indicate that leaders in academic environments can initiate positive changes by intentionally moving the department into a zone of complexity from which creativity and innovation would emerge.

However, there is an important shift in the Hertfordshire group’s approach to organizational change. Interestingly, Stacey and his colleagues at the Hertfordshire group no longer consider the matrix they produced in the mid-90s to be a valid tool (Griffin, Shaw, & Stacey, 2006). Their argument now is that life is complex all the time and not only on occasions which can be characterized by uncertainty and disagreement. They imply in their more recent writings that the complex responsive processes that change and stability are will always be a part of everyday conversations, meaning that unexpected outcomes can emerge even in situations that cannot be classified as “complex”. Patterns of behavior are continuously created and an uncertain future is perpetually being formed in the process of everyday interactions. In order words, if complexity is everywhere, it does not make sense anymore to talk about zones of complexity from a prescriptive perspective. Their main message here is that complexity is an inherent characteristic of our reality and that our main challenge is to learn to live in a world

that is complex and where we can never be sure about the outcomes of our actions. It means that we have to accept and learn to live with uncertainty.

As I understand it, this represents a movement in the thinking of this group of scholars towards deepening their perspective into second-order complexity and into ontological emergence. I share their point that if we take complexity theory as our way of seeing the world, it is unnecessary and even misleading to talk about zones in or out of complexity. However, it is my argument that the above matrix still has a potential depending on how we use it. As Stacey's matrix has played a very influential role in the study of organizational change in CASSs, there is a need here that I position myself in relation to its validity and application. Instead of using it as a conceptual tool to locate and classify organizational reality, the matrix can be used to map assumptions upon which leadership models are based. Different ways of contextualizing leadership certainly imply different perceptions of what organizational change is and how it might take place. So instead of using Stacey's matrix as the kind of classical 2x2 categorization model that typically appears on management handbooks with prescriptive purposes, it can be used it as a sense-making model (Snowden, 2002b) in way that helps us understanding underlying assumptions of leadership thinking, practice and political discourse. Instead of prescribing a route to be taken, the model is seen here as a tool to increase awareness of different assumptions regarding leadership and decision-making. For instance, from a sense-making perspective, we can reflect upon the assumptions in dominant discourses and the implementation of higher education reform policies in Norway characterized by governance, evaluation and accountability (Møller & Eggen, 2005). As I understand it, the discourse of quality assurance, performance management and benchmarking in the past two decades indicates a view of educational development that emphasizes measurable and pre-defined intended outcomes. This is a discourse that resonates with technically rational decision-making and monitoring form of control. There is an assumed view of planning towards specific paths of action to achieve outcomes and monitor the actual behavior by comparing it against these plans. The emphasis on best practices resonates much more with simple systems than with complex systems (Snowden & Boone, 2007). The goal in such system is to repeat what works to improve efficiency and effectiveness. Bearing that in mind, it is possible to associate this with the "simple" zone in the matrix in which there is an assumption that there is agreement and certainty in relation to cause and effect linkages.

The recognition of the limitations of seeing zones of complexity as categorization models has implications for leadership. The implication for leadership is that this way of conceptualizing change challenges dominant thinking on organizational change based on a notion of central control where the manager implicitly assumes that successful change will take place when people are persuaded to share a common vision. This traditional thinking on leadership implicitly removes differences which are the sources of spontaneous and potentially creative change. Instead, the complex view recognizes paradoxes as part of the organizational reality and the unpredictability of learning and creation of meaning.

6.4 Discussion: complex change and leadership

As stated in the previous section, the metaphor of the “edge of chaos” has an interesting potential. However, part of the literature on complexity theory in organizational studies seems to sometimes present a simplistic equation of the “edge of chaos” with organizational success. Using this perspective is, in my view, the same as following the linear path (“if/then” perspective) that complexity theory criticizes. Assuming a view on unpredictability also means recognizing that not everything that emerges can be regarded as a positive or transformational outcome and that it is important to monitor results and to take corrective action. Leadership is essentially about exploring the unknown.

Complex change is sometimes presented in a prescriptive fashion assuming that the “edge of chaos” can be produced or engineered by managers. Instead of seeing the movement towards the edge of chaos as a result of the system’s own interplay of many different interrelations, it implies that those occupying formal management positions allow this emergence and direct the organizations down this road. It is sometimes claimed that managers can direct the organization to the edge of chaos by balancing centralized practices with more fluid managerial structures. Here the leaders appear to produce the balance of order with disorder that produces the edge of chaos. The problem with this assertion is that it does not seem to take into account the very conceptualization of chaos that complexity science offers, where chaos is seen in terms of very complex information rather than the absence of order or anti-order. The main point of misunderstanding here is to still think in terms of order and disorder as natural opposites where chaos is equated with the latter. This view does not take paradoxes

into account and still approach leadership as a role in a spatial rather than a temporal dimension. In chapter I present a discussion of the concept of “edge of chaos” that is the base of my interpretation of changes in higher education.

The sensation of leaders not being in control might be a frustrating one as we are culturally prepared to see the leader as someone who sets directions and designs changes. This design role is one that merits further attention. When I assume that leaders do not control outcomes and are working with the uncertain, it does not mean that they do not play an important role in organizational change. That would be to ignore their visibility in the organization and the relations of power. However, that is not the same as saying that they control the organization, as outcomes are usually the result of the interaction of many individual designs. As Stacey (2010, p. 214) has expressed this: “while there is no overall program, design, programs, blueprints and plans developed by players in the game in their local interactions which may express desires for some imaginative ‘whole’, the population-wide patterns will emerge in the interplay of all of these designs and plans and no leader can control this interplay”. Those in powerful positions can express their desires and vision but do not have the possibility of deciding the responses of others from which the interplay may produce unpredictable outcomes. It is therefore not possible for leaders to change cultures, move the organization, and set shared values according only to their will.

Nevertheless, the question that arises is: if they are not in control, what then is the importance of leadership? Traditionally, the leader is seen as someone who stands outside or above the system to design change. In the complex perspective, the leader is part of the system and is operating with the unknown like anyone else. If we think specifically about the activity of the formal leader, it seems that that her/his contribution is to work on communication between members in imaginative ways, thus opening for the possibility of new meaning, reflection, further exploration, and highlighting the importance of collaborative enquiry. It is a paradoxical activity of both being at times part of processes of interaction and stepping aside and trying to articulate what is emergent from these. This differs from applying predefined techniques and providing solutions. The designing role here means designing with intent rather than with control. In many aspects, it means highlighting interpretive aspects of the activity of leading rather only analytical.

I have presented here the core of my argument of what a complex adaptive leadership practice is. This is an argument that will be further developed in the two last chapters of part I that assume an interpretive character. In the concluding chapter I will use the findings in this study to discuss the implications of this definition of leadership for the understanding of change in higher education institutions.

6.5 Summary

This chapter presented a view of complex organizational change in higher education. It applied Bateson's learning levels to present a view of transformative change that requires learning level III, which means "seeing things differently" rather than cumulative learning. Sustainability in itself involves a paradigmatic change that involves higher levels of learning. The shift in educational paradigms, from a content-centered to a learning-centered paradigm is thus compatible with emergence and unpredictability which are the main characteristics of complex organizational change. This requires a shift from a view of leadership that presents answers and promotes a shared vision, to one that opens ways for further enquiry and creation of new meaning. These are the core principles of complex adaptive leadership. This shift inherently criticizes policy reform programs that are usually guided by a principle of equilibrium and predictability.

7. Research Methods

To explore changes in departmental leadership in the context of adaptive systems, this study provides a discussion on key concepts within complexity theory. In working with complexity, I employ a complex frame of reference which then has implications for the research methodology. In the previous chapters I discussed the origins of complexity theory in the light of its development in the natural sciences, especially physics and biology. This gives rise to the discussion on the particularity of social sciences in relation to natural sciences and the extent to which frames of reference can be transferred from one to another. In other words, is there a hierarchy among sciences within which some exert a relation of dominance? To what extent can we “translate” concepts from one area of science to another? Early studies in complexity theory followed principles of cybernetics that claimed that there is much to be learned about social organization by applying rules of self-organization on the social world. A large portion of organizational cybernetics and systems theory has been built on this assumption (Miller, 1978) and often resulted in computer modeling studies (McKelvey & Lichtenstein, 2001). Advocates of these schools of thought have argued that if we are to understand social organization, particularly business organizations operating within a market economy, we need to find similarities with the natural and biological systems (Stacey, 1996). Although much of what has been produced in accordance with these assumptions helps us to understand many aspects of organizational life, I assume here that the problems that we are dealing with, not only in relation to organizational change in higher education, but in relation to broader social and global issues, are too complex and therefore demand other ways of investigating social phenomena by exploring our own perceptions of the world. Qualitative methods aiming at understanding how people experience social phenomenon have been advocated by different scholars as a necessary approach within complexity theory (Gilstrap, 2007; Letiche, 2000). This is an extremely promising and enriching approach, especially if we accept the claim maintained by many authors that most of the current global issues that we are facing today are essentially rooted in a crisis of perception (Capra, 1996; Sterling, 2004; Tôrres, 2005).

This chapter is based on Tsoukas and Hatch's (2006) development of second order complexity, indicating that an interpretive mode of thought is perfectly compatible with the logic of complexity theory. For them, one way of understanding human organization is to

explore the complexity of our perceptions and narratives of human organization in complex systems. Their claim supports the phenomenological research strategy employed in the empirical part of this study. Here chaos and complexity serve as metaphors or analogies that highlight the processes of interrelations and interdependence in the social world. This deviates from earlier studies of complexity originating from the Santa Fé Institute that understood complexity in a traditionally reductionist way by looking for common rules that would characterize a range of different systems (Waldrop, 1992).

My choice of method is also related to my assumptions that leadership is not only a role in which cause and effect can be identified and isolated. Leadership is rather an activity which demands a view on processes in which cause and effects are always together (Gilstrap, 2007). The relation of causality here assumed is a transformative one in which the movement towards the future is continuously being created and recreated (Stacey, 2010). This is different from relations of causality assumed to exist in models of equilibrium in movement towards controllable futures. The research strategy adopted here is to explore social phenomena to produce new insights and make room for new ideas. From this perspective, research becomes a reflexive process of making sense of one's assumptions and experience. As Stacey (2010) suggests:

the method is that of taking one's experience seriously with the aim of reflexively exploring the complex responsive processes of human relating. Experience is the experience of local interaction, and this immediately suggests that organizations need to be understood in terms of the experience of their members and others with whom those members interact. (p. 221)

I present in this chapter a further description of my data coding and categorizing process, as well the analysis of findings in interviews with visions for teaching expressed in strategic departments. I also present a brief discussion about triangulation as a way of delving into a complex system. Although strategic documents were analyzed, individual interviews carried out in a dialogical manner will be the predominant data collection method. Although phenomenology has its roots and is usually associated with constructivism, as I understand it is perfectly compatible with critical realism. This is because as discussed by Patten and Remenyi (2004), critical realism in itself does not have commitment to any single form of social research method, but involves a particular attitude towards its purpose and practice. Furthermore, it recognizes the inevitable limitations of observations and requires the

researcher to be aware of her/his own assumptions and limitations of the research. Having that in mind, it is important that I recognize that the data that I gather in my interviews consists of the participants' interpretations of the reality of the academic department where they work. It can be said therefore that rather than presenting a final and complete description of reality of leadership and teaching in such departments, I present here my own interpretation of their interpretation. It is then a double loop of interpretation which is relevant to the critical realist agenda as it assumes that our understanding of the world around us also shapes our world. At this stage, it might be important to recapitulate main assumptions of critical realism according to Byrne (1998): it recognizes the reality of the real, but insists on the reality of social construction and interpretive understanding of human action.

In the last section of this chapter I discuss the approach used in the two conceptual articles (I and IV) and how it shares some assumptions of textual analysis of discourses which is a method of social sciences research (Fairclough, 2003). However, before beginning with the presentation of the research strategy I adopted in this study, I would like to use an example in answering the question relating to the transference of frames of reference from one area of science to another with which I started this chapter. While conducting this project I came across an article by chance on universal semantic communication in Computer Science that discussed the context of modern computational structures characterized by an increase in the diversity of computers which is making inter-computer communication an increasingly challenging activity. Nowadays, the interaction between two computers using different computer languages usually demands software that enables the two to "talk" to each other. This is in itself a burdensome and risky task. The authors define this challenge in the following way:

The current model for maintaining connectivity is based (implicitly) on trusted "third parties" who advise us on when to update our languages. This process, however, leads to compromises in terms of *efficiency* as computers spend more of their time downloading languages and less on real computation or communication; *reliability*, since the protocols often lead to inadvertent errors; and *security*, because many viruses and other corrupting elements are introduced at this stage. (...) Perhaps we should not set computers up with common languages, but rather exploit the universality in our favor, by letting them evolving to a common language (Juba & Sudan, 2008, p. 129)

The way the authors framed the main challenge in their research field actually reminded me very much of some of the most common discussions in the area of education dealing with issues related to diversity, culture, curriculum, policy, and centralization versus decentralization. It also reminded me of some issues in organizational studies, such as interactions, relations of interdependence, and emergence which are also the main foci of complexity theory. I am not in this suggesting that “solutions” can be automatically transferred from one area to another. However, this passage illustrates what Byrne (1998) means when he claims that although complexity theory has its roots in physics and biology, it is in no way a context where social sciences have reason to envy the natural sciences. As Byrne (1998) contends:

the social sciences have a good deal to learn from these fields. But, and it is a big but, once the social sciences get going, other fields of inquiry will have a lot to learn from them. Indeed this project is already under way (...) There is no hierarchy here, no more or less fundamental field of science and/or disciplinary perspective. We are in this together on equal terms (p. 17).

My argument here is that as the dilemmas faced by higher education institutions involve a crisis of perception, a research strategy that enables one to grasp perceptions of challenges related to leadership and teaching is needed. The strategy adopted here is to follow an interpretive approach.

7.1 Complexity as matter of interpretation

Tsoukas and Hatch (2006, p. 248) claim that one of the limitations of the dominant school of thought in organizational studies is that most often, organizations are regarded as features of the real world and less as the result of our own thinking about the world. If we accept the second proposition, then the view of organizations as complex systems is related not only to observable characteristics of phenomena that we are trying to understand but also the result of our own complex way of thinking. Complexity thus becomes the way we see the world. It is this second dimension that the authors call second-order complexity. The shift from first to second-order complexity impacts epistemological and methodological issues as it highlights limitations of the logico-scientific mode of thought in complexity theory. These two authors maintain that the interpretative dimension of complexity arises when we move from the focus

on the system itself (first-order complexity) to include our own role as observers of the system (second-order complexity). Therefore they argue that the main characteristics of CAS, such as non-linearity, emergence, and sensibility to initial conditions can only be fully understood if we take second-order complexity into account by positioning ourselves as interpreters. So what do we mean when we incorporate central concepts of complexity theory into our practice as researchers? The answer is that these concepts present metaphors of how we see the world rather than only being characteristics that we might assume to be provided by the system itself. It means that complexity becomes part not only of our ontology but also of our epistemology. Thus second-order complexity is related to the subjectivity of the researcher. As discussed in the previous section, it is also important to recognize the subjectivity of the informants. This double loop of interpretation is perfectly compatible with critical realism and its application to the study of social phenomena as it also recognizes that the researcher is part of the social world that is being researched and her/his interpretation will also contribute to shape the world.

Tsoukas and Hatch (2006, p. 59) present elements of the interpretive mode in relation to perceptions of limitations of the logico-scientific mode: contextuality and reflexivity (as opposed to imperfect generalizations), purposes and motives (as opposed to tacit justification) and temporal sensitivity (as opposed to consistency and non-contradiction). These are also main characteristics of the phenomenological approach (Moustakas, 1994) that I applied in the empirical part of this study (articles II and III) when I investigated leadership in two academic departments with different histories and facing different challenges. The necessity to focus on qualities is also highlighted by Capra (1996) when he says:

I shall argue that the key to a comprehensive theory of living systems lies in the synthesis of two very different approaches, the study of substance (or structure) and the study of form (or pattern). In the study of structure we measure and weigh things. Patterns, however, cannot be measured or weighed: they have to be mapped. To understand a pattern, we must map a configuration of relationships. In other words, structures involves quantities, while patterns involve qualities. (p. 81)

The issue of temporality is crucial here. As I understand, the idea of processes as movements over time characterized as bifurcation points can be readily identified in this assertion by Capra. Therefore, rather than looking for a statistical generalization, this study focused on the

complexity and uniqueness of each case. Bruner's (1986) comparison of the logic-scientific mode and the narrative mode illustrates the differences between these:

Table 7

Two modes of thoughts presented by Bruner

	Logic-scientific mode	Narrative mode
Objective	Truth	Verisimilitude
Central Problem	To know truth	To endow experience with meaning
Strategy	Empirical discovery guided by reasoned hypothesis	Universal understanding grounded in personal experience
Method	Sound argument Tight analysis Reason Aristotelian logic Proof	Good story Inspiring account Association Aesthetics Intuition
Key Characteristics	Top-down Theory driven Categorical General Abstract De-contextualized Ahistorical Non-contradictory Consistent	Bottom-up Meaning centered Experiential Particular Concrete Context sensitive Historical Contradictory Paradoxical, ironic

Source: Tsoukas and Hatch (2006, p. 251)

Key characteristics of the narrative mode such as sensitivity to context, historicity and the acceptance of paradox play important aspects of organizational studies guided by a complex frame of reference. These are characteristics of phenomenological studies that are discussed in

the next section. It is important to notice that the “abstract” belongs to the domain of the logic-scientific mode. In this study, I use a system perspective that is an abstract concept. However, the abstract concept of systems that I use here is different from a logic-scientific logic as it does not imply search for predictability and generalization. The abstract of system here is much more the expression of a particular way of seeing the world that brings up conceptual tools to analyze emergent data-driven (concrete) categories than a de-contextualized search for universal laws.

7.2 Phenomenological studies

One of the reasons for choosing a phenomenological research strategy in two of the papers (articles II and III) that constitute this thesis is that this research method provides much room in which to find factors and characteristics of the studied phenomena that were previously unknown and therefore unexpected. This research strategy is very compatible with my theoretical framework that emphasizes multicausality and unpredicatability. In phenomenological studies, the researcher aims to identify the essence of human experiences as described by participants in the study (Creswell, 2003; Moustakas, 1994; Postholm, 2010). Here, the researcher restricts his own suppositions, focuses on a specific topic in a naïve manner, suggests research questions that will guide the study and analyze findings that will stimulate further reflection (Moustakas, 1994). The analysis of findings involves a reflective process in which the researcher presents a detailed description of his or her experience. In phenomenological studies, perceptions are considered to be the main evidence to be analyzed and interpreted. This is a method that has been used by researchers investigating leadership assuming that “leaders’ perceptions of organizational dynamics become central to their construction of meaning, and every perception takes on new and equal meanings in the narrative description of leaders” (Gilstrap, 2007, p. 97).

I assumed here that in order to understand the complexities of the experiences of individuals in CASs, there is a need to search for meanings that emerge from their own descriptions of their organizational reality. The need for research methods that incorporate an interest on perceptions and lived experience in the research agenda of complexity theory has been advocated as a move from the intrinsically rationalist of early cybernetics as described by

Letiche (2000, p. 545): “phenomenal complexity theory seeks to include the experiencing subject in its epistemology and thereby to neither be one-sidedly rationalist or subjectivist”.

Table 8 shows how characteristics of phenomenological research resonate with temporality and second-order complexity:

Table 8

Phenomenology addressing complexity issues

Temporality, focus on processes	Narrative approach to complexity theory uniquely emphasizes the temporal dimension of experience and simultaneously explores the issues of consciousness that raised by the juxtaposition of narrative and time (Tsoukas & Hatch, 2006, p. 268)
Second-order complexity	The data of experience, my own thinking, intuiting, reflecting and judging are regarded as the primary evidences of scientific investigation (Moustakas, 1994, p. 59)

To summarize, phenomenological studies aim at understanding the essence and underlying structure of the phenomenon. This means interpreting how people interpret their experiences, construct their world, and create meaning (Merriam, 2002). In these studies, validity is not expressed as the capacity to make generalizations but as a general principle by demonstrating that the data material was collected in a thorough and trustful way, the analysis was rigorous as it assessed alternative competing meanings, and the steps taken to develop knowledge statements or findings were demonstrated (Worthen, 2002). The data collection procedure and analysis of my own data comprise the focus of the next section.

7.3 Data gathering and analysis in empirical articles

The empirical component of this study consisted of conducting fieldwork in two academic departments in the same research area and with about the same number of people holding tenure positions (45-50 people). Qualitative research on personal experiences and processes in

natural settings always involves reflection on the ethical dimension of the study. Often a relation of trust between the researcher and the participant/informant provides access to information and personal experiences that would not become available if such a relation did not exist (Postholm, 2010). In my study, data that emerged from the interviews was analyzed in a confidential manner and reported in a way that protected the anonymity of the individuals and the academic departments that agreed to participate. Therefore, the universities in which they are located and their research area have not been identified in this study to protect the anonymity of the interviewees. This is in accordance with the guidelines for ethics in social sciences research presented by the National Committee for Medical and Health Research Ethics of Norway (NESH, 2006). Prior to interviews, participants had access to a description of this project and signed a consent form (see attachment I). Individual interviews carried out in a dialogical manner were the predominant data collection method. After having been granted permission by leaders in each department, I contacted by email every professor that had a permanent position and asked about the possibility of interviewing them. As a result, I interviewed twelve professors who agreed to participate in each department among which were the department head and the deputy head for education. They represented about 25% of the academic staff members of these departments. The fact that I conducted the same number of interviews in the two departments was not planned and was therefore a coincidence.

The questions (see attachment II) in the semi-structured interviews (Knight, 2002) that lasted from twenty minutes to one hour focused on how teaching and learning were perceived, how leadership was experienced, and if any relation could be identified between these. As the interviews aimed for the interlocutors' stories and perspectives, they were open to ambiguity and factors that had not been anticipated by the researcher. The interview procedure started with a brief description of my research project and then I moved on to asking the informant issue-oriented open questions with the purpose of obtaining descriptions of episodes, connections, and explanations. The interviews were usually completed by asking the informants if they would like to add anything to the topics that had already been covered. This turned out to be the stage where many interesting stories and descriptions emerged. Sometimes during my introductory description of the project the informants would interrupt me and make observations such as "relation between leadership and teaching? I ought to get convinced of that" (Interview 6 – Norwegian department). These spontaneous utterances would then be the beginning of the conversations during which the issue-oriented questions that I had previously formulated guided my role.

In both departments interviews with academic staff who had formal leadership positions were important, not only as a means of learning about their personal experience but also for collecting information on internal regulations, financial patterns, and access to strategic documents. I interviewed newly-appointed staff and professors who had been working at these two departments for over thirty years. Some had also previously been graduate students at the departments in this study. This also provided me with an interesting historical and contextual perspective on organizational change. However, the gender aspect might have been a limitation as female professors who constituted about 10% of the academic staff at each department did not agree to participate. At this stage, I have no explanation as to why the female staff did not agree to participate other than speculating on whether gender plays an important role in how leadership is perceived in academic departments. That in itself seems to be an interesting question for further studies. The analysis of strategic documents provided relevant information on how decision-making takes place in each department and made it possible to compare formal procedures with more informal perceptions of change. Generally speaking, the data analysis was inductive as new themes emerged and were changed or refined as the data was scrutinized.

The interviews were recorded on mp3 files. Perceptions and personal experiences that were repeatedly evident provided categories of codes that were revised and analyzed with the help of a software package that supports the structuring of findings and the analysis of a qualitative study. I conducted a coding procedure that selected parts of interviews that illustrated main ideas and concepts. In phenomenological studies, the analysis involves a categorization of data into elements that make the data manageable (Moustakas, 1994; Postholm, 2010). The analysis process followed the steps described by Moustakas. First, information that is perceived by the researcher as relevant in relation to the problem statement is gathered. In an initial stage, all information is regarded as equally important which is a step labeled by Moustakas as horizontalization. The next step consists of putting aside information which may not be directly relevant to the studied problem. Overlapping accounts or repeated information were gathered together forming categories. The third step means gathering relevant narratives along common categories making it possible to present these in a textual and structural description of the phenomenon, presenting how it was experienced and perceived by the participants.

The data categorization procedure used here was mostly data-driven, which means that rather than pre-establishing strict categories in which to fit the data, categories emerged from the data itself in more or less unpredicted ways (Gibbs, 2002). On the other hand, my previous assumptions and knowledge of main theoretical concepts regarding leadership in higher education and teaching influenced the construction of the interview guide and certainly influenced the categorization and analysis of the data. However, although my personal assumptions influenced the beginning of the process of categorization, they were also challenged by the data-driven method of analysis itself. This expresses the subjective nature of the chosen method through which my own assumptions were constantly confronted by my own findings. For example, I initially raised questions on lecturers' individual motivation to improve the teaching. This question was influenced by my own understanding of the literature on leadership in academic departments with a focus on system improvement. However, as the research process developed and unfolded, a context where a political and individual concern with system efficiency in the Norwegian department promoted only piecemeal change (if change at all) it became clear to me that it was important to distinguish between different levels of change. This reflection is further developed in the fourth article. In qualitative studies the subjectivity of the researcher is always present at the start of the research process. But as the research developed, I have welcomed deviations between my own subjective assumptions and my findings as an emergent outcome of the reflection process of delving into a complex system. I provide in the next section a further description of the coding and categorization process in the empirical part of this study.

7.3.1 Further description of coding and categorization process

Analyzing and reporting findings in qualitative studies are always challenging processes. Reporting research findings in a way that demonstrates that the data presented is really representative of what was gathered is especially challenging since in qualitative research, the researcher is also the research tool making choices based on his/her own interpretation and reflection. In this study, "making sense" of strategic documents and interpreting over two hundred pages of transcribed interviews was indeed a challenging task. From a critical realist perspective, the challenge here consists in making the data manageable and presenting in a way that is representative of the data itself and of my own interpretation of it.

Due to the limited space and for the sake of succinctness and clarity, I could not present in the articles and in this thesis all the accounts of perceptions of leadership and teaching. Therefore, I had to make difficult decisions in choosing quotations that illustrated main themes in my analysis. My goal was to present quotations that best illustrated the underlying principle of each topic. Therefore the selected quotations are those that are the most representative of many for a specific category according to my interpretation. In this selection process, accounts from informants became more highlighted than others as some individuals express themselves in a more reflective and articulated way. Hence, the choice of quotations in part I and in articles was done in a way that, according to my interpretation illustrates the main themes that emerged from interviews. I have here to recognize the subjective nature of this process in the light of the inherent interpretive nature of qualitative research. It means recognizing that other individuals might have identified, analyzed (code and categorized) and interpreted this same data in different ways. However, it does not mean that I did not check and sometimes “corrected” my own subjectivity along the process. I describe this process in the next paragraphs.

I can say that my analysis of perceptions of leadership and teaching started in an unstructured way when right after each interview, I took a few notes of what had called my attention in the accounts presented by each participant. However, the reflection process related to coding initiated while I was transcribing the interview. This was an important activity of familiarization with the data and sensing themes emerging from it. After this period of familiarization, I proceeded to the data coding and categorization process in a more structured way which, as I stated in the previous section, was to a large extent data-driven. It means that I identified recurring patterns (reported as categories) that cut through the data. I divided the information that I was gathering into two main sets of data: perceptions of leadership and perceptions of teaching. As in my interviews I gave a lot of space for participants to spontaneously express themselves, a variety of themes and “labels” used to describe their experiences of organizational life emerged. The categories were refined several times and in some cases one or more categories that presented similar arguments were merged into one. However, I still had a large number of categories. Therefore I had to make choices in relation to what categories I would focus on my analysis. The criteria used to decide the categories discussed in the articles was recurrence meaning that I opted to focus on categories in which gathered accounts and perceptions of at least nine out of twelve participants in each department.

Interestingly, when I reflect upon my data coding categorization and procedure, I realize that in a rather intuitively way I followed the same three steps suggested by Moustakas (1994) that I described in the previous section. One way of describing how I conducted this activity is to present examples.

The first example of coding process that I describe here is related to perceptions of leadership in the Norwegian department. When I was conducting and transcribing interviews in the Norwegian department, I started to observe that participants described changes in leadership in different ways. Most perceptions assumed the shape of sentences framed as “leadership here *was* like this, but now it *is* like that”. Personal accounts of everyday aspects of organizational life expressed either a process of movement over time towards a different leadership model and/or how participants perceived leaderships. My task consisted then in grasping those perceptions and structuring them in categories. In each category, I gathered both labels used by participants to describe leadership and accounts of episodes that illustrated perceptions of changes. In this processes of movement over time, presented usually presented their perceptions of everyday organizational aspects of the department and accounts of the formulation of the strategic plan and the restructuration of the department. The three categories of perceptions of leadership that I discuss on article III (leadership *more* centralized, decision-making *less* consensual/democratic, and *more* bureaucratic) illustrate a movement over time and a comparison of the past with the present. In each of these categories I gathered accounts of faculty and individuals in formal leadership positions of how they perceived planning, management and everyday issues like conflicts and resistance to change. The use of a software program that supports the analysis of qualitative data proved to be a helpful tool as it enables the researcher to easily locate previously identified quotations and to change and merge categories in a fast and structured way. In some occasions, the more structured analysis of data challenged some of my previous assumptions.

The following figure aims at illustrating how a category emerged from the data. The objective of this figure is not to present a full description of the data coding and categorization procedure of this study. The goal here is rather to illustrate an example of how one main category emerged from the data itself and to locate the category “Decision-making less consensual” in the tree map of categories in the Norwegian department. The blue figures are some of the fragments of the organizational reality coded in this category:

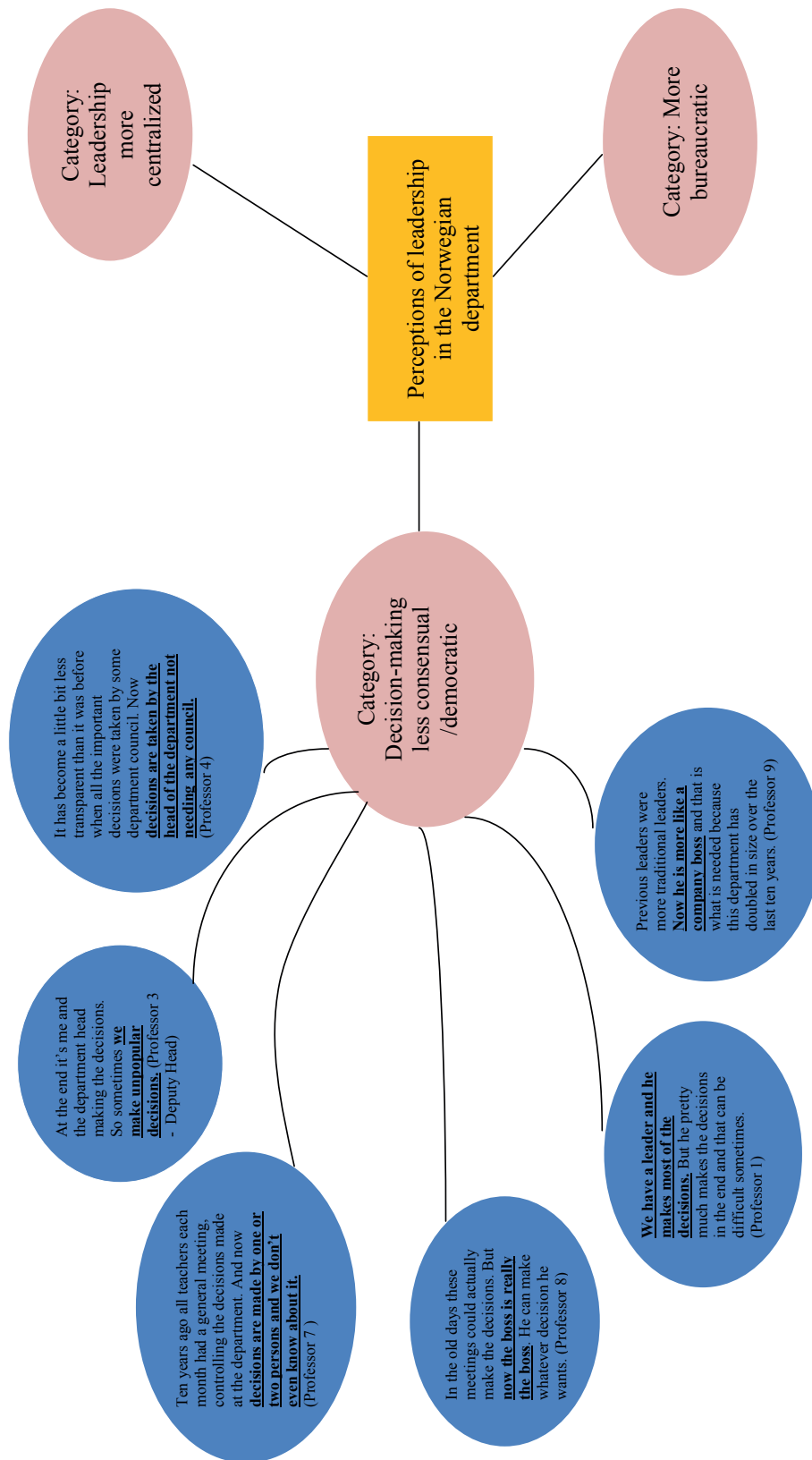


Figure 8: Illustrating the emergence of a category of perceptions of leadership

Another example of my data coding and categorization procedure is the analysis of the data regarding the reformulation of the study program in the American department. This was an important process of movement over time that was spontaneously mentioned by virtually all participants and that represented fragments of perceptions of organizational reality that had implications for both leadership and teaching in the department. My task here was to understand what such fragments presented by participants meant for the study that I was conducting. This process was indeed the main episode to which participants referred when asked about their perceptions of the impact of leadership on their teaching. Although I did not find any evidence of the process of restructuration of the study program being associated to changes in approaches to teaching, it can be considered as a bifurcation point in the department in which leaders articulated emerging topics in the context of continuation of a collegial model of leadership. It presented characteristics of the activity of leading such as managing and articulating emerging topics. The analysis of such accounts took place in an interpretive manner and fragments presented by participants were coded and placed in different categories in the article II such as "emergent leadership", "flat, collegial organization" (categories describing leadership) and "internal discussions about teaching are content-driven" (categories describing teaching).

In the next section, I discuss the aspect of triangulation in the context of the analysis of fragments presented by participants and as a process of reflection and interpretation that is in itself a complex system.

7.3.2 Triangulation as delving into a complex system

The data analysis was conducted as a triangulation (Creswell, 2003) of the examined evidence from different data sources so that I could build a description of the phenomenon. The triangulation of multiple sources of evidence is seen as a means of ensuring internal validity and reliability in interpretive research (Merriam, 2002). Internal validity relates to the extent to which findings correspond to reality in the context of the studied setting. As in qualitative research it is assumed that reality is always multifaceted; as interpretations or understandings of the phenomenon (leadership, in this study) differ from each other, the goal is always to investigate the complexity of human behavior and present an interpretation of reality.

The recognition of paradoxes in organizational life in itself demands the analysis of different sources of evidences providing different dimensions of the studie phenomenon. In this sense documents, websites, and strategies can be seen as relevant artifacts against which meanings and interpretations expressed in interviews can be compared and analyzed. As highlighted in this chapter, interviews conducted in a dialogical manner were the primary source of evidence in this study, but the analysis of strategic documents was also an important source of evidence.

As Merriam (2002) describes, triangulation in interpretive research might assume different shapes. In the empirical part of this study, the triangulation method assumed the shape of gathering two different sources of empirical evidence: interviews and the analysis of strategic documents. Those two kinds of evidences were checked against each other. Although interviews were undoubtedly the main source of evidences, main findings emerging from this were checked against visions for education described in strategic plans. The analysis of strategic documents in both departments reinforced some characteristics of organizational culture that emerged from interviews and that had also been part of my initial assumptions: research seeing as more important than teaching and most discussions regarding changes in educational practices between related to “what” rather than “how” to teach. In this sense, I can say that I did not find any contradiction between those plans expressed in strategic documents and perceptions of teaching described by participants.

The critical realist perspective reinforces the need to compare different types of evidences as the analysis of single sources will always present a limited description of reality. Therefore, by comparing interviews and strategic documents, my intention was to enrich my description of how leadership and teaching were perceived. However, it became clear to me that since I was delving into a complex reality, I would not be able to produce a full, elegant and accurate description of academic departments as my final product. Rather than finding this discouraging, I realized that the fragments of organizational reality that I was gathering were providing me the opportunity to develop another level of triangulation which can in itself be considered a complex system: a triangulation between the empirical evidence (interviews and strategic plans), the literature about organizational change (as described in chapter four) and my own assumptions. As critical realism also assumes that our thoughts are part of the reality that we are trying to understand, it seems clear to me that these can also be the subject of our triangulation.

The main reflections in this study were intuitively permeated by a process where those three elements were checked against each other producing my interpretation. If this study focuses on perceptions and the critical realist perspective assumes that reality is affected by our own perceptions of it, the triangulation of such elements provides the basis from which the main reflections in this study emerge in a rather un-linear fashion. Evidence and theory provide the cornerstones in these study, but such elements alone do not result in reflection without the intervention of an individual who establishes and reflects upon a complex interaction among these – in this case: me.

The following figure illustrates the triangulation process:

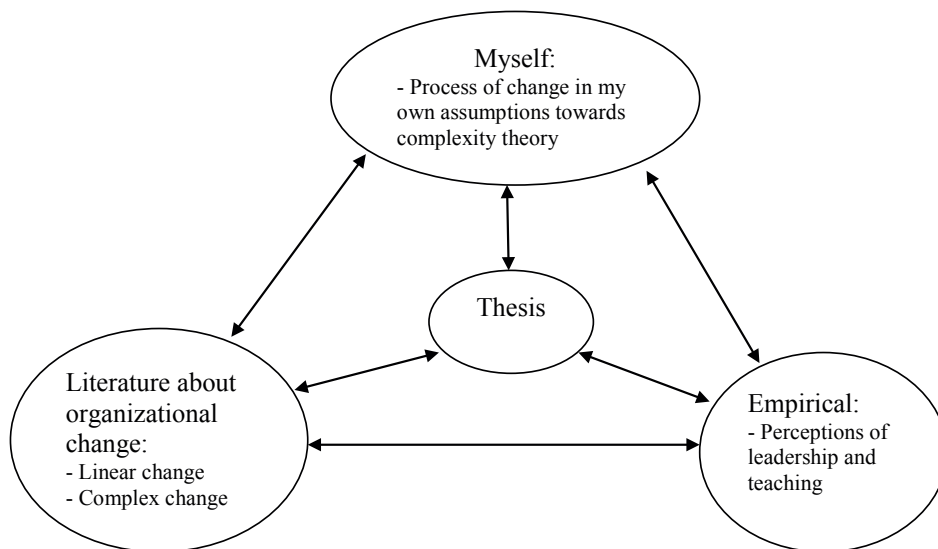


Figure 9: triangulating personal assumptions, theory and evidence

This study discusses processes of change. The interpretation of findings in the two academic departments shows that while in the American department change was hardly mentioned, change was a buzzword in the Norwegian department. However, it seems that the scope of this change is relatively undefined. Change, both in informal discussions and in official

documents, appears to be quite ambiguous, presenting both ruptures and continuities. Although some argued for the necessity of change in this department, it was very difficult to identify a common vision of what exactly this change meant in relation to teaching and learning and to what extent changes had already taken place. Before presenting the empirical findings in both departments in the next chapter, I will discuss the analysis and assumptions about conceptual constructs in the first and fourth articles.

7.4. Analysis in theoretical articles

As described in the previous section phenomenology was the research strategy used in the two empirical articles that are part of this study. The two other articles have a more conceptual character as the aim is to refine conceptual constructs by discussing the contribution and limitations of theories that have been used to address leadership and organizational change in research-intensive environments. The main objective of these articles is to draw upon the research literature on these topics, critically assessing existing theory, advancing theoretical understanding and presenting a definition – or redefinition – of key concepts. It is also helpful to map a field of study to reveal gaps in knowledge and point out new directions. I cannot claim to have applied a method of discourse analysis (Fairclough, 2003; Neumann, 2010) in these articles, as this method often involves a more detailed analysis of written or spoken language and of semiotic events than the conceptual discussion that these articles present. However, my approach shares at least one common assumption with discourse analysis if we think of it not only as techniques of research but, in a broader sense, as a way of approaching a certain problem. This is the assumption that each discourse is a social construction that can only be analyzed in its social-historical context and that it reflects the worldview of its authors. As Fairclough (2003) suggests, I accept here to a certain extent the claim that the social world is socially constructed but, from a realist perspective I accept that once constructed, the discourses become realities which affect our understanding of the world.

One way of looking at discourses is to analyze them in terms of ideological effects, i.e. effects of discourses on sustaining or changing ideologies. These ideologies reflect characteristics of the world that can either sustain or change social relations of power. Fairclough (2003) himself uses the example of the widely shared claim that public organizations like universities

need to be administered in a more “business-like” way if they are to be more “competitive” as a phenomenon that can only be understood as ideological if it is analyzed in terms of its casual effect in sustaining or changing relations of power. If we consider this claim to be ideological, we do not necessarily say that it is right or wrong. But we may see that a more business-like model is imposed by the context of a hegemonic worldview rather than being an inevitable law of nature as described by such dominant discourses. Instead, this ideology is the product of a particular hegemonic order that can be changed. In my view this assertion has much in common with the realist statement about the independence of the world from thought, and as quoted from Godfrey-Smith (2003): “we all inhabit a common reality, which has a structure that exists independently of what people think and say about it, except insofar as reality is comprised of, or is causally affected by, thoughts, theories, and other symbols” (p. 174).

The main interpretive conclusions of this study developed on the two last chapters of part I will trace connections between the discussions on findings in the two empirical articles and the reflections that emerged from the two theoretical ones. A discussion about the concept of “edge of chaos” is the starting point of my interpretation.

7.5 Summary

This chapter situated the methodology of this study both in relation to classical concerns in social research and in relation to my main theoretical assumptions. Although initial studies within complexity theory followed a cybernetic perspective using a quantitative approach, it was found here that qualitative research is not only compatible but also contributes to a large degree to addressing emergence, multicausality, unpredictability, historicity, and contextuality in organizational life. The shift from first-order to second-order complexity highlights complexity as part of the epistemological aspect of the research and therefore choice of method. The phenomenological method used in this study employs an interpretive approach where complexity theory demands and emphasizes the reflexive role of the researcher assuming a second-order complexity. In the empirical articles semi-structured interviews that allow for spontaneity and unpredictability comprised the main data-collection method, while the analysis was essentially data-driven. In the empirical articles, fragments of organizational reality presented by participants are analyzed and discussed in the light of main concepts of

complexity theory. The triangulation between the researcher's own assumptions, the theory about leadership and organizational culture change and empirical findings can be considered in itself a complex system from which reflections emerged. In the two theoretical articles, the effort to refine concepts constructs shared some assumptions with the method of discourse analysis.

8. Presentation and Discussion of the Findings in Articles

The aim of this chapter is to summarize the findings and reflections that emerged in the four articles by establishing a connection between them. In the four first sections, I introduce each of the four articles and further discuss some of the reflections and empirical findings. I will begin by reviewing the discussion on the concept of distributed leadership that is presented in article I. This concept was suggested in response to the perception that new challenges faced by higher education institutions require new ways of thinking about university management, and that leadership based on strict hierarchies is not suited to global complexity and change. However, although presenting some challenging ideas in relation to traditional leadership thinking, the concept of distributed leadership showed limitations in explaining the dynamics of organizational change. I have dedicated one section to a view on power relations based on complex responsive process that is different from distributed leadership. Article I is theoretical in its approach, but complexity theory is not yet touched upon. In a subsequent period of time, I deepened my understanding of systems thinking and it became clear to me that complexity theory provided a more powerful approach to organizational change by focusing on questions that the concept of the distributed leader could not answer. Hence, complexity theory provides the conceptual framework used to analyze the findings in articles II and III.

Articles II and III have an empirical character. In article I, I discuss the empirical findings from fieldwork conducted in the fall of 2008 in one academic department located in a top research-intensive university in the United States. Article III raises the same questions in a different environment as I conducted a fieldwork in one academic department in the same academic field in Norway. As explained in my problem statement, the objective of articles II and III was not to identify successful practices to be generalized to other contexts. As my theoretical framework indicates, processes of change are always marked by uncertainty, and leadership is itself a phenomenon largely influenced by initial conditions and contexts. This fact makes the search for generalizable practices and leadership characteristics not only impossible, but also irrelevant to understand change. However, the analysis of the empirical findings in the light of main concepts of complexity theory motivates reflection and allows for insights into change in higher education. The two departments have in common that they are both in the same academic field. Nevertheless, contextual differences have different

challenges and perceptions of the dynamics of interrelations from which perceptions of leadership and configurations emerge. While the American department has consolidated a top position in international rankings and the informants exuded a self-image of success, the Norwegian department is struggling with challenges resulting from the expansion of the access to higher education and a shift from an autonomous collectivity to a stakeholder organization. While in the American department the informants described few changes in terms of leadership, the informants in the Norwegian department describe the rise of a more bureaucratic, centralized form of leadership that was more focused on external demands. However, in both departments there was little evidence of more transformative changes in terms of approaches to teaching and learning. It is important to clarify that here the analysis of empirical cases does not assume the shape of a comparative study. In order to compare the two departments, I would have to assume a holistic view with a full description of what the two academic departments are in terms of history, organizational culture and relation to overall systems. This is not what I present here. My strategy consisted in analyzing the fragments in the shape of perceptions of organizational reality in each department and interpreting them in terms of changes in leadership and approaches to teaching as two different cases without approaching them in a comparative manner.

The fourth article has a conceptual character focusing on the relation between departmental leadership, learning and change in higher education. In article IV, my point of departure is a critical review of the literature on departmental leadership in higher education. I then use this to suggest that we need to raise questions that are fundamentally different from those that have been targeted up to this point in time. This represents a shift in focus towards understanding leadership, sustainability, and learning in a context of complex change.

While in the previous chapter I discussed my choice of research methods in relation to my theoretical framework, the present chapter presents a brief presentation of the problem statement and main findings and reflections of each article. More detailed information about data and my research process can be found in the articles in part II of this paper. The goal of the present chapter is to highlight the main findings and central arguments of each article to structure the discussion addressing the overriding problem statement of this research project. Furthermore, I present a discussion about the “edge of chaos” which represents the conceptual bridge to the last chapters of part I which have an interpretive character.

8.1 Distributed leadership

Article I reviews traditional and emerging approaches to leadership and narrows this discussion down to the specific case of leadership in higher education institutions. This emerging view assumes that leadership is a context-related activity distributed between people, and that it is unrealistic and unsustainable to hope that organizational change can be directed by outstanding visionary leaders (Timperley, 2005). This concept moves the analytical focus from the search for effective qualities in individual leaders to what constitutes leadership practices and processes. Leadership is thus seen as an activity and as a property of social systems (Simkins, 2005). It is possible to identify some common characteristics with a perspective towards of leadership inspired by complexity theory as described by Bennett, Wise, Woods, and Harvey (2003). This is an approach to leadership as an emerging property of a group or network of interacting individuals. It is expected that the concept of distributed leadership will represent a new way of seeing leadership practice which is more suited to contexts of complex change and interdependence than traditional leadership models. Distributed leadership presents an organizational perspective characterized by an empowering and democratizing discourse that emphasizes the importance of participation. It is sometimes presented as a defensive discourse in which traditional aspects of the collegial model of university leadership is reinforced. It is also sometimes promoted as an adaptive responsive strategy focusing on perceptions of external challenges in which marked accountability is strengthened as described by Bolden et al. (2003).

All in all, it is presented as a persuasive argumentation that balances both principles of collegiality and management and thus internal of educational institutions and external values. However, the review of the literature showed a paradoxical situation in which distributed leadership has been characterized as a general organizational quality which instrumentally fulfills the need for efficiency and entrepreneurialism, but without exploring changes in institutional values and power relations. Although the concept highlights dimensions of leadership beyond traditional lines of authority, it still was found to be insufficient for addressing several aspects of organizational change, such as relations of power and uncertainty. Furthermore, in this chapter I discuss why complexity theory is, in my view, a more powerful framework for understanding organizational change.

8.1.1 From distributed to complex leadership

The concept of distributed leadership shifts from traditional leadership thinking, as it sees leadership as distributed throughout the organization rather than confined within the characteristics and capabilities of the people occupying formal leadership positions. This view of leadership, which had an impact on the literature on school leadership (Gronn, 2002), mostly in English-speaking countries, has also been advocated in the study of higher education institutions. The concept has much in common with the systems perspective in organizations (Bolden, Petrov, & Gosling, 2007). However, the literature review on distributed leadership conducted in the first article showed the limitations of this concept. The main limitations that I identified are the downplaying of power relations and accountability in organizations, and the lack of any clear connection with or definition of transformative change. The perceptions of these limitations were the main reason why I moved from distributed leadership to complex adaptive leadership as the main theoretical framework of this project.

Although the concept has a rhetorical potential by incorporating both elements of collegiality and entrepreneurialism, its descriptive potential is very limited. As it highlights agency beyond formal hierarchical structures and a broad area in which leadership processes take place, the concept challenges classical leadership theory as discussed in chapters 4 and 5. However, distributed leadership does not offer a perspective towards change. Gronn (2002) identifies distributed leadership as “concertive” action which is a web of patterns and interactions characterized by “conjoint agency” in which individuals synchronize their action in a process of interdependence. This is done in three ways: spontaneous collaboration, intuitive working relations, and institutionalized processes. He also identifies interdependence and coordination as main properties of distributed leadership. This view of leadership might have an interesting potential for practice as it widens up the perspective of leadership to nonlinearity and emergence. However, it seems that it still represents a highly harmonic view that does not correspond to an environment of non-equilibrium from which power relations emerge. The idea of leadership being related to a complex web of actions is a common characteristic of both complexity theory and distributed leadership. On the other hand,

complexity theory presents tools that make it possible to reflect on the power struggles, emergence, and thereby resistance to change.

However, as noted by Bolden et al. (2007), the rhetorical potential of distributed leadership might have the danger of being used to mask power differentials by offering an idea of consultation and participation while at the same time concealing processes in which decisions are made in an increasingly centralized manner in higher education. After having conducted fieldwork investigating the impact of the concept of distributed leadership in higher education institutions in the United Kingdom, Bolden et al. (2007) concluded that this is a highly political concept: “it would appear, therefore that distributed leadership is ultimately a political concept. Interpretations are invariably shaped by the stance of the perceiver – born of an ideological commitment to the collective or an instrumental commitment to performance and power” (p. 65).

In my view, the important limitation here is that emergence is seen as a phenomenon deliberately added by individuals throughout the creation of right conditions and interrelations. This appears to me to be an oversimplification and a misunderstanding of what emergence is. As I understand it from the literature (Byrne, 1998; Johnson, 2002; Johannessen, 2009; Osberg & Biesta, 2007) emergence is not a force that someone can plan or engineer, but a pattern that arises in unpredictable ways across a population beyond prior design. In other words, it is an intrinsic property of systems rather than something intentionally planned. Furthermore, questions on accountability, responsibility for system failure (and its relations to overriding environmental failures), and ethics seem to be largely unanswered in the literature on departmental leadership. These questions are discussed in the fourth article through the use of conceptual tools provided by complexity theory.

8.1.2 A view on power relations

As I point out the aspect of power relations as a limitation of the normative potential of the concept of distributed leadership, it is fair that the reader expects that I present my position regarding this issue based on the theoretical framework adopted here. As Møller and Eggen (2005) argue, distributed leadership has been presented as a reaction to a dominant discourse in school reform in which:

in policy documents we read that strong and visible leadership is needed to change schools to learning organizations, and behind this is the assumption that leadership is the monopoly of individual role leaders or a few factors that are strategically positioned in the organization (p. 333).

For Møller and Eggen (2005), although the concept existed before that, it was presented in the discussion about leadership in the school level as a reaction to a dominant discourse in the past twenty years that assumed that power could be located on the hands of individual leaders. In my view, distributed leadership as a concept has the merit of challenging this assumption by arguing that leadership is a relational process and its practice has to be understood in terms of interactions among people. This is a common assumption with the application of complexity theory to the study of organizations. However, when it comes to its normative potential in higher education, closer attention has to be paid to power relations.

My reflection emerging from the review of the literature used in article I and in chapter 2 suggests that the discussion about power relations in academic departments has at least two conceptual dimensions which are interrelated. First, we can think in terms of relations of power in the overall context into which higher education institutions and academic departments are nested. It is possible to think here in terms of nested systems as discussed in chapter 2 by focusing on the political and economical environment into which policies and political discourses are expressions of dominant worldviews and ways of seeing power relations. Bearing that in mind, Bolden et al.'s (2007) assertion that although the concept of distributed leadership brings an image of consultation and participation, distributed leadership as a political rhetoric has been presented in a political context where decision-making has been increasingly centralized as higher education institutions have been challenged to produce results more directed aligned with goals stated by the state. This is because “bottom-up” initiatives might well be linked “top-down” demands as it is observed by Bolden et al. in the UK sector.

Second, we can think of power relations as part of internal dynamics of interaction within academic departments. It means seeing power as a property of interactions among interdependent individuals in CASs. This is a central claim of the complex responsive process concept presented by Stacey (2006). From this perspective, instead of thinking of power as the possession of some and not others, power is a characteristic of human relating – power

means enabling and constraining relations between people. As people interact constraining and enabling each other in processes of movement over time patterns of power relation emerge in a highly contextual manner. Organizations are therefore seen as self-organizing patterns of interaction from which power relations emerge. For Stacey (2006, p. 245), “learning is thus understood as the emerging shifts in the patterning of human communicative interaction and power relation”. This understanding or learning is compatible with the temporal perspective towards leadership and learning that I discussed in chapters 3 and 6. The application of this perspective to the context of academic departments indicates that different individuals including those in formal leadership positions interact over time enabling and constraining each other in processes of movement happening over time.

This view of power relations contrasts with the claim is presented by Gronn (2000) that distributed leadership implies a different power relationship within the institution where the distinctions between followers and leaders tend to blur. For instance, Gronn’s assumption that concertive action implies in different power relations is criticized by Woods, Bennett, Harvey and Wise (2004) as they observe that concertive action allows for strong partnerships which might entail disparities of power in the school which outcomes are very difficult to predict. Furthermore, Gronn’s assertion has different implications. If we understand that his claim assumes that leaders operate in the unknown like everyone else in the processes of interaction of which outcomes they can never fully anticipate, then we have an argument that encounters support in the analysis of my empirical data. On the other hand, when it assumes a normative character assuming that flatter organizational structures brings about change, then we have a claim that does not encounter support in the analysis of my empirical data and in the conceptual framework that I apply here. It could have been the case in a context characterized by agreement and organizational certainty. However, in context where there is paradox, uncertainty and unwillingness to change as observed in the Norwegian department, the assumption that a flat, non-hierarchical organizational structure would necessarily contribute to positive changes seems to oversimplify struggles of power and everyday mechanisms from which people constrain and/or enable each other as suggested by Johanessen (2009). It is interesting to notice that more recent writings about distributed leadership raise awareness for such limitations. Mascal, Leithwood and Strauss (2009) characterize distributed leadership as

an area of study in an adolescent stage of development. It is an area that no longer naively confident of its own value; greater distribution of leadership is not likely to be *the* answer to what ails schools, for example (although it seems likely to be part of that answer). (p. 269)

Gronn has also more recently argued for the limitations of the normative characters of distributed leadership “in favor of a more naturalistic, organic understanding of it” (2009, p. 18). He claims that in different periods of organizational life, power may vary substantially in the degree it is to which is exercised by individuals or shared. It is likely that both individual and distributed forms will co-exist but with different power balances over time. As he claims, such variations may be adaptive responses to changes in the environment and different perceptions challenges in different periods. As I understand it, this is a move towards a more temporal dimension in which leadership is seen more activity than as a role as I discuss in chapter 9.

8.2 Leadership and teaching in one American research-intensive academic department

The second article was the first empirical one in this study and the first to really address higher education institutions as CASs. The American department was created in 1960 and was originally a research center. According to narratives from the informants who have had positions at the department since its early days, the department only started to offer undergraduate programs after demands from senior management levels in the university, which made this a condition of the department’s new faculty hiring. Organizational growth was described as follows:

There was no undergraduate program because the faculty was primarily organized for research, and spending time teaching undergraduates doesn’t advance your research. So the motivation structure for the faculty was really not to do undergraduate teaching. The dean basically said to us “if you don’t start undergraduate teaching, we’ll start another department, they’ll teach undergraduates and they’ll get the faculty positions”. So the department said “ok, we’ll teach undergrads”. (Professor 2-US, 35 years in the department)

After that, the department grew gradually from seven faculty members in the mid-1960s to 45 in 2008 when this fieldwork was conducted. The informants presented a convergent perception of leadership that gave indications that the traditional collegial model of university

leadership has been kept relatively unchanged in the studied department. This is characterized by a “first among equals” style, consensual decision making, and authority more related to professional than positional power. History, tradition and reputation were commonly evoked by the informants. The dispersed, non-hierarchical leadership model that is described was identified by the informants both as the outcome of and as the major factor for what they regarded as organizational success. Stability in terms of financial resources was identified as an enabler of this leadership model. The descriptions and the report of personal experiences related to decision-making processes resonated with the main characteristics of self-organizing systems, with main decisions emerging from processes of interrelations rather than positional power (Capra, 1996). Leadership was usually expressed in terms of individuals assuming leadership roles at different moments by gaining support. The main example of that described by participants was actually the process of reform of their study programs which was not initiated by individuals in formal leadership positions, but was initiated by other individuals who then gained support and recognition by formal leaders who articulated what was emerging.

While the informants described little changes in terms of perceptions of leadership, the same can be said in relation to perceptions of teaching. There were no signs of a shift from a content-centered to a learning-centered educational paradigm. The informants did not see any need to change the teaching as, according to them, the possibility of working in a very selective university gave them the possibility of working only with top students who were able to learn with little supervision. The necessity to change did not seem to be present as the expansion and diversification of access to education, on which the claim for a shift in educational paradigms is based on other institutions, could not be observed at this institution. Most of the formal and informal conversations on the teaching were content-driven and, according to participants, there were very few occasions when professors had the chance to discuss their experiences related to their role as teachers. The motivation to teach better was usually expressed in terms of personal pride and sometimes competition for PhD students rather than any form of pressure from the department and the university’s overall structure. Both in terms of leadership and teaching, the informants described very few changes and presented a scenario in which they did not feel any pressure to change.

The following table shows categories of perceptions of leadership and teaching and quotes that illustrate each of these:

Table 9

Categories of perceptions and quotes in the American department

Leadership	
Flat, collegial organization	The way priorities are set is very collegial. <u>People talk to each other</u> about what is going on and it's not an imperial style. It's not like someone saying "this is what we are going to do". It's more like building support. Let's say "here it is a good idea", and if enough people get together and support it, then the department moves in that direction. So in that respect, I would say that it feels <u>very collegial</u> . People's feedback is really listen to and valued. The direction tries to go in the direction of the majority. that's not to say that everyone feels this way. There can always be someone who feels different. But it usually moves in the direction that the majority of faculty want to move in. (Professor 7 - Associate Chair of Education – one year in the department)
Consensual decision-making	I think that the most successful academic leaders set consensus. It's <u>not their own vision</u> that they are putting forward. <u>They articulate it and build consensus</u> around it. I don't think that good consensus just happens. I think that leadership is about building that consensus. (Department Chair – 11 years in the department)
Strong funding support the leadership model	The distributed leadership concept is definitely there but what makes it work is this <u>monetary structural support</u> . It could have been different if it wasn't a rich department. It's one of these things of asking, what the causality is. Is the department successful because the leadership is distributed or it became successful because it is distributed? (Professor 7 - Associate Chair of Education – one year in the department)
Teaching	
Internal discussion more content-driven	Our discussion on teaching and the reform of our study program is <u>content-driven</u> . We haven't really changed how we teach, how we teach works really well. But we are in the process of changing our curriculum in a way that reflects our vision of where the field is going. (Department Chair – 11 years in the department)
Little changes in terms of student background	My sense is that it's pretty similar to what it was in the 80s. I don't sense that students have a lot of expectations when they come to class. They come to be told things. They don't come with particular plans or expectations about material. They are there to learn and today it's similar to what it was before. And <u>overall attitude doesn't seem any different. College kids are still college kids.</u> (Professor 4 – 3 months in the

	department)
Top students as factor of motivation/internal pressure and competition for PhD students	I think that students are pretty much the same on average. I think that having top students helps a lot. From the point of view of someone who is lecturing, it makes it a lot more fun because you can move quickly, you don't have to spend a lot of time helping people over the simple points. You can get the simple stuff out of the way and address really immediate issues of the topic, while if you have a slower group of students, you have to spend more time getting over the basics. (Department Chair – 11 years in the department)

Whereas policy documents in Europe (European Commission, 2003) identify competitiveness and marketization as the root of the successful image of elite American institutions, the informants pointed to the history of their institution and their own internal mechanisms of self-organization that create an environment that enhances creativity. However, this image of creativity and success is bounded by a context in which these institutions did not face the same pressures to change as did the higher education institutions in Europe.

Both the Department Chair and the Associate Chair of Education highlighted uncertainty and unpredictability regarding their position. I interpreted the fact that those participants spontaneously described the aspect of uncertainty in different ways as an indication that I would have to look for conceptual tools that were different than those that had been applied so far to investigate departmental leadership. The aspect of “not knowing” was described by the Department Chair on the following terms when he described his own activity:

It's a leadership role. It's about setting direction and strategy to the department in a lot of different ways. Probably the biggest influence is how and in what directions we hire new faculty and making some sort of top decisions regarding different directions our teaching programs are going. This is both about classroom teaching and graduate programs that are more mentoring programs like at the PhD level. But what is interesting is that most of the time I don't know what the outcome of our discussions will be. I actually know that there are a lot of things going on here that I don't know about. It's impossible to know everything. (Department Chair – 11 years in the department)

As I understand it, this recognition illustrates the issue of uncertainty that characterize seeing organizations as CASSs. From the perspective of complexity theory, uncertainty is not only a particular characteristic of the activity of leading, but an intrinsic aspect of organizational life. My observation of this description of leadership from the part of formal leaders motivated my

choice of looking for a theoretical framework that highlighted the aspect of “not knowing” in leading, formulating and implementing strategies in a central way than other theories that had been applied so far as I discuss in chapter 4. This is a recognition that represents the basis of the interpretive discussion that I present in chapter 9.

8.3 Leadership and teaching in one Norwegian research-intensive academic department

The third article addresses the same research questions raised in the second article but now focusing on perceptions of leadership and teaching in the context of organizational changes in Norwegian higher education. The department was founded in the early 1970s and counted also about 45 permanent academic staff in 2009 when this fieldwork was conducted. In both departments organizational growth had implications for the leadership model. Such implications were described by informants in the Norwegian department who had been faculty members since the early years of the department. Informant number five (in the Norwegian department) described these changes:

When I started here in the 70s we were seven or eight faculty members. Now we're around 45-50. We're the biggest department in the university. About 30 years ago we could all just sit around the table, there wasn't even one PhD student at that time, so we decided things in an informal lunch discussion manner and that's totally impossible now. So going from a flat, informal to a hierarchical organization is partly about having a hierarchy to decide and partly about being anarchistic (Professor 5 – Norway, 34 years in the department).

The study was conducted six years after the implementation of the Quality Reform which was a policy reform program guided by principles of competitiveness and system efficiency that aimed at following international developments in education (Bleiklie et al., 2006). The main implication for leadership was the formalization of a more hierarchical organization structure which has been interpreted as a shift in the character of higher education institutions from autonomous collectives to stakeholder organizations. Strategic documents at this university highlight the overall objective of consolidating a top position in international university rankings. It is usually assumed that there are planning actions aimed at achieving outcomes and monitoring the results against the plans. Interestingly, the elected leader in the Norwegian department demonstrated frustration over the changes in his own role, and dissatisfaction with

discourses from the university's senior management focusing on competitiveness as expressed through the concern about the university's position in international rankings. He expressed frustration in the following terms:

The emphasis is always on producing papers, winning awards and winning contracts. Teaching does not have the same attention that it should have from the senior level and maybe not from the department management level either (...). The discourse from the top should be an inspiration for everyone, but I don't think it is. I think it gives more positive energy to the few elitist environments in this university but also a very negative energy to the majority. This type of catchword is depressing. At least for me, it sounds depressing instead of inspiring (Department Head – Norway, 38 years in the department).

The aspect of uncertainty was highlighted in spontaneous ways by the department head and the deputy head for education. The issue of “not knowing” both in terms of what is happening in the department and in terms of the outcomes of their actions in processes of formulating strategies was mentioned by the department head in the following terms:

We have long-term goals to achieve and they came from above but it is very often difficult to have a full picture of what is happening now. We talk to a lot of people and hear a lot of things, but we can't know what happens in every classroom. We don't have control of a lot of things even if we try to influence our department in a positive way (Department Head – Norway, 38 years in the department).

As complexity theory places interrelations as the analytical focus, the overriding goal of the article is to understand how changes in policy and the university structure are related to changes in patterns of behavior on the department level where academics teach and interrelate with colleagues and students. The informants described a set of challenges and dilemmas brought about by organizational growth and the “massification” of access to higher education. Although the university maintained internal elections as the way to appoint department heads, the informants described changes in leadership towards becoming more accountable to external demands. For the informants, leadership has become more centralized and less consensual. They also described a process of bureaucratization of the university that, as they perceived it, had a negative effect on dedicating time to research and to teach. The issue of change being in accordance with the department's relations with its environment and the university as a stakeholder organization was presented spontaneously by most interviewees. However, these changes were almost always presented as being designed externally.

Initiatives aimed at prompting organizational changes are perceived as designed and implemented from above rather than emerging from local interactions, and thus meet with resistance. The informants constantly described their “art of resistance” mechanisms in relation to centrally designed quality assurance policies. This was expressed in the following terms:

Expensive professor time is being used to do the job of some clerk in the administration easier. I’m actually quite angry about that. So before they set up new committees and new initiatives for Quality Reform, they should think a little about things like that. (Professor 6 – 28 years in the department)

The teaching assessment done here is made because we are told to and not to improve. That’s why it’s dumb. Some teachers have this standard formula. It’s more like a formality. Many years ago I learnt from a very smart project manager that when somebody sends you a formula to fill in, what you usually do is that you just ignore it and you will find that from 90% of it you will never hear another word. The 10% which was important will ask “hey, can you do it? I need it”. And then you do it. And that will save you a great amount of paper. It’s very incorrect, it’s very, very bad but it’s very useful. Students also do that. I’ve seen that in the industry. People who write reports, do it because they were asked to and if you ask how they are going to use it, they will say “I don’t know”. And you ask the quality people and they will say “we filed them”. Come on, get rid. That’s ridiculous. (Professor 2 – 9 years in the department)

Challenges resulting from the expansion of access to higher education were spontaneously highlighted by the informants. Although some faculty members mentioned some positive changes, such as students having better social and foreign language skills, nearly all described challenges and even frustration in lecturing to a student body that was far larger than in previous years. However, the findings do not point to any indication of a shift in educational paradigms taking place in the department. Some reported changes were related to the use of problem based learning and group work in classroom activities but, in general terms, the professors did not express changes in how they perceive their own teaching and indicated that a content-centered approach is still predominant. Research was identified as the main source of prestige and professional achievement while the informants declared that their main motivation to teach was personal. Another motivation is the possibility of getting in touch with and recruiting Master’s degree and PhD students. However, an analysis of the department’s strategic plan also indicates that the secondary importance of teaching in relation to research as education is virtually not mentioned.

The findings present elements of both change and continuity. One of the first observed changes were that the leadership of the department in the study had adopted a more centralized and bureaucratic model. However, continuity was also observed as the faculty still demonstrated a content-centered perception of their role as lecturers. This scenario suggests that the new leadership model is not perceived as contributing to the processes of reflection and learning that transformations require. By analyzing these changes in the light of complexity theory, one can observe that changes in leadership are associated with a dominant perspective on policy making and management which emphasizes system efficiency without encouraging deep changes in educational practices in a more transformative way. The response to external demands in this department has been accommodative or incremental rather than transformative.

Table 10 illustrates categories of perceptions of leadership and teaching in the Norwegian department:

Table 10

Categories of perceptions and quotes in the Norwegian department

Leadership	
Leadership more centralized	We have a different way of governing the institute now than we had 10 years ago. Because 10 years ago all teachers each month had a general meeting, controlling the decisions made at the department. And now <u>decisions are made by one or two persons and we don't even know about it</u> (Professor 7 – 37 years in the department)
Decision-making less consensual/democratic	I'm not completely unhappy with the decision-making process but, it has become a little bit <u>less transparent</u> than it was before because in the first half of the 90s the decision model was different, because then all the important decisions were taken by a department council, where all the permanent employees had the right to meet, whereas now there is a model where the decisions are taken by the head of the department and he or she does not need any council. (Professor 4 – 13 years as an employee staff member and 8 as a student in the department)
More bureaucratic	What is really going bad in this university is that some people think that having a quality assurance system improves quality. We now actually <u>spend more time in bureaucracy related to teaching than teaching</u> . We have these new systems to improve quality, but for most people it's just stupid and takes time. But

	that's really the only kind of thing that affects our teaching and I think they are stupid. (Professor 8 – 11 years in the department)
Teaching	
Discussion about what to teach, but not how to teach	It's <u>not the person's ideas that are important to have but it's the established standards that all universities should follow</u> . It's important to do that. <u>"What" to teach comes first, simple.</u> There are 10 packages here, if you go through all these, you are a professional. It shouldn't be more complicated. All the things I have been teaching here I have not been a student in such courses myself but I have a general mathematical background making it easy to understand and use other ideas because there's always some mathematics at the bottom. If not, then it's not real knowledge yet. Then it's feelings. (Professor 7 – 36 years in the department).
Teaching-centered approached	<u>Quality is to transfer knowledge to the students.</u> That's my immediate reflection about that. It's about teaching them the relevant topic. It's what you choose to teach and how you perform the teaching. (Professor 10 – 22 years in the department)
Expansion as a challenge	You get <u>more students</u> but there is only one certain amount of talent in the human race. My teaching reflects these changes in the fact that <u>my expectations are lower</u> and that's not a good thing for a university that is trying to be world class (Professor 6 – 28 years in the department)

The main conclusion of the article is that changes in departmental leadership based on principles of competitiveness and system efficiency reinforce a paradigm that reflects a mechanistic metaphor of reductionism and objectivism. Even though the informants experienced a more centralized leadership model that would improve system efficiency and enhance the capacity of the university to change, the evidence encountered here suggests that teaching is still confined to instruction and transmission. It is suggested that changes in higher education towards sustainability require participative learning processes engaging in reflection, where leadership plays a role in opening the possibility for further exploration and new meanings. I concluded that this requires a shift from linear design to designing with intent and building on uncertainty by engaging in processes of interaction in a reflective and imaginative manner. The reflections here on efficiency, learning, and transformative changes

towards system sustainability inspired the formulation of the research questions that are addressed in the fourth article.

8.4 The contribution of complexity theory to the study of departmental leadership in processes of organizational change

The point of departure for the fourth article is a critical review of the literature on departmental leadership, based on the claim that the focus on change and sustainability requires different questions than those that have been asked so far. Seeing higher education institutions as CASs involves a discussion on system sustainability, which then becomes a guiding principle in many spheres of human organization. The notion of system sustainability introduces a redefinition of system failure, which can only be understood in relation to shortcomings in the overall system of the universities. Systems thinking also indicates that shortcomings should be understood in terms of failing to recognize the boundaries of our overriding living system. This is expressed in terms of a crisis of perception which is defined as a situation where a dominant mental model does not provide any more questions and solutions to the challenges of its time. Such crises are not overcome solely with the implementation of reform targeting improvement but require a rethinking of educational goals and new learning levels which has implications for all the four Ps of education as discussed in the chapter four.

Efficiency and effectiveness are key words in this discussion as they have different implications for the perceptions of change. Thus, although these terms are often presented almost as synonyms, it is important to have a clear definition of their meaning. In this sense I use Drucker's (2006) distinction: efficiency means "doing things right" while effectiveness means "doing the right things". This is indeed an important distinction as the first is the main concern in most policy reforms in Western countries, while the second is what has been the main emphasis of most studies on departmental leadership. However, for the investigation into changes in higher education in the light of the concept of sustainability, we need to go beyond the focus on efficiency and effectiveness.

Previous studies in departmental leadership have usually attempted to identify the characteristics of leadership behavior associated with effective practice. Although such

studies have helped to advance our understanding of university leadership, the current challenges require a different approach. With its recognition of uncertainty, emergence, and the importance of power relations, complexity theory is a promising track. The article recommends a framework for future studies and proposes a number of research questions. It can be said that this article positions the main arguments of this thesis in relation to what has been produced so far in the field of organizational studies in higher education institutions and sets new directions.

8.5 Reflecting on empirical findings in the frame of the overall problem statement

The goal of the present section is to provide a link between the empirical findings in articles II and III and the interpretive chapter 9. In each department, I identified recurring patterns or current themes that cut across the data. The next step in interpretive qualitative studies like this one is always to interpret the descriptive account of empirical findings using the conceptual framework adopted (Merriam, 2002). The analysis of perceptions of leadership and teaching in the two departments highlight some previously well document aspects of organizational life in higher education related to change teaching such as organizational growth, education seen as less important than teaching and resistance to change. It is time now to recapitulate my key assumptions, first in terms of organizational theory and leadership, and second, in relation to challenges related to teaching and learning in high education:

Central assumption in relation to leadership change: by analyzing the two departments as CASs I imply that they consist of networks of interactions in which new patterns of behavior emerge from experience. The main argument suggested by the Hertfordshire group and proponents of the systems thinking perspective is that organizational transformation takes place as changes in people's behavior in local contexts in which power relations and procedures are expressed. As the world is inherently complex and therefore uncertainty is an intrinsic characteristic of organizational life, it is not realistic to talk about levels of complexity or expect that a leader can reduce and increase uncertainty. My

interpretation of the main implication of complexity theory to the debate about leadership is that leaders working with organizational change have to accept and learn to live with uncertainty. From a complex perspective, even in the most controlling regimes, meanings and patterns of behavior will always emerge in ways that cannot be understood solely in terms of a linear cause-effect impact of the leaders' behavior. In both departments the leaders recognized that they were working with an unknown future with outcomes they were far from fully controlling. As my conceptual discussion about organizational change in chapters 4 and 6 highlight, rather than seeing change as a movement from one period of stability to another, the complex perspective recognizes paradoxes as stability and change coexist as characteristics of human relations and organizational life.

Central assumption in relation to teaching in higher education: As discussed in chapter 6 and article IV, every change requires some level of learning. Departing from the perspective of system thinking, higher education institutions face the challenge to contribute to make a positive difference in overall systems struggling for sustainability. The conceptual discussion presented in this study pointed out that rather than incremental or piecemeal change, higher education institutions face the need to undertake transformative change in relation to teaching. As this challenge demands deep levels of learning not only from student, but also from lecturing staff, there is a need to discuss how the activity of leading is related to process of change in approaches to teaching.

The above mentioned assumptions that guide the interpretation of findings emerged from the research process itself. The overall problem statement of this study as presented in chapter 1 express a process of reconceptualization of departmental leadership. These assumptions emerged from my perception of limitations of the concept of distributed leadership which was the initial conceptual concern of this article of as discussed in subsections 4.2.2, 4.2.3 and section 8.1. Although I recognize the contribution of distributed leadership, my reflections on the conceptual dimension and the analysis of empirical data indicated that the reality that I was investigating was indeed more complex than I had expected and therefore showed me that I needed to look at departmental leadership in a different way. In other words, I had to

challenge my own normative assumptions regarding distributed leadership and look for different concepts to reflect upon stability, change and paradox. The reflection upon the empirical findings and the discussion about the concept of “edge of chaos” in the next subsections provide an interpretive bridge to the two concluding chapters of part 1.

8.5.1 Reflections from the American department

In the American department, the informants did not describe and did not point out the necessity for change either in terms of leadership or teaching. As I interpret it, the perceptions of leadership presented by participants can be identified with the collegial culture suggested by McNay (1995). This collegial model of leadership was presented both as an outcome and as a reason for what was identified as an organizational success. One potential interpretation is that the fragments of organizational reality in the American department, is that it is possible to identify paradox in the sense that stability and change co-exist. There is stability in terms of academic values and assumptions related to teaching at the same time that there is a perception of a leadership model that does not claim to be based on organizational certainty, but that recognizes emergent processes in the department.

My interpretation is that participants’ perceptions do not present a context of system equilibrium marked by certainty and agreement, but one in which changes and continuities emerged from many interrelations in which uncertainty and disagreement could be identified. Perceptions of leadership described organizational processes that were not part of the individual design of formal leaders. Power relations in this department reflect traditional values in academia in which individual autonomy and identification with their research field were emphasized more than the necessity or pressure to give answer to external demands. The role of the leader emerges thus as one who identifies and articulates what is emergent. Although some would describe the American elite institutions as successful by emphasizing internal equilibrium of the system and external competitiveness, in the department in this study non-equilibrium and processes that emerged from interrelations were identified with creativity and individual initiative, which in turn were identified with organizational success. Moreover, there is no perception of internal or external pressure to change approaches to teaching.

8.5.2 Reflections from Norwegian department

In the Norwegian department the informants experienced the role of the leader as being more distant and less accountable to the internal values of academia that historically played an important role in their identification as members of an academic community. The model described by participants matched in many ways with the bureaucratic organizational culture in the typology suggested by McNay (1995). In the Norwegian department the role of the leader that emerged is increasingly related to decision making and authority and a new configuration of power relations in terms of external accountability and a culture of improvement. A paradox with both change and stability coexisting could also be identified here but assuming a different shape than in the American department. There is instability as there is a contrast between traditional academic values in higher education and a more instrumentalist view of higher education. This externalist view is manifested with the implementation of quality assurance mechanisms that are externally designed. However, there are many signs of continuation in terms of assumptions in approaches to the teaching often expressed in terms of emergence of the “arts of resistance”. In this context, the redefinition of the activity of leading as described by perceptions of faculty and leaders themselves do not seem to be conducive to transformative change in terms of educational practices. Here, although the department leader himself assumed a critical position in relation to both national policies and the university’s internal move toward managerialism, his own everyday activity reflected these externally designed changes.

It is important to bear in mind that as discussed in chapter 2, policy reform programs implemented in Europe express a different worldview than the one I have suggested in this study. Anyhow, even if the pressure to give answer to external demands is readily identifiable and the leadership model expresses different configurations of power, there are no signs of transformative change in relation to the teaching in this department. Although the informants experienced different power relations, they still experienced their role as teachers as being confined to the content-centered paradigm rather than shifting to the learning-centered paradigm. They maintained that they put much effort into complying with bureaucratic processes rather than activities that would arguably lead to reflection on their role as teachers. Little was mentioned in terms of faculty and leaders reflecting and exploring the unknown in the search of innovative practices.

8.5.3 An interpretive bridge to the next chapters

The goal of section 8.5 has been to present a transition from the two previous analytical sections to the two last chapters of part I that are interpretive in nature. My theoretical framework states that when people work together they become involved in communicative interaction and power relations from which change might emerge. As Fioretti and Visser (2004, p. 12) claim, “the multiplicity of subsystems, their diversity, the linkages among them, and the unpredictable aggregate behavior that results make designing ‘effective’ organizations and taking decisions involving organizations hard”. Therefore, the same authors highlight the need for an interpretive approach from leaders, rather than only analytical. This assertion is also developed by Snowden (2002b). Likewise, research always involves interpretation and not only analysis of findings. As my overriding problem statement highlights a reconceptualization of departmental leadership, I discuss a central concept of complexity theory as a way of initiating an interpretation of findings in the two empirical articles.

One way of interpreting my findings is by reflecting upon the concept of “edge of chaos” that was discussed in chapter 6. The reflection upon the concept of “edge of chaos” is particularly enriching at this stage as it implies in reflection about stability/instability, interconnectedness, and self-organization which is spontaneous and unpredictable. From the viewpoint of system thinkers and early writings from Stacey and associates, innovative systems of human organization are innovative because they exist on the “edge of chaos” (MacIntosh & MacLean, 2006). The typical prescriptive argument of this viewpoint in its earliest form is that there is a managerial need to position organizations on the “edge of chaos” in order to create conditions for change to emerge. The managerial implication of this argument to the concept of academic departments would be that in order to changes to emerge in such settings, department leaders would have to intentionally create a context of bounded uncertainty and disagreement on the limit of disaggregation. From this perspective, the department leader would assume the position of an external observer whose goal would be to bring the department to a fluid position at the “edge of chaos”. It is thereby assumed that we can move a system like an academic department from a zone of certainty and agreement to one of uncertainty and disagreement (Stacey, 1996). However, although I acknowledge the contribution of such early writings in system thinking and see organizations as CASs, the understanding of the concept of “edge of chaos” that I assume in this study is a different one. Bearing that in mind, it is important to interpret the data in the light of the understanding of

“edge of chaos” that I have followed here. This is an understanding that is coherent with the ontological implications for organizational theory that I discussed in chapters 3 and 4.

The perceptions of leadership presented by faculty and department leaders did not present any indication that leaders rationally or intuitively attempted to move their departments across zones of certainty or uncertainty. Even when asked about the role of leaders and the impact of leadership on teaching, faculty and leaders in both departments invariably described or at least mentioned activities. Instead of describing roles in spatial dimensions, most participants described actions by using words such as, “managing”, “coordinating”, “talking”, “articulating”, “deciding”, “planning” and “listening” which indicate different activities being carried out over time in contexts of interaction between people. As an illustration of that, all quotes describing leadership on tables 9 and 10 describe activities in one way or another. Having that in mind, from a viewpoint of “edge of chaos” that incorporates the recognition of paradoxes, when different agents in a system act in processes of relating to other agents, they are acting paradoxically with both stability and instability at the same time. Although I recognize the potential of the certainty-uncertainty matrix as a sense-making tool discussed on section 6.3, during my research process it became clear to me that in order to understand leadership in academic departments, we need an understanding of “edge of chaos” that moves from the Cartesian perspective implied in the matrix. It means moving from its original focus on categorization of organizational reality and prescription. Therefore it is my interpretation that throughout their activities, departmental leaders interact with other agents and that our interactions are always paradoxically stable *and* unstable at the same time, rather than stable *or* unstable. Hence, departing from this understanding of the concept of “edge of chaos”, in order to lead academic departments in adaptive ways demands much more learning to “surf on the edge of chaos” (Pascale, 2006) than determining ways of moving a department across zones of certainty or uncertainty.

The empirical findings highlight some of the challenges related to leadership change as identified by the literature that I reviewed in chapter 4. As the conceptual development of this study highlighted the necessity to look at leadership as an activity rather than a role, it is important to discuss how aspects of the activity of leading are related to learn and change in academic departments. In the next chapter, I present my interpretive understanding of important activities of leaders in academic department such as planning, articulating emerging themes and management related to change. The next section contrasting system efficiency

with complex system change presents some of the conceptual assumptions guiding the discussion on the interpretive chapter 9.

8.6 From system efficiency to complex change

As the fourth article discusses, most studies into departmental leadership reflect a series of assumptions that permeate dominant discourses on leadership in higher education institutions. It is widely believed in the literature that effective leadership improves performance and therefore ineffective leadership impedes improvement. In many ways the role of the leader is assumed to be situated above or outside the system, and leaders may present goals and objectives which express their own vision. For the Norwegian department in my fieldwork this vision would consist of a local interpretation of national policy and relations of accountability to the overarching university structure. Here, organizations are seen on a rational basis, with step-by-step modeled processes of analysis and monitoring of results. The image is one of predictability and reduction of uncertainty where individual leaders charismatically persuade others to implement their visions. This view of leadership that implies a linear notion of time and change is different from the view that I have been suggesting in this study. The complex thinking perspective that I apply in this study assumes that leaders in organizations need to be understood as agents who participate with qualitatively more power than other agents in continual processes of relations in which the future is perpetually being recreated. Systems thinking and complex responsive processes, which are the two main strands of thought in complexity theory that I identified in my literature review, agree that people in organizations engage in interrelation processes for which no predictive model exists. Both emphasize the unpredictable, emergent and change-generating character of organizational life. Both stress the importance of local level interaction marked by creativity and spontaneity. Therefore, if leadership is a relational process marked by unpredictability, can the leader step outside this interaction to design its outcomes? Based on my empirical findings, I find Stacey's (2010) description of leading very illustrative:

when leaders 'set directions' or formulate organizational 'designs', they are in fact articulating social objects and cult values as second order abstractions, making statements about generalizations

and idealizations as gestures, but what happens as a result of doing this depends on how people take up such social objects and cult values in their local interaction with each other. (p. 214)

The “social objects” articulated by the leader in the American department were less dramatic in the sense that they had deeply-rooted and established traditional academic values. In the Norwegian department, on the other hand, “cult values” impacted established power relations and were met with frustration and resistance to change. The findings from these two cases suggest that complex change requires that leadership is reconceptualized into one that opens, rather than closes, and broadens the possibility to explore the unknown and open for the emergence of new meaning. Leadership is hereby reconceptualized through transformative processes rather than through incremental change. This means going beyond claims for efficiency and effectiveness. A citation that is usually attributed to Einstein says that we cannot solve the problems we face by departing from the same way of thinking that we had when we created them. I personally believe that this assertion could not be more timely and representative of the challenge by higher education today in contributing to a world challenged by increasingly complex challenges.

The meaning of adaptiveness to higher education, willingness to change and a reflection about the implications of leading academic departments in adaptive ways was the topics of the next chapter.

8.7 Summary

Chapter 8 summarized the findings in the four articles of this thesis and established connections between different reflections that emerged in each article. In article I, I discussed the implications and limitations of distributed leadership to the study of organizational change in higher education. Moreover, I discussed empirical findings in article II and III. The common aspect of the departments investigated in the second and third articles was that no evidence of transformative changes could be found in either. In the American department, perceptions showed that leadership emerged as an expression of traditional values of collegiality in academia, while in the Norwegian department, perceptions showed that change in leadership is a process of shifting power relations embedded in a discourse emphasizing

system effectiveness, but not contributing to a process of reflection on the teaching role of the department. The findings reinforce the insight into the necessity of approaching leadership in that recognizes and opens for the exploration of uncertainty rather than one based on system equilibrium. This is a central argument in article IV. Section 8.5 presented a transition between the previously analytical approach towards empirical finding towards a more interpretive character assumed by the two concluding chapter of part I. A conceptual discussion of the “edge of chaos” and paradox was the base of this interpretive section

9. Interpretation of Findings

In this chapter, I build upon the analysis of the findings and the discussion about the concept of “edge of chaos” to present a critical reflection of the contribution of complexity theory to the study of leadership and organizational change in academic departments. In order to address this subject, this chapter is divided in two main parts. In the first, I review the discussion raised in chapter 2 about challenges faced by higher education institutions as nested systems in a world struggling for sustainability. As I have discussed changes in academic departments by seeing them as complex adaptive systems, it is important that I present a reflection about what the word “adaptive” means. In this sense, complexity theory has a contribution in contextualizing challenges faced by higher education institutions. In the second part, I discuss what complexity theory can tell us about leadership and change in academic departments. The main reflection of this part can be expressed in the following terms: how can complex systems such as academic departments be led in adaptive ways? As discussed in my chapter 1, I do not present here any kind of practical solution or guide for leadership practice. Instead, I build upon my reflection about the “edge of chaos”, complexity theory and empirical findings to discuss a perspective towards leadership in processes of change in higher education. I conclude this chapter presenting a further reflection about the contribution of complexity theory.

9.1 Adaptiveness in higher education

One initial step to understand what the word “adaptive” might mean for higher education could be to differentiate adaptiveness from adaptability. As Heerink (2011, p. 80) describes, “the notion of adaptability refers to the user being able to adapt a device or system to his or her demands or needs; adaptiveness refers to the system adapting autonomously”. So rather than the ability of external agents to adapt a system to his demands, adaptiveness is understood in terms of aspects of the internal organizational context that enable adaptation to changing external contexts. Adaptable systems allow the user to change the characteristics of the system and allow him or her to adapt parameters and behavior of internal agents according to his or her demands. On the other hand, systems that are adaptive have the capacity to adapt

themselves to changing external contexts. Since I am discussing “adaptive systems” instead of “adaptable systems”, my focus has been on such internal organizational characteristics. My initial reflection when I came across this differentiation is that it brings serious implications for policy-making in higher education as often policies seem to imply that higher education institutions are (or should be) adaptable rather than adaptive.

It is also significant to notice that adaptiveness has a more active connotation than adaptability. This is an important observation if we depart from the assumption that systems of human organization are always nested systems. This is an assumption that I present on chapter 2, in which I present an understanding of academic departments as systems of human organization nested in higher education institutions which are also nested in other systems. In nature, life is seen as an integrated process of living systems continuously interacting over time and space with surrounding systems (Günther & Folke, 1993). If we apply this understanding of nested living systems to the study of systems of human organization, we will conclude that an adaptive, “healthy” organization is one that has the capacity to change in an interactive, rather than a passive way with its environment and overall systems. The notion of nested systems is in itself a very straightforward one: it is assumed that there is a surrounding relation among systems which larger ones encompassing smaller ones. It is easily identifiable when we think about organizations in which we can locate units and subunits. For example, in large research-universities, there are faculties and academic departments within these. However, when we discuss more abstract concepts such as society, environment and economy as systems, the way we identify a “hierarchy” among those will invariably be dependent on our own worldviews. It is also fair to expect that different worldviews and different ways of identifying a hierarchy among such systems will lead to different perceptions of challenges faced by higher education institutions. Likewise, it is fair to anticipate that different worldviews imply in different ways of seeing the role played by higher education institutions in society. In the section 2.4, I discussed perceptions of challenges that seemed to have permeated policymaking in Europe during the last two decades. Furthermore, I contrasted this view with the understanding of challenges faced by higher education institutions presented by Sterling (2003, 2004). I highlighted the assumption that economy and society are nested systems into ecosphere.

From this perspective, it is possible to say that the main challenges of our time consist of sophisticated sustainability issues that demand high levels of learning as described by Liang

(2010). This is because, as Liang describes, adaptiveness requires a shift from instinctive sustainability to innovative sustainability. As explained by Liang (2010), instinctive sustainability is connected with short terms benefits on an individual level, focusing on optimal returns to every action, and can be illustrated by the Newton third law which determines that to every action there is an equal and opposite highly linear reaction. On the other hand, innovative sustainability is associated to longer-term planning (“futuring”), longevity of the species in a context of co-evolution with other systems. This notion of sustainability involves higher levels of learning as I discussed in chapter 6. This is a fairly broad approach to adaptiveness and sustainability that in many ways challenges a pure Darwinist approach to adaptation. Then what does it mean to be adaptive in higher education? What does it mean to be an adaptive higher education institution? Or an adaptive academic department? Based on this reflection about adaptiveness, I answer such questions in the following terms: adaptiveness for higher education institutions and its units means both the willingness and the capacity to learn and adapt in an active manner co-evolving with other systems in an ever changing world.

In this sense, some would claim that complexity theory does not tell us how systems of human organization can be led in adaptive ways. Furthermore, it has been claimed that complexity theory is not a theory of leadership as some authors find an inherent contradiction between interconnectedness and leadership (Fenwick, 2010). This is a claim that I challenge in article IV. My basic claim here is that complexity theory itself does not tell us how systems can be led in adaptive ways because its central message is that we have to learn to live in an uncertain world in a constant movement over time in which there is no single formula for leadership. On the other hand, if we think about complexity theory in terms of a worldview with the epistemological and ontological implications that I discussed in chapter 3, it is possible to trace some general perspectives to leadership in processes of change in academic departments. The reflection about the meaning of adaptiveness to higher education that I present in this section and the analysis of empirical findings and discussion of “edge of chaos” in the previous chapter present the basis to the discussion that I address in the section 9.3. Nevertheless, before discussing how academic departments can be led in adaptive ways, I use the next section to discuss another important aspect of organizational change: the willingness to change.

9.2 Willingness to change

The willingness to change from the part of different agents in the system is a critical point in such processes. As discussed by Jackson (2005), organizational change involves many feelings from agents in the system. As he observes, in higher education perceptions of changes being associated with loss in terms of security, power and prestige might involve fear, mistrust and therefore the unwillingness to change. In my discussion about change and learning, I accepted Stacey's (2006) argument that in complex systems, learning is an activity of interdependent people rather than an action associated to abstract concepts such as groups and organizations as advocated by the systems thinking perspective. According to this perspective, knowledge is produced and potentially transformed in processes of interaction between people. Therefore, it seems to me that it is fair to assume that learning and organizational change in higher education depends on the willingness of such interdependent people to learn and change.

However, the willingness to change from the part of academic staff and individuals in leadership positions is something that is not always easy to identify or measure. The phenomenological approach that I applied in the empirical component of this study demands that the researcher relies to a large extent on the account of personal experiences as they are presented by participants. However, it is important to avoid an unreflective position as it is fair to expect that participants might not spontaneously express unwillingness to change their work habits which are based on established cultural rules of behavior in the academic world. Some participants demonstrated interest in improving their activity as lecturers. As discussed on the previous chapter, personal pride or internal competition was sometimes mentioned as factors of motivation to be better lectures, but willingness to change was not clearly expressed or articulated. On the other hand, it was clear that mechanisms through which unwillingness to change could be exercised, existed in both departments. In the Norwegian department, where leadership assumed a more centralized character, some participants described unwillingness to accept changes in the work behavior and the "arts of resistance" used to oppose and neutralize bureaucratization and externally designed policies. Alongside with policies, there is always a set of local interaction that can either support or pervert externally designed plans and policies. In the American, department some participants described how organizational growth coupled with a leadership model still highly characterized by the traditional model of collegiality in higher education, provided space for individuals to keep

distance from other processes in the department and conducted their work according almost only to their own will. Leaders in both departments did not clearly express any view of change, while a concern of improvement or quality maintenance on terms of current patterns of behavior was more evident.

The unwillingness from different individuals to change behavior in academic departments has many implications. Approaches and behavior linked to teaching practices are always associated to worldview and historically established patterns of behavior which are difficult to change. The fact that academic staff in both departments often described that their activity of lecturers reflect to a large extent how they experienced teaching when they were students is important to observe. As discussed by Sterling (2004) profound changes in educational practices imply changes in worldview which usually encounter unwillingness. Hence, it is important to keep in mind that as claimed by Snowden (2004), organizations are always space of multiple belongings where individuals have many cultural, social and familiar roots which have an effect on their identity and worldview. This multiple belonging in itself poses serious limitations on how the experience of leadership in their work environment might bring profound changes. From this perspective, identity is in itself a CAS. However, it does not mean that leadership is irrelevant. Leadership is one of the many forms of human interaction that influence our patterns of behavior.

Seeing from the perspective of complexity theory, this scenario highlights the importance of avoiding a naïve understanding of emergence. There is a tendency in some writings claiming to follow complexity theory presenting a certain understanding of emergence that assumes that “things just happen”. Emergence is seen according to this perspective as the opposite of control (Schreiber & Carley, 2006). The claim here is that positive changes in organizations happen when leadership is distributed and managerial activities are decentralized. The common diagnostic offered by this perspective would be that self-organization equates with self-governance and empowerment in which individuals manage themselves within certain boundaries and bottom-up decision-making balanced with top control in order to avoid chaos. For the proponents of this position, the decentralized leadership model found in the American department would be the one most conducive to organizational change in higher education. However, in my study I did not find any evidence of perceived deep changes in terms of patterns of behavior and approach to teaching. On the other hand, such changes in terms of approaches to teaching could not be identified on the Norwegian department, in which

participants described perceptions of a more centralized leadership model and the emergence of “arts of resistance”. I observe that the aspect of unwillingness to change and the “arts of resistance” in academic departments as described by some participants illustrates that this view of emergent changes as result of decentralization of power does not represent organizational reality.

Furthermore, emergence is in fact the opposite of things “just happening anyway”. If we assume emergence as an ontological principle, then new patterns of behavior emerge because of what different agents – leaders being also agents - in the system are doing and not doing. Therefore it seems to me that the answer of complexity theory to the dilemma between decentralization vs. authority is organizations recognizing paradoxes, resistance to change and the conflictual nature of organizational life has to be the following: there is no single formula. If we think about processes of changes as non-linear movements over time characterized by bifurcations, then the answer to this question will depend on the context of local interactions. It is in the context of such local interactions in systems like academic departments that decentralized or centralized leadership behavior might provide or not the positive feedback for learning and exploration of the unknown that changes involve. It depends on contextual factors and is related to another aspect of organizational behavior that I did not explore in this study but that I identify as an extremely relevant topic for further studies: ethics. I highlight the importance of this topic in the concluding chapter in which I present possible questions for further studies.

By seeing academic departments as CASs, it is possible to observe that leaders are important agents who, because of their visibility and interaction with many individuals may influence in a positive way and contribute to generate momentum for change. However, rather than moving organization from a state of certainty to state of uncertainty, leaders act in the “edge of chaos” in process of interaction from which change and stability emerge and coexist. Therefore, it is important to reflect on different aspects of the activity of leading and how these could be related to adaptiveness in terms of capability to change. In the next section, I discuss some general aspects of the activity of leadership in processes of change in academic departments.

9.3 Leading in adaptive ways

Sims (2010) defends the claim that leadership is an activity and not a role. This is an assertion that can certainly be interpreted in different ways as the author himself does not explain in detail what differences he sees between an activity and role. One possible interpretation is that seeing leadership as an activity highlights a temporal dimension while seeing leadership as a role implies in a spatial dimension. The interpretation of leadership as an activity resonates with the idea of processes of changes as movements over time that I have assumed in this study. It is in accordance with the claim that we need to focus on the complexity of the experience of organizing and not only on the experience of organization, as suggested by Griffin and Stacey (2005). Johannessen (2009) makes a similar claim by observing that complexity theory demands a shift of attention in the study of leadership from visions, strategies and goals to the movement of everyday experience. From this perspective, it seems coherent to see leadership as an activity rather than a role. In this sense, I do not deny the relevance of seeing leadership as a role as it certainly enable us to understand certain aspects of leadership in organizations. However, I discuss here changes as emergent processes of non-linear movements over time, the view of leadership as an activity is particularly relevant.

It is possible to identify in the literature that I discuss on chapter 4 and in the descriptions of perceptions of leadership that the activity of leading academic departments involve at least three main aspects: planning, everyday managerial activities and articulating emerging themes. These activities involve many challenges faced by department leaders in processes of change. I discuss in the next subsections how these aspects of the activity of leadership might be related to organizational change in terms of approaches to teaching in academic departments. It can be said that the root of all these intertwined activities is that they involve processes of interaction with other agents. Leadership in academic department can be looked at in terms of different activities in the “edge of chaos” in a context of interrelations between people from which change and stability emerge. In all these activities, the issue of “not knowing” the future can be related to. According to the conceptual framework that I adopted in this study, it is in the context of such processes of interaction in which agents are constantly enabling and/or constraining each other, that novelty and change can emerge. In other words, it is important to discuss how these activities can contribute to generate momentum for positive change.

9.3.1 Planning

In both departments, planning was usually formalized with the production of a document called “strategic plan” that identified challenges and established goals and strategies for a period of four years. As described by participants, the strategic plan was usually produced as a result as of series of discussions organized by formal leaders and with the participation of academic staff. In both departments studied here, the strategic plan had in common the fact that visions of changes in terms of teaching were only in relation to content and did not express any vision regarding approaches to teaching. It is not possible to generalize these findings to other departments. For instance, the studied conducted by Gibbs et al (2006, 2008) how some departments develop plans to change approaches to teaching. However, although changes could be identified by the authors, it was difficult to identify a linear relation of causality between such plans and organizational outcomes. Complexity theory can shed some light upon this. It has been argued that authors writing about organizations from the perspective of complexity theory, especially those writing from the complex responsive process strand, are against strategy and planning (Mowles, Stacey, & Griffin, 2008). Planning and recognizing the unknown might indeed initially be looked at as a contradiction. However, I understand that there is nothing in such a perspective that denies the importance of strategy and planning in organizations, but it suggests we need to think about such aspects of organizational life in a way that recognizes that outcomes often cannot be directly associated to intentional behavior.

This is particularly challenging because as Snowden (2005) states, we have a tendency to ascribe intentionality and cause where these do not necessarily exist: “if a particular accidental or serendipitous set of actions on our part lead to beneficial results we have a natural tendency to ascribe them to intentional behavior and come to believe that because there were good results, those results arose from meritorious actions on our part” (p. 51). Serendipity is a term that deserves further consideration in the discussion about learning and change in higher education. Broadly speaking, it means the accidental discovery of something valuable or the process of unsought discovery (Pina e Cunha, Clegg, & Mendonça, 2010). It does not emerge from the application of the already thought and known. In organizational settings, serendipity cannot be understood only in terms of isolated moments of accident but also as curiosity coupled with the organizational capability to recognize and explore the unknown. Pina e Cunha et al. (2010) describe how serendipity is often recognized as a vital

element in research and development. When leaders interact in process of planning and formulation of strategies towards teaching, it is therefore important to keep this perspective in mind. The authors' central argument is that although learning happens sometimes in programmed ways, it happens also often in non-programmed ways. Therefore, planning in adaptive ways involves sensitivity to organizational openness in which different agents have the space to look beyond what is usual and familiar.

The formulation of goals and strategies are always interesting exercises of reflection in which generalizations and idealizations are expressed. So when leaders in academic departments engage in the formulation and presentation of strategic plans and goals which might involve organizational change in terms of approach and behavior related to teaching, they are presenting social objects in the form of idealizations. However, the result of this depends on how individuals perceive such objects in the context of their local interactions.

Both the department head and deputy head for education in the Norwegian department described personal frustration with planning processes that did not bring any effect in the department and the lack of mechanisms to follow-up results internally although their position has been granted more formal authority in recent years. I have argued before that complexity theory as a worldview is essentially about recognizing paradox. My interpretation of findings related to planning in the Norwegian department reveals a very paradoxical relation between leadership, planning and organizational change in academic departments. I express this in the following terms: the implementation of strategies are important organizational processes in which outcomes need to be followed up by leaders in academic departments, but paradoxically as it is, leaders need to recognize that changes might often emerge in a serendipitous form that could not be predicted or measured when strategies were formulated. My interpretation of this context indicates that the recognition of this paradox is an important aspect of the activity of leadership that might influence positive changes in academic departments.

It is important to discuss how the activity of planning might become bifurcations points from which novelty can emerge. In the two departments that I investigated in this study, strategic plan documents did not express any concern with changes in terms of approaches to teaching. In the Norwegian department, most initiatives to change teaching in other ways rather than only changing content came from the political environment with the implementation of the

Quality Reform as I discussed in chapter 2. This policy program inspired by international developments incurs in planning and analysis processes of efficiency required if a higher education institution is to be able to carry out day-to-day tasks. This has resulted in a very paradoxical situation for leaders willing to influence change: they have to operate in formal planning systems and evaluating processes efficiently as expressed by overall political and administrative structures, but they also have to operate with the interest of creativity and changeability in the informal day-to-day networks that undermines such overall structures. In the Norwegian department, perceptions and frustration with this paradoxical situation were expressed by the department head and the deputy head. The department head expressed more clearly a frustration with what he identified as a conflict between the externally designed long-term planning which establishes goals with a timeframe of ten years and what he expressed as “being good everyday”. Complexity theory and the emergent ontology perspective that I discussed on chapter 3 poses serious limitations to long-term planning as it is usually formulated by policy documents in higher education. Rather than planning based on the anticipation of the future, it is necessary to have into account a number of possible scenarios recognizing that a too narrow focus on linearly identifiable results might reduce the possibility to adapt and change.

The recognition of this paradox does not mean that there is no space for planning in academic departments in other ways than those expressed by policy environment in Europe focusing on system efficiency and equilibrium. Leaders can engage in the formulation and implementation of strategies for change based on their perception of the complexity of their local environments probing new initiatives which might become bifurcation points, and thereby sensing what is emerging and responding (Snowden & Boone, 2007). By responding, it means that leaders can creatively think about ways of amplifying emergent outcomes in terms of approaches to teaching if they are perceived as positive, and reducing its outcomes if they are perceived as negative. It involves articulating emerging processes as illustrated by the accounts of restructuration process of the study program in the American department. As Snowden and Boone (2007) argue, planning in complex systems implies in focusing on emergent practices, rather than merely on “best practices” (as in simple systems) and/or “good practices” (as in complicated systems). The formulation of strategies for changes in teaching and learning involves the recognition of the serendipitous aspect of organizational life with the emergence of new knowledge that is not rationally designed and previously expected.

I have discussed in this section an understanding of planning in academic departments in which plans and strategies might constitute in bifurcation points which might assume the shape momentum for change from which new patterns of behavior and new practices might emerge. This is an aspect of activity of leadership that demands sensibility to identify what is emerging from local interrelations in which the implementation of plans and strategies are perceived. Therefore, the sensing and articulation of emerging themes is the topic of the next subsection.

9.3.2 Sensing and articulating emerging themes

While in planning activities discussed on the previous sections, leaders assume a more active character, in this section I discuss an aspect of the activity of leadership that assumes a more pro-active character. The leadership activity of sensing and articulating emerging themes in CASs is expressed in different ways in the literature. For Stacey and Griffin (2005), leadership as activity emerges from the interaction of leaders with other individuals. The application of their claim to the environment of academic departments indicates that it is in the context of such interactions that leaders can affect organizational change by articulating emerging themes and sense-making the way forward. Similarly, Snowden and Boone (2007) highlight the sense-making character of the activity of leading CASs. This aspect of the activity of leadership demands from leaders awareness of group dynamics and sensitivity to the dynamics of inclusion and exclusion in the process of emergent changes. Stacey (2010) further develops this argument by claiming that leaders that have a positive influence possess the “ability to articulate emerging themes in the ongoing organizational conversation, or to deconstruct and present anew a theme that has become highly repetitive, so as to help the group to take the next conversational step” (p. 215). Snowden and Boone (2007) operationalize this perspective by claiming that leaders can contribute to generate momentum by using approaches to encourage interaction so that new patterns can emerge. Such approaches for change might include opening-up discussions and encouraging dissent and diversity.

The common claim among such authors is that in order to positively affect processes of change, leaders need to sense what is emerging in the department. The word “sensing” demands especial attention in this discussion as it brings different implications than

“analyzing”. Broadly speaking, it can be said “sensing” has a more subjective connotation than “analyzing”. It can also be said that the use of the word “sensing” contrasts more directly than “analyzing” with traditional models of leadership as it implies that leaders as changing agents are interacting as parts of the system instead of designing and manipulating the system from an external position. This is a claim that represents the perceptions of the activity of leading described by the leaders that I interviewed. It is important to observe that interviews in the American department demonstrate clearer indications of this aspect of leadership than in the Norwegian department. In the American department, participants presented more accounts of leaders being perceived as articulating emerging movements. One example of this was the processes of changes in the study plan that was originated by the initiative of one professor who after discussing changes in the research field with colleagues suggested a restructuration of the study plan who gained support across the department. According to the account of professor 1, formal leaders recognized this movement in the department as something positive and articulated in way that it was formalized in the implementation of the strategic plan. This was a case when formal leaders in the American department identified and sensed an emerging movement as a positive change and articulated it. Participants in the Norwegian department did not present any clear account of similar processes in their work environment.

The literature applying complexity theory to the study of organizational change suggests that sensing and articulating emerging themes is an important aspect of the activity of leading. However, as I argue in my concluding chapter, we have to avoid a certain tendency to have a naïve understanding of emerging which seems to assume that everything that emerges is positive. In the two departments where I conducted the empirical part of this study, it was not possible to find more detailed evidences of how leaders articulated emerging topics. Participants in the American department presented some accounts of leaders sensing and articulating positive emerging changes. Therefore, I wonder how leaders in academic departments can react if or when they sense emerging movements as negative processes. At this stage, I have to present self-criticism and recognize that my interview guide did not approach this aspect of leadership of change in any direct way. I regard this as a weakness of this study. The concluding stage of any research always demands a reflection upon about what could have been done differently. As parts of my reflections here is the recognition that the articulation of emerging themes should have been addressed in my interview guide. I

consider this reflection as part of my own learning process that emerged of the experience of conducting this research project and a lesson to be remembered for further studies.

A common argument in multidisciplinary literature about complexity theory is that resilience and sustainable changes in living systems depends on internal diversity (Capra, 1995). This argument has been applied to the study of systems of human organization throughout the claim that diversity is an important organizational advantage towards adaptiveness, change and innovation (Allen, 2006; Pascale, 2006). Therefore, the application of this claim to the context of academic departments implies that leaders can contribute to generate momentum for change and positively influence it by encouraging diversity. From this perspective, change and innovation are more likely to emerge in a culturally and socially diverse faculty than in a homogeneous one. My interpretation of this assertion is that it brings important implications to recruitment in higher education especially because in both departments, participants highlighted the importance of the activity of formal leaders in conducting recruitment processes. Decision-making in relation to recruitment was spontaneously regarded by over half of the participants in both departments as one of main activities through which leaders influence the department. In this sense, leaders expressed differences in terms of criteria for recruitment in the two departments. While in both departments excellence in research was still the main criteria for employment and tenure positions, in the Norwegian department leaders expressed a movement towards an increasing concern with personal aspects and interest in teaching of new academic staff. That was expressed in the following by the department head:

In the old days we used to neglect the social qualities but we don't do it anymore. I see teaching as privilege although some see it just as part of the job. I'm sceptical about people coming to the university just because of research because then you can hire ego trippers which can be negative in many aspects like not being good in cooperation. (Department Head – Norway, 38 years in the department)

Although in the Norwegian department, interest in teaching and personal aspects other than research excellence has become more important factor in recruitment processes, in neither department, academic leaders identified encouraging cultural diversity as an important aspect of their activity.

9.3.3 Management

As discussed in chapter 5, the discussion about differences between leadership and management is a very common topic in the study of organizations. This is because while management is often related to organizational vision and change, management is usually understood as administration, routine and problem-solving (Fineman et al., 2005). As stated in chapter 5, my position in relation to this debate is that although leadership and management have different meanings, the two processes are for many reasons so intertwined that it is usually very difficult, or maybe even impossible, to talk about them separately. When asked to describe more spontaneously their position as head of department, leaders in both departments highlighted managerial activities related with the maintenance of different processes in the department. The same description came when others participants described their perceptions of leadership. For example, professor 1 in the Norwegian department described the activity of his department head in the following way “someone has to the keep the show on the road. Someone has to manage and make sure that things like the next years’ study plan is delivered on time and that different committees function like they should”. Also in the American department, most participants often described the position of their colleagues in formal leadership position as “mainly administrative” (Professor 8). The perception of the presence of people in formal leadership positions was described by almost all participants in both departments as the necessity to have someone who “keeps things running” (Professor 2, American department). This necessity was expressed in terms of two types of activities. First, leaders and virtually all faculty members highlighted the activity of maintaining routine bureaucratic and financial processes in the department which were usually associated with routine. The involvement of individuals in formal leadership positions with tasks related to such processes was commonly mentioned by participants. Second, the involvement with different internal issues and conflicts was also described by virtually all participants. The accounts of events of micro-politics, often in the shape of disagreement and/or conflicts can be considered as fragments of the organizational reality that imply in processes of interaction among different agents. It is important to discuss how leadership involvement with these fragments might constitute into bifurcations points from which novelty may emerge.

In both departments, participants associated organizational growth with an increasing managerial character of the everyday activity of leaders. This scenario was much more evident in the Norwegian department in which most participants described frustration with

what they regarded as an increasing bureaucratization in the department over the years. My interpretation of such accounts is that they highlight both a conflict of ideas and a paradox in relation to the activity of academic leaders in processes of change in academic department. In section 5.6, I presented a discussion about paradoxes in organizational life and a differentiation between paradox (two or more contradicting but equally valid ideas) and conflict (perpetuation of one idea at the expense of others conflicting ones). The contradiction here is that although there is a discourse in higher education system reform policies in most countries that assume that leadership is a decisive aspect of organizational change in universities, the everyday routine of academic leaders has been increasingly characterized by managerial activities which are naturally associated with continuation. However, from a complex perspective this scenario can also be seen as paradox by first recognizing that managerial activities usually based on a principle of continuity in the shape of administration and coordinating organizational activities are indeed necessary in contexts of organizational growth.

On the other hand, as I have assumed in this study that CASs are sets of relationships among people, when leaders in academic departments work with managerial activities, their actions affect the dynamics of interaction among people from which novelty and innovation might emerge. Having that in mind, leaders in academic departments who intend to contribute to generate momentum and positively influence change would have to recognize that when working with managerial tasks, he/she is not an outside actor but a part of a network of non-linear feedback connecting different individuals enabling and constraining each other. Therefore leaders face the challenge of engaging in managerial activities but also generating loops of positive feedback that opens for the exploration of the unknown and the unexpected. It demands that we learn to live in paradoxical reality of organizational life in which stability and change exist at the same time.

9.4 A further reflection on the contribution of complexity theory

In my introductory chapter, I claim to use an approach to discuss departmental leadership and organizational change in higher education that is new in the sense that I apply concepts that are different than the ones applied in previous studies. On chapter 4, I discuss different approaches to organizational change and identify their differences and common points with

complexity theory. Although nonlinearity is recognized to some extent by some of these theories, during my research process I noticed that I needed conceptual tools that addressed emergence as a more essential property of systems of human organization such as academic departments. Although the concept of emergence was in one way or another recognized, most of these theories implied in a certain form of causality that I could not identify in reality, but which I did not have a proper vocabulary to question. In this initial stage, despite the impression that linearity and order were being forced on world in which they were rarely present, I did not have the tools to do more than worry. Hence, by assuming emergence as an ontology, complexity theory provides conceptual tools to explain some already known issues related to leadership and change and locate this explanation in a critical realist agenda and in a broader set of developments in science. In this sense, it is possible to say that the approach that I apply here is new.

One can rightly argue that the two fieldworks that I conducted did not reveal any new fact in terms of leadership and resistance to change teaching in academic departments. However, the decision of using different concepts to analyze the empirical information that I was gathering was in itself an incursion in the unknown in which the results I could not predict. In this sense, one can argue that some of the implications of using complexity theory to discuss organizational change are not new. For example, the claim that an increasing bureaucratization, like in the case of the Norwegian department does not contribute to organizational change is not new and can be observed in other organizational studies (Ramsden, 1998). The same can be said about resistance to change teaching in which individuals tend to behave by patterns in which most often academic taught in the same way in which they were taught when they were students as recognized by some participants. Another central argument here is that policy reforms with an emphasis on efficient and system improvement does not contribute to generate momentum for changes in higher education is also not new (Knight & Trowler, 2000). However, other central arguments of this study are indeed different to the study of organizational leadership in academic departments. I regard that the recognition of paradoxes of organizational life which highlights the limitation of the concepts of distributed leadership and learning organization is a new contribution to the field.

The contribution of this argument has to be understood in the light of critical realism that assume there is reality that is independent of our thinking but our worldviews are essential part of this reality as they inherently shape our understandings of the world around us. I

would like to put this in other terms relating to my own experience as a researcher during the four years into which this study was conducted. During this period, I became familiar with different approaches to organizational change and their applications attempting to explain leadership in different kinds of organizations, among which are higher education institutions and their academic departments facing the challenge to either improve or change teaching practices. In chapters 4 and 5, I discussed some of these approaches: Lewin's linear model for planned change, Weber's theory of charismatic leadership, transformational leadership, distributed leadership and the learning organization. The review of literature highlights that each of these approaches were received with different reactions and main criticism often seemed to imply that "it is more complicated than that". It is indeed this "it is more complicated than that" that complexity theory articulates not as a meta-theory, but as a worldview based on a series of scientific developments that point to the limitations of some of the assumptions upon which previous studies were based. Tee Ng (2011) interestingly describes how one theme that emerged from the discussions as part of school leadership program inspired by complexity theory in Singapore was that participants could see there was something familiar about complexity theory even when they were first exposed to it. Participants shared the feeling that complexity theory presented scientific concepts to better understand what they are already intuitively recognized. This is definitely not to say that previous efforts to investigate leadership in higher education are necessarily wrong or that they are not helpful. But complexity theory contributes by bringing a different dimension to the study of organizations that recognizes that since reality is paradoxical and multifaceted, our understanding of it will be inherently limited. Therefore, I have tried in this research project to use concepts of complexity theory indeed to articulate why in the study of leadership in academic department "things are more complicated (or complex) than that". Complexity addresses and accepts indeed the aspect "not knowing" of organizational reality and conceptualizes it as part of a broad scientific development.

The present study should in no way be seen as a final contribution to the field of organizational changes in higher education, but hopefully the beginning of a process in which its main concepts will be further developed and its implications better understood. As a process, it will certainly encounter its own bifurcations points in which new knowledge relevant to theory, method and practice will hopefully emerge. This is not only about the application of complexity theory to the investigation of leadership in higher education. Complexity theory is in itself a relatively new approach in organizational studies which

implies that its main concepts are still constantly being redefined and operationalized in different ways. Hopefully the articles in part II have contributed to this development by looking at departmental leadership using the lens of complexity theory. One can correctly argue that so far most studies applying complexity theory to the study of organizations have more power in description than in prediction (Snowden, 2002a). This can be explained by recognizing that complexity theory in itself highlights the limitations of predicting a future that is perpetually being reconstructed. However, it is also important to recognize the challenge ahead which is to further elaborate how leaders influence and help to generate momentum for change. In this respect, the reflection about leading academic departments in adaptive rather than adaptable ways that I presented in this chapter is indeed an exploratory one.

9.5 Summary

This is an interpretive chapter in which I reflect upon my empirical findings, the discussion about “edge of chaos” and central arguments of complexity theory such as emergent change and non-linearity to address the following topics: the meaning of adaptiveness in higher education and willingness to change; and leading in adaptive ways in higher education. In the first part, I discussed the differences between adaptiveness from adaptability and its implications for higher education. Adaptiveness in higher education relates to organizational properties that bring the capacity to adapt and actively co-evolve with other systems. The aspect of co-evolution is a main difference between adaptiveness and adaptability. On the second part, I discuss implications of complexity to different aspects of the leadership in academic departments: planning, articulating emerging themes and management. The last part of this chapter presents a further reflection about the contribution of complexity theory to the study of organizational changes in higher education.

10. Conclusion: A Complex Perspective Towards University Leadership

One of the initial assumptions in this study was that we live in a crisis of perception, meaning that changing society towards sustainability is more than a set of reform policies under a currently dominant worldview, but rather a transformative process that can only take place as a process of paradigmatic changes (Sterling, 2003). It is important to reflect on the role of higher education institutions in this process. Universities have always played important roles in society when it comes to the production and the dissemination of knowledge. In recent years, higher education has been assigned an increasingly instrumental character as agents of economic development and competitiveness. On the other hand, it is fair to say that higher education institutions have the potential to play a role as arenas of critical integration of different areas of knowledge and the application of these towards sustainability in overall systems. Thus the discussion on sustainability and higher education seems to have at least two main interconnected dimensions. Higher education institutions can be considered in terms of their potential as changing agents, or they can be considered as organizations that need to be changed internally. These two dimensions are intrinsically connected as it would not be realistic to expect that any organization could play a role as a changing agent in society if its own practice does not mirror such changes. On the other hand, the perception of the challenge to contribute to changes in the surrounding environment would inform a process of reflection on internal changes, and this is a view that agrees with the complex perspective adopted in this study that assumes we investigate organizations as systems nested into other systems.

We are studying organizations as open systems communicating with the overriding systems at the same time that changes impact and are impacted in other spheres. The same can be said about academic departments as systems nested into a broader system, i.e. the overarching university structure. It is important to bear this in mind when we have a management structure in Norway that increasingly assigns leaders of academic departments the role of guaranteeing accountability in relation to broader systems. This is an aspect of changes in public sector governance over the past few decades from highly decentralized structures internally governed in collegial manner to a context of stronger regulation from central governments which set targets and monitor performances against them. This change is associated to an ideology of efficiency, improvement, measurable results and uniformity in practice. It can be said that a cult for performance emerged which in many ways avoided a process of

questioning of purposes of higher education. It is a discourse in which is extremely difficult to argue against this new mode of governance as this is based on a rhetoric of improvement and efficiency that is extremely powerful. As the assumptions on which this rhetoric relies on are so taken for granted, arguing for an alternative thinking is not easy. However, it is possible to critically reflect upon the foundations of this discourse in the light of discussion of the meaning of adaptiveness to higher education that I present in chapter 9. As Biesta (2011) discusses, the rise of the global university reflects a utilitarian discourse in which adaptiveness means trying to adapt to demands of the market, economic realities and the demands from students. The notion of adaptiveness that I have followed here is a different one as it is transformative in its essence. This understanding of adaptiveness emphasizes education as a transformative process as highlighted by Biesta (2011):

Another reason why the educational dynamic is different from the economic dynamic lies in the fact that education is not simply about giving students what they desire but always requires engagement with the question of whether what is desired is *desirable*. Rather than simply servicing needs, it should engage in the critical examination and potential transformation of existing needs, wants, and desires. (p. 43)

This is to a large extent a political question but one that suggests a reflection about the relationships between the university and its surrounding environment. In this sense, a higher education institution or system that adapts to external demands only in order to be “useful” in the frame suggested by political discourses will certainly lose the transformative process of education. Bearing that in mind, the discussion about adaptiveness and adaptability in higher education that I present in the previous chapter is an increasingly relevant one.

10.1 Complex adaptive leadership in higher education

An important issue to reflect on in this present study is: can a leadership configuration that opens for reflection, exploration of the unknown, and deep learning emerge in a context where there is a policy and social environment that demands measurable and sometimes urgent results? Emergence and complexity are intrinsic characteristics of living systems that exist prior and independent of the design of individual and policymakers. However, leaders at different levels and policymakers can have a more positive role when their actions are led by

the recognition of the complex nature of systems of organizations. The contribution of complexity theory is that we need to learn to operate in a world of interdependence and that is always changing in unpredictable ways. Therefore it was not the intention of this study to produce normative solutions or any sort of “guide for change”. Instead, this study has presented a discussion on our conceptual assumptions about leadership by establishing a tension between them with the current challenges related to sustainability and the development of complex thinking. The fundamental rethinking of organizations expressed in terms of the shift from “science of certainty” to the “science of uncertainty” has radical consequences for the way we see causality in organizational life. This is a shift from a formative causality in which autonomous individuals rationally establish goals and design a known future under the assumption that there is a linear relation of causality between actions and results. This view of causality reflects the ontological emergence discussed in chapter 3. The notion of causality presented by the “science of uncertainty” is adaptive and transformative, meaning that the future is at the same time known and unknown as it is perpetually created and recreated with both continuations and ruptures (Stacey, 2010). This way of seeing causality recognizes paradoxes as discussed on chapter 6 and ontological emergence. Although this notion of causality puts limitations on individual choice and ability to design, it still recognizes the influential role of leaders in an organizational life characterized by continuities and transformations in which creation and change emerges.

10.2 Reconceptualizing leadership

During my research process I questioned my theoretical assumptions and now I have an understanding of change leadership that is different from the one I had when this study was initiated. This change in my assumptions is related to both the conceptual and empirical dimensions of this study. By assuming this view of “transformative causality” (Stacey, 2010, p. 58), university leadership that is being urged to change towards sustainability in the context of a globalized world would be reconceptualized in the following ways. First, if we think of leadership as a phenomenon that emerges from our interactions, then leadership in processes of transformative change means interacting in imaginative ways, furthering collaborative enquiry, and opening for reflection and exploration of new meanings. Second, if we think of leadership in terms of policy making and the role of people in formal leadership positions,

then we must understand it in terms of designing the future with intent rather than with control, establishing desired goals, valuing diversity, monitoring results, and assuming corrective action when necessary. This reconceptualization assumes both the complex and adaptive aspect of leadership as a phenomenon and as practice in higher education institutions regarded as nonlinear feedback systems. Leaders must learn to identify socially constructed resistance to change and address process of resistance in a reflective manner. It is important here to encourage opportunities to discuss and reflect on the characteristics of the organization that are perceived as dysfunctional and why tension and resistance are taking place. For Stacey (2010, p. 215) the goal of the leader is “to widen and deepen communication between members of a group exercising skills of conversation that keep opening up the possibility of new meaning rather than closing down on further exploration”. However, it in no way means that the leaders orchestrates and enables complexity in learning-centred organizations. Complexity is always present as the inherent characteristic of the world where we live. Even in dictatorships, people create meaning, local interactions and emergence occurs in ways that cannot be predicted by central powers.

The recognition of complexity demands that we learn new ways of interacting with our world and even unlearn some myths usually taken as established truths. Hence, policies and leaders’ initiatives that attempt to control stability tend to contribute to produce normative actions in which individual creation of meaning and transformative learning becomes ignored. Here, even the collective leadership concept with a discourse of participation and democratic decision-making together with system equilibrium seems to ignore the emergence of creative dynamics in organizations that emerge from diversity and contradiction rather than from uniformity and predictability. By recognizing non-equilibrium, it is important to identify differences that exist in the micro level of local interactions. The reflection on these differences brings new insights into how dynamic and transformative organizational structures can emerge.

In chapter 4, I presented a critical review of the literature about leadership change and discussed an alternative view based on emergence and complexity theory. It is important to reflect upon the novelty of complexity theory in relation to other approaches to leadership and change in organizations such as higher education institutions as discussed on chapter 9. The empirical findings in articles II and II did not reveal any unknown fact. The perceptions of leadership presented by participants could be related to the typology of leadership and

organizational cultures in higher education suggested by McNay (1995). The perceptions of leadership and teaching described by participants largely illustrate the challenges related to change leadership in academic departments addressed by the literature that I review mainly in section 4.2. It is also possible to say that some of the aspects of complex adaptive leadership in higher education such as sensing, articulating, opening for reflection and exploration of the unknown are not new. For instance, the importance of opening for reflection as an aspect of leading academic department in adaptive ways was already mentioned by Ramsden (1998a; 1998b). However, when locate this and other claims and interpret these in the light of a broader scientific development which is complexity theory and a critical realist agenda with its ontological and epistemological implications, we gain new conceptual tools that questions dominant discourses in organizational thought in higher education.

Local differences and internal diversity are seen as important aspects of changes in CASs. Bearing that in mind, instead of striving for conformity and instability, the leader might be the one bringing new and surprising perspectives both articulating what emerges from people's interactions and sometimes surprising by saying things that might be different from what some would have expected from him or her. Rather than trying to consolidate some "shared meaning", leaders can spontaneously contribute to changes by expressing different perspectives based on or her/his own reflective processes. This is expressed by Stacey (2010) as:

here, spontaneity does not mean impulsiveness but rather acting imaginatively, and this involves reflection. Reflection can be understood as a paradox of immersing in and abstracting from experience. Spontaneity then means the capacity to act in a wider range of ways, taking risks and often surprising oneself and others. Such a capacity must be particularly valuable when it comes to acting into the unknown. (p. 216).

On chapter 2, I used Ahern's (2011) reflection on a shift in management from a *fail-safe* to a *safe-to-fail* mentality in a world striving for sustainability. Although this article primarily discusses recent changes in urban planning, its main argument is very pertinent to the present discussion about leadership in higher education. Benchmarking and quality assurance mechanisms in education and the search for identifiable characteristics in the behaviour of individual leaders seem to imply a static conception in which successful procedures once achieved can be envisioned as stable and durable in a context of system equilibrium.

However, innovative practices always involve facing the unknown in learning processes in which failures are inevitable. Having that in mind, rather than trying to remove uncertainty, it is important to recognize failures as inherent parts of learning processes and change in organizations. As Ahern (2011, p. 341) claims, it means “addressing uncertainty and ‘learn-by-doing’ through the conception and design of management actions as ‘experimental probes’ that could ‘adapt’ if the results were not as expected, or to learn new methods when the actions were proven to be effective”. Snowden (2002b, p. 106) goes in the same direction when he describes decision-making processes in complex environments as “probe, sense, respond” which is differently from “sense and respond” in complicated environments and “categorize and respond” in contexts of simplicity. This consideration is extremely relevant in a time when political discourses emphasize mechanisms of accountability and uniformity that often restrict the space for risk-taking.

The main ambition of this study is to contribute to the discussion on leadership in higher education institutions in Norway. The quantitative, linear rationality of quality enhancement and management present in reform policies and programs starkly contrasts with the range of qualitative emergent processes that I analyzed in this study. However, although both my theoretical framework and empirical findings challenge the assumptions and views of quality and efficiency on which policy reform has been based in Norway, they do not constitute a defense of the traditional collegial model of leadership in higher education. Although this model was identified as both the outcome and a source of what was identified as organizational success in the American department, it is difficult to predict what the response would have been if it had been challenged by the same external demands that public institutions in Europe have faced. It is also important here to avoid a romantic view marked by golden ageism and nostalgia for this model. For instance, Morley (2003) discusses how the word collegiality can mask conservative power relations and manipulative processes associated with professional (and often individual) self-regulation that often impede discussions on race, gender, class, and disability in the history of higher education institutions. The resistance to change illustrated by accounts of mechanisms of “arts of resistance” mainly in the Norwegian department are discussed in chapter 9. So rather than a defense of the past, the reflections on concepts and empirical findings in this study highlighted the necessity of thinking about university leadership in a way that is different both from the past and from dominant policy discourses. In this sense the notion of complexity requires new and imaginative ways of thinking about leadership in institutions that are being

challenged to contribute to a global change towards sustainability. It is radically different from assuming or advocating a romantic view of collegiality in academic departments as a system of behavior characterized by professional cooperation in a harmonic environment of stability and equilibrium.

As presented in chapter 1, the discussion about leadership in higher education in Western countries has so far been characterized by different arguments that can be located in a spectrum between two extreme positions. On one extreme, we have those advocating a “top-down” perspective expressed in terms of importing management procedures that are usually associated with private enterprises identified as models of organizational success in competitive markets. On the other extreme, we find the defendants of a “bottom-up” organizational model claiming for collective leadership usually emphasizing arguments pro participation and empowerment. From the first position, there is the assumption that leaders direct organizations primarily through their own values and projects, and thereby define objectives and promote a shared vision. In the case of higher education, that would mean that centralized management structures and departments leaders accountable to the overall university structure have the capacity to externally design and control outcomes. The second position assume that organized groups can be empowered and cooperatively define organizational mission, values and goals. For higher education, that would mean the assumption that universities are better led as autonomous collectivities in which group thinking is the key to organizational success. The first tends to idealize the figure of individual leaders and see a relation between her/his attitudes and organizational outcomes in terms of cause-effect. The second tends to ignore the conflictual aspect of social and organizational life. And the emphasis on group thinking tends sometimes to ignore the importance of individuality and difference to an extent in which conservatism and intolerance to new ideas can emerge. It is also important to notice that this discourse is usually translated in practice in terms of centrally planned delegation of power down the formal power structure of hierarchy in the higher education institution (Bolden et al., 2007).

The discussion between “top-down” and “bottom-up” configurations of power has long been present in organizational studies and not only in the study of organizational change in higher education. As Johannessen (2009) suggests, from both extreme positions at this spectrum the conflictual and paradoxical aspect of organizational life tend to be overshadowed. Therefore throughout this study I have suggested an approach that is different from those advocating

either a “top-down” or a “bottom-up” set of prescriptions. At the end, leadership is always a contextual phenomenon. A lesson that can be taken here is that there is no single and unified way of leading that can be generalized to every educational context. Policymakers and leaders at every level of the organizational structure have to learn to operate in context or unpredictability recognizing that they are not in control. Some authors have suggested there is a need to rethink leadership in terms of an *activity* instead of a *role* as the mainstream management literature does (Sims, 2010). This claim represents a shift towards a stronger focus from a temporal perspective in organizational thought rather than only a spatial one as discussed in chapters 3, 4, 8 and 9.

This temporal dimension and my reflection about the concept of “edge of chaos” embedded my interpretation of empirical findings. The interpretation of the concept that I suggest based on the literature contrasts with dominant perspectives to organizational change. As discussed on chapter 4, the classical Weberian perspective sees changes in terms of transitions from one state of equilibrium to another. On the other hand, early system thinkers assume that leaders can effectively move organizations from state of certainty to a state of uncertainty from which novelty emerges (Stacey, 1996, 2010). My interpretation of empirical findings based on my understanding of the conceptual discussion about “edge of chaos” is different from such perspectives. Therefore the interpretation in chapter 9 discussed different clusters of activities of department leaders and how these are related to the exploration of the unknown, learning and change in higher education: planning, articulating emerging themes and management. Although being an important one, leadership is not the only factor of organizational change. However, complexity theory in itself does not provide solutions but a reflection about how academic departments should be led in adaptive ways should take into account such clusters of activities on which departments operate on the edge of chaos.

Other authors following this interpretation of “edge of chaos” have argued that we have to focus on the actual process of *organizing* as opposed to an often rigid and pre-defined spatial notion of *organization* (Luoma et al., 2011; Stacey et al., 2000). Behind these claims, there is the recognition that we need to address the processual aspect of organizational life recognizing the dimensions of the unknown and the unpredictable. Here, both stability and change are emerging from a complex net of interactions that we never fully grasp. This is probably what good examples of leaders in different sectors are already doing. However, this is starkly different and contrary to dominant discourses in the context of higher education

reform policies in Europe during the last two decades which are still based on a mechanistic worldview.

10.3 Reflections on the research process and questions for further study

Different theories within complexity theory have been applied to the study of organizations. Although departing from common assumptions regarding the limitations of previous schools of thought in organizational studies, these theories apply main concepts of complexity theory in different ways. The main aspect of disagreement between these is regarding the use of abstract concepts such as systems to understand human organization. Defendants of the complex responsive processes perspective advocate that the use of imaginative wholes as systems do not contribute to the understanding of continuities and change in patterns of behavior. However, the theoretical framework that was used here tried to focus on what these different schools have in common rather than strictly following one of them and excluding the other. In other words, I have claimed here that the systems perspective and complex responsive process are complimentary approaches rather than mutually exclusive. As I discussed in chapter 3, abstract imaginative wholes like systems are important as their emergence is an important aspects of whole people construct their identities. Imaginative constructs are always related not only to our identity but to the destruction of old and emergence of new ideologies. Furthermore, as discussed in chapter 5, it is possible to talk about systems in a different way as those identified by Stacey and his colleagues (Stacey, Griffin, & Shaw, 2000) as dominant management thinking in which systems are seeing as thing-like entities that can be designed and controlled by an external manager. Instead, the view of systems that I applied here highlights the paradoxical nature of organizational life and of leadership as emphasized by the complex responsive processes approach. Bearing that in mind, my own research approach by recognizing system as an imaginative construct and also focusing on emergence becomes a paradoxical one. It is paradoxical in the sense that it *both* recognizes our abstract constructions or reality *and* immerses on perceptions and interrelating.

This above-discussed notion of adaptive and transformative causality is in accordance with the second-order complexity (Tsoukas & Hatch, 2006) that guided the choice of methods in this study. However, as a research project reaches its concluding stage, it is normal that the

researcher reflects on what can be learned from the research process itself. In this sense the activity of the leader and the activity of the researcher have some common aspects. Both have to be reflective and open to learning under unexpected conditions and with unexpected factors that appear as the research unfolds. It can be said that both activities are characterized by complexity, adaptiveness and at least some degree of unpredictability. It is part of the process that, as the researcher deepens his/her understanding of the theoretical framework employed and is confronted with new and unexpected data, initial assumptions are challenged and research questions are reformulated. Bearing this in mind, building knowledge out of a research process is a nonlinear process. This is clear to me when I assess how my own understanding of organizational reality changed during the past four years from an initial concern with organizational effectiveness to the realization that a transformative, complex perspective towards change was a more promising track to follow. Conducting research is always a process of making sense of one's own experience and worldview. In many ways the fourth article is a good representation of how my understanding of leadership and organizational change in higher education changed during this period.

I discuss the organizational culture typology presented by McNay (1995) and discuss the context surrounding the two departments in articles II and III. However, the empirical studies in the two departments did not result in a full, accurate and elegant description of what these systems are in terms of culture and context. I understand that the lack of a more holistic dimension might be seen as a weakness of this study but on the other hand it was not the goal here to present fully constructed descriptions of what these CASs are. The objective was rather to work with fragments of organizational reality presented in the shape of perceptions of participants and understand the messages emerging from them. It is obviously not the only way of conducting qualitative organizational research but it certainly one that resonates with the ontological emergence that I discussed on chapter 4. As researchers, we do not always need to present the "full picture" and/or look for generalizable explanations but learning to interpret fragments and what they tell about emergence of new patterns of behavior is a totally valid approach. There are different reasons for that and among which is the recognition that it is not the goal here to present generalizable solutions. As strong emergence focuses on processes of movement over time and assumes that we live in a world of constant change (and stability), instead of only formulating general explanations and testing them in different contexts, it is at least as valid to interpret what emerges from the uncertainty of our interrelations that are always in a temporal perspective and not only temporal.

The empirical articles explored personal experiences and accounts of personal experiences of human relations and thus articulated emerging themes relating to these. Although I believe that the qualitative method and the phenomenological data gathering strategy that I applied in the two empirical sections of this study were in accordance with my theoretical framework, I now find that the fact that I did not conduct observations was a limitation in this study. The personal accounts of how people experienced leadership and teaching in their working environment provided extremely relevant data that were analyzed in the light of concepts of complexity theory. However, since my theoretical assumptions highlight the importance of local level interactions, such as where new patterns of behavior emerge, observing situations when people meet and interact with each other would have provided the opportunity to gain another type of insight into how people articulate the experience of being together in an organization. At this stage, I realize that the observational data could have deepened my understanding of how these interactions take place and provide another insight on how learning happens in academic department.

Be that as it may, I consider the reflection on the limitations of the method and the strategy adopted as an important part of the learning experience to be gained from conducting research. Furthermore, new and more complex research questions emerge. Therefore, below I suggest two topics related to complex change in higher education institutions to be investigated further.

10.3.1 Diversity

Studies on ecosystems have argued that the complexity of a network is related to its biodiversity and that therefore a diversified ecological community tends to be a resilient one (Capra, 1996). In terms of human organization, cultural diversity may have the same impact as it implies more varied relationships and more perspectives playing out together. Some management studies have pointed to the business case of diversity. Some scholars, as well as many policymakers, share the assumption that diversified organizations are more likely to have the resources to cope with unpredicted events. According to Schein (2004, p. 401) diversity creates subcultures that eventually will be a necessary resource for learning and

innovation. It is argued that a diversified community is more capable of learning and adapting to changing situations. Stacey (2010) goes as far as to claim that there can be no emergence of new patterns of behavior without differences in people. For him, this constitutes another criticism of the dominant management discourse that highlights harmony and system stability. However, for diversity to be a resource, the subcultures must be connected and open to learning with and from each other. The business case for diversity in higher education is one that needs to be studied further, as along with its relation to leadership. That is a relevant topic of study in the Norwegian context of an increasingly multicultural society and a higher education that has gradually become more international both in terms of student body and staff. One could, for example, investigate how/if leadership as a phenomenon embeds and/or is embedded by diversity.

10.3.2 Ethics

The fourth article suggests that ethics in the context of work relations in higher education institutions would be an interesting topic for further studies. Most studies into departmental leadership referenced to in the fourth article have in some way touched upon ethics as an important part of how leadership is perceived. But these studies did not delve any deeper into this discussion in any other way than to claim that leaders are more effective when their behavior is perceived as ethical by other agents. I do not question this assertion but I think that it is important to discuss what ethics means in a complex world. Griffin (2005) takes his point of departure from the complex responsive process perspective that conceptualizes organizations as processes of communication and joint action far from equilibrium. For him, this perspective challenges the traditional view of ethics as a set of universally moral principles independent of social and natural contingencies. Some authors as Fialho and Coelho (2002) investigating human organization as CASs argue that transformative change can only be perceived as transformative when it takes place in an ethical way. Bai (2003) also claims that an ethical paradigm compatible with complexity theory necessarily challenges this view of ethics based on system stability and consensus. As a consequence, it questions a monolithic view of ethics in which individual leaders rationally choose goals and take decisions according to these goals independent of contingencies. Griffin (2005) and Stacey (2010) take a similar approach by claiming that leadership is essentially about ethics and that

ethical values emerge, as well as learning, from the same interactions from which leadership emerges. Discussing ethics – and moreover what is unethical – also has the potential of avoiding a romantic and idealized view of emergence that is present in some writings about complex change in organizations. Therefore I think that exploring the dynamics of interaction from which ethical values emerge is an extremely interesting issue to be investigated by those interested in understanding organizational change in higher education institutions.

10.2 Concluding remarks

The main contribution of this study is a reconceptualization of how we think about university leadership in the context of human organizations being confronted with sophisticated sustainability issues. The critical transition towards sustainability and deep learning that global transformations require indicates that dominant mindsets and theoretical assumptions in leadership and management need to be overcome. The main implication of such paradigmatic changes for the study of leadership in academic departments implies moving from an instrumental focus on identifying leadership characteristics associated with either efficiency or effectiveness towards an analytical focus on understanding how transformative learning takes place in academic environments. Much of the discussion on deep learning in higher education seems to be related to the position of students as learners. However, transformative changes will require deep learning not only from students but also from different members of the community of learners that higher education institutions aim to be. The science of complexity has provided new conceptual tools that might not in the initial stages lead to practical solutions to existing problems. For some, it might even be frustrating that studies into complexity theory in organizations have not attempted to present any sort of guidelines for leadership practice. For others, recognizing our inability to predict and control what results from the interplay of our own interactions might even seem very depressing. For me, recognizing the complex interaction of our identities that is perpetually reconstructing our future seems extremely promising and exciting as it resonates much more with our organizational reality. In this sense nothing could be more transformative than challenging our own assumptions by reflecting upon the emergence of new patterns of behavior in the context of our own interactions.

In recognizing complexity as an inherent characteristic of social systems such as academic departments, we are assuming that it is not something that cannot be engineered or designed. It is a given property of CASs rather than something that can be programmed or enhanced. However, a leadership practice that recognizes complexity will hopefully highlight the importance of positive feedback loops and deep learning rather than closing for further exploration. The idea of leadership is often associated with vision by looking into the future and establishing goals. However, vision in the context of complex change will also mean looking inside in a reflective way. This is a paradoxical process in which reflecting upon and understanding how the reality of our interactions might pave the way to deep learning, innovative thinking and thus the novelty that transformations require. Hopefully this is a perspective that will help us to find new alternatives for higher education institutions in a paradoxical context of changing internally and at the same time contributing for social and global change.

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Part 2: Articles

Article I: A discussion about power relations and the concept of distributed leadership in higher education institutions

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Abstract

In an era when accountability, i.e., the requirement to demonstrate responsible actions to external stakeholders, has become a buzzword, universities are being challenged to be more autonomously responsive to an increasingly unpredictable environment. In this context of increasing pressure to deliver high quality teaching and research, the need for “good leadership” has been emphasized as strategically decisive within the sector. Nevertheless, the structure and character of higher education institutions have historically not given space for top-down leadership which is usually associated with managerialism. The concept of distributed leadership has been suggested as a response to new challenges posed towards higher education institutions based on the understanding that more hierarchical leadership practices are not well suited to global complexity and change. In academic environments, the idea of collegiality is strongly-rooted assuming a “first among equals” approach to leadership where authority of professional expertise, self regulation, academic freedom and autonomy are more present than positional power. As a recognition of both the challenges faced by higher education institutions in the globalized world, and of perceptions of leadership that have historically characterized universities, the concept of distributed leadership has been presented as a framework for understanding leadership and change in higher education. The central assumption of this concept is that, instead of being a unilateral activity of one single individual in a formal management position, leadership is the result of relatively complex interactions of activities of many individuals in one organization. I discuss here the descriptive and analytical potential of the concept of distributed leadership in order to understand changes in leadership practices in higher education institutions, with a special focus on academic departments in research-intensive universities. The main argument here is that with the emphasis on participation and mutual influence, the distributed concept has many common features with the traditional collegial model of leadership in higher education. However, the lack of focus on internal dynamics of power relations still seems to be a limitation of this concept.

Keywords: higher Education Leadership, management, organizational change, collegiality, distributed leadership

1. Introduction

This article discusses leadership in processes of organizational change in higher education institutions. The debate about policy reform in higher education institutions in Western countries is characterized by the assumption that leadership is a decisive factor in organizational change in educational institutions (Bleiklie, 2005; Gibbs, Knapper, & Piccinin, 2009; Shattock, 2003; Simkins, 2005). However, rather than trying to identify “what works”, my goal here is to understand important aspects of leadership by discussing it in relation to complexities of organizational life in higher education. Factors such as changing funding patterns linked with pressures to diversify higher education institution’s funding base, competition, internationalization as well as continuing demands to deliver outstanding teaching and research, have been identified by policy-makers as a context where leadership is a determinant aspect of higher education organizations. Nevertheless, the structure and character of higher education institutions have historically not given space for top-down leadership which is usually associated with managerialism. In academic environments, the idea of collegiality is strongly-rooted assuming a “first among equals” approach to leadership where authority of professional expertise, self regulation, academic freedom and autonomy are more present than positional power. Partly as recognition of both the challenges faced by higher education institutions in the globalized world, and of perceptions of leadership that have historically characterized universities, the concept of distributed leadership has been presented as a framework for understanding leadership and change in higher education (Bolden, Petrov, & Gosling, 2009). My goal here is to discuss this concept and its potential in making sense of current organizational changes in educational organizations. This article’s rationale proceeds in reviewing traditional and emerging approaches to leadership and narrowing down this discussion to the specific case of higher education. Leadership and institutional change will be discussed with a focus on departmental leadership and power relations in universities. I build upon Simkins’ (2005, p. 9) proposition that in the leadership debate “making sense of things” is at least as important as “seeking what works”. The main argument here is that although distributed leadership has a discourse of collective

participation and democracy, it is embedded in a context of change in power relations in higher education. I begin by demonstrating how the very concept of leadership is a contested one in the field of organizational studies.

2. Definitions and approaches to leadership

I discuss in this section a shift in focus on approaches to leadership. However, this shift has not always been a linear process as a review of the leadership literature shows an evolving series of schools of thought that not necessarily resolved the questions raised by precedent schools but moved the discussion and attempted to address different aspects of leadership (Bryman, Gillingwater, & MacGuinness, 1996). Grint (2005) presents characteristics of leadership theory that make it difficult to reach a common definition of leadership. First, there is a lack of common understanding whether leadership derives from personal qualities of the leader or whether a leader facilitates followership through what he or she does. Second there is the discussion about position, i.e., whether leadership derives from formally allocated authority leader or from formal influence. Thirdly, there is no agreement on whether the leader exerts an intentional causal impact on follower's actions or their actions are determined by context or situation. As Yukl (2002, p. 3) suggests, most definitions of leadership put emphasis on the possibility of leadership by groups and by individuals and the role of leadership in structuring activities. Most definitions of leadership assume that there is a social influence process whereby intentional influence is exerted by one individual or a group, over other people. This process shapes the activities and relationships in a group or organization. There are also leadership definitions that focus more specifically on creative aspects of organizations and less on power relations. One example of that is the definition presented by Fineman, Sims & Yannis (2005, p. 85): "leadership is imagining, willing and driving and thereby making something happen which was not going to happen otherwise". A brief review of the literature about leadership theory shows how these questions have historically been addressed in different ways. This review shows a process of shift in emphasis from individual leaders attributes to the perception of leadership as a property of social systems.

The *Trait Theory* approach that was dominant until the 1940s was concerned in identifying characteristics of successful leaders assumed that leadership traits could be isolated and people with such characteristics could be selected and placed in leadership positions. This

approach showed limitations as it became evident that no consistent traits could be identified and most research based on this theory were often inconclusive (Bolden, Petrov, & Dennison, 2003). As limitations of the Trait Theory were recognized, the *Behavioral School* moved the focus from leaders' personal qualities to what leaders actually do and increased awareness with leadership development (Azevedo, 2002). This approach to leadership which has attracted most attention from practising managers aimed at observing and categorizing leadership styles (Bolden et al., 2003). Although behavioral theories have played a role in helping managers to develop particular leadership behavior, it showed limited results in showing what constitutes effective leadership in dissimilar contexts. Thus, *Contingency School* in the 1960s rose from the understanding that no leadership style is appropriate for every individual leader in every situation: "instead, contingency-situational theories were developed to indicate that the style to be used is contingent upon such factors as the situation, the people, the task, the organization and other environmental variables" (Bolden et al., 2003, p. 8).

The leadership approaches discussed so far described the leader as a directive figure whose personal traits or actions differentiates him or her from the rest of the people. However, since the 1980s, leadership research has moved its focus towards the importance of leaders' relationship with followers and interdependency of roles: "no longer the hero or the solo leader but the team leader. Not the leader always out in front but the leader who has capacity to follow. Not the master, but the servant" (Bolden et al., 2003). This change in focus was accompanied by a stronger concern with the symbolic or institutional feature of organizations and leaders' role in the process of consolidation of shared values (Bryman et al., 1996). In this approach, the leader defines the organizational reality through a process of articulation of his vision and his sense of mission of the organization. The concept of *transformational leadership*, which is part of this approach, highlighted change and the role of leadership in envisioning and implementing transformation. Another central concept here is *transactional leadership* that puts emphasis on the relationship between leaders and followers focusing on a form of contract by which leaders reward and recognize in return for commitment or loyalty (Bolden et al., 2003). Together these perspectives emphasize the leader's role in embedding their organizations with a shared vision, empower others and promote high levels of commitment. The transactional and transformational perspectives certainly helped to produce a fairly large literature with a prescriptive and instrumental character to managers. Research conducted based on this approach to leadership focused primarily on the role of top managers

and has been criticized for presenting often a heroic and visionary image and focusing almost exclusively on stories of success (Azevedo, 2002). Distributed leadership is a new perspective that rose as a reaction to this charismatic and heroic vision by claiming for a less formalized model of leadership where the leader's role has to be seen beyond lines of organizational hierarchy.

3. Distributed leadership

Recent literature about the role of leadership in educational institutions claims that the idea of leadership as being context-related and dispersed among people represents a more constructive framework to understand such organizations. This claim assumes that the hope that transformation in educational universities is directed by outstanding visionary leaders have turned out to be unrealistic and unsustainable (Timperley, 2005). The concept of distributed leadership has been suggested in connection with a shift in paradigms in the study of leadership in organizational theory. Distributed leadership derives from the emerging view of leadership that contrasts with the traditional concept of leadership as described by Simkins (2005, p. 12):

Table 1

An emerging view of leadership

The traditional view of leadership	An emerging view
Leadership resides in individuals	Leadership is a property of social systems
Leadership is hierarchically based and linked to the office	Leadership can occur anywhere
Leadership occurs when leaders do things to followers	Leadership is a complex process of mutual influence
Leadership is different from and more important than management	The leadership management/ distinction is unhelpful
Leaders are different	Anyone can be a leader
Leaders make a crucial difference to organizational performance	Leadership is one of many factors that may influence organizational performance
Effective leadership is generalizable	The context of leadership is crucial

The conceptual distinction and/or separation between leadership and management has been a disputed topic in the debate about emergent views of leadership. My option is to regard leadership and management as conceptually different but also as interconnected. Initially, I accept the differentiation presented by Fineman et al. (2005, p. 86): “sometimes these two activities are not distinguishable, but leadership implies generating something, which management does not. Managing implies a position which gives you the legitimate right to work through others, which leading does not”. However, studies about changing leadership in higher education institutions have demonstrated that this distinction is not easily observed and that leadership and management are intersected processes (Gibbs et al., 2009). Thus, I opt here to regard leadership and management as different but complementary process which gives space to use both concepts in a swapping way and admitting the existence of blurred zones between these.

The distributed leadership approach has its origin more in the fields of sociology and political science than in more long-established management literature and focus on organizational culture and change to highlight the contextual nature of leadership. The concept has the collective as its main concern and moves from the analysis and development of individual leader qualities to an investigation of what constitutes appropriate leadership and leadership processes. However, distributed leadership does not deny the importance of the role of individuals in formal leadership positions but assumes that it is part of the issue rather than being the central unit of analysis. This approach that has also been referred to as “dispersed”, “shared” or “collective” leadership argues that individuals at different levels of the organization can influence colleagues and the overall course of the organization. Although there are variations on the how distributed leadership is defined, it is possible to identify some main premises (Bennett, Wise, Woods, & Harvey, 2003):

1. *Emerging property of a group or network of interacting individuals*: this contrasts with the traditional view that assumes that leadership rises from the individual
2. *Openness of the boundaries of leadership*: it widens up the conventional group of leaders, therefore raising the question of what groups or individuals contribute to leadership

3. *Varieties of expertise are distributed across the many, not the few*: it is related with openness of the boundaries, it assumes that different capabilities and perspectives can be found in individuals in the organization.

According to Simkins (2005, p. 17), the main limitation of the traditional model when applied to higher education institutions is that “it gives undue emphasis to the formal authority delegated from above on the basis of position, whereas the authority in professional organizations typically depends on a much more complex range of factors, not least perceptions held by professional colleagues of the expertise and performance exhibited by those holding the roles”. Hence, the concept offers strongly representation of leadership tailored to complex, changing and inter-dependent environments. However, two questions remain and permeate this study. First, although distributed leadership presents a compelling post-heroic view of leadership, to what extent is it really attainable in practice? Second, what is the contribution of distributed leadership for the understanding of organizational changes in higher education institutions? Thus, we move the discussion now towards universities’ changing structures and systems.

4. Transformations in higher education

Organizational changes in higher education have occurred primarily as reactions to changes in the environments rather than by internal motivations. As Bargh, Scott, and Smith (1996) claim, university leadership and management are linked with state-university relations. Competition, internationalization and quality assurance also play a role here. However, there are differences in the ways universities respond to changes in the surrounding environment as an assessment of the literature suggests a range of organizational cultures. One reason for this variation is related with a set of factors dealing with organizational identity such as institution’s age, size, disciplinary mix and physical location. It is also fair to expect that the balance between teaching and research that differs among institutions affect their organizational structures. The first temptation to those formulating or trying to understand universities policy seems to be to identify examples of success and consistent organizational patterns among them. However, there is still relatively little research into academic

organizations which succeed in clearly identifying transferable successful strategies. As Shattock (2003, p. 68) notices, it is rare that organizational change in higher education is driven by educational ideas rather than fashionable ideas deriving from the industry and the public sector or coherent thought about organizational fit. As the same author describes, organizational change has been to a large extent based on untested ideas about management. During the last two decades in most Western countries, pressures exerted with the stagnation of public resources led to organization change in higher education institutions being associated with strategies aiming at securing accountability, best allocating resources, controlling costs and eliminating deficits.

Here, McNay's model of internal culture embedded in four different quadrants is used to understand different styles of policy definition and control of implementation. The conceptual framework of McNay (1995) distinguishes four organizational types that vary on two dimensions: the degree of definition of policy and the degree of control of implementation. *Collegial cultures* are characterized by freedom to pursue university and personal goals unaffected by external control. Standards are set by the international disciplinary scholarly community and evaluation is by peer review. Decision-making is consensual, management style permissive (Gibbs, Knapper, & Piccinin, 2007). Leadership assumes here a "first among equals" style and authority of professional power is more present than authority based on positional power. Academic autonomy and self-regulations are among fundamental principles here. Decision-making usually takes place in the form of consensual processes including debates and discussion within university committees. In collegial culture, organizational change is expected to happen as a result of a process of discussion among institutional actors in professional networks (Miller, 1995) *Bureaucratic cultures* are characterized by regulation, rules, and consistency with standards related to regulatory bodies and external references such as institutional quality assurance procedures. Evaluation is based on the audit of procedures. Decision making is rule-based (Gibbs et al., 2007). It is expected to work well in stable and centrally controlled organizations but can make a university resistant to change (Bolden et al 2007). *Corporate cultures* are characterized by an emphasis on loyalty to the department and its management. Management style is commanding and charismatic. There is a crisis-driven, competitive ethos. Decision-making is political and tactical. Evaluation is based on performance indicators and benchmarking (Gibbs et al., 2007). Organizational culture is marked by the authority of the chief executive (the university Vice-Chancellor or President) and rigid institutional management and planning combined with devolution of responsibilities

to the lower levels. Corporate culture is usually associated with transformational leadership and promotion of a collective identity (Bolden et al., 2007) *Entrepreneurial cultures* are characterized by a focus on competence and an orientation to the outside world, involving continuous learning in a turbulent context. The management style involves devolved and dispersed leadership. Decision-making is flexible and emphasizes accountable professional expertise. Its standards are related to market strength. Evaluation is based on achievement (Gibbs et al., 2007). The focus here is on institutional change, adaptation and interaction with the environment (Bolden et al., 2007, p.12).

It is important to remind here that these classifications are ideal types, i.e., models to which we compare reality but that do not necessarily correspond entirely to the reality. No university corresponds fully and exclusively to any of these models as these organizational cultures co-exist in most institutions but with different balances among them (McNay, 1995). However, many studies of the shift over time from one organizational culture to another have identified the same sequence: from collegial to bureaucratic to corporate and finally to enterprise, involving first a tightening up on implementation, then a tightening up on goals and policy definition and finally a loosening up on control of implementation while retaining clear goals. It is important to have in mind here that, as an ideal model the present approach might incur in an oversimplification of the process of organizational change as there are different perceptions of these changes by different individuals within them.

Traditional collegial organizational structures and cultures, that are common in long-established, and sometimes medieval, research-intensive universities exhibit loose definition of policy and loose control over implementation, while enterprise cultures exhibit tight definition of policy and loose definition of implementation. Collective leadership is here thus identified with entrepreneurialism. Parston (1998) defines the process of entrepreneurialism as managerial behavior which consistently exploits opportunities to deliver results beyond one's capabilities. Similarly, Thompson (1999) argues that entrepreneurialism is about spotting and exploiting opportunities. According to this perspective an entrepreneur individual or an entrepreneur organization is one with a vision, who spots a new opportunity and is minded to act on it and start something. Slaughter and Leslie (1997) present an operational definition of entrepreneurial activities in higher education institutions as "activities undertaken with the view to capitalizing on university research or academic expertise through contracts or grants with business or with governmental agencies seeking

solutions to specific public or commercial concerns”. Although this operational definition seems to be an important tool to identify some of the entrepreneurial activities developed by university units, it is not sufficient to understand broad institutional changes. Moreover, Clark (1998) applies the concept of entrepreneurialism as characteristic of social systems, i.e., of entire universities and their internal departments, research centers and schools. According to his definition, an entrepreneurial university “actively seeks to innovate in how it goes about its business. It seeks to work out a substantial shift in organizational character so as to arrive at a more promising posture for the future (...) Institutional entrepreneurship can be seen as both process and outcome” (Clark, 1998, p. 4). In this process whose outcomes are unknown, risk is allegedly always a major factor. Distributed leadership has thus been presented as a response to uncertainty as it is expected to provide higher education institutions with the organizational capacity to operate in a constantly changing environment. The view of leadership that is being presented is intrinsically an instrumental one.

Different interpretations of changes in higher education illustrate that different organizational cultures are not necessarily mutually exclusive (Bolden et al., 2007; Shattock, 2003). Aspects of collegial, managerial and corporate decision-making may often be co-present and accommodated with entrepreneurial principles. However, the promotion of distributed leadership is more part of the set of organizational values of the entrepreneurial model than of other models. It is important to discuss here collegiality in the light of distributed leadership and entrepreneurialism in higher education.

5. Collegiality

The strengthening of professional managerial expertise in universities leads to a discussion about the role of collegiality in the new university. A more succinct definition of collegiality states that it is a principle of professional self-regulation (Dill, 1995). Part of the literature about higher education presents a discourse of nostalgia and golden ageism by describing that current arrangements for quality assurance are in opposition to traditional collegiate practices for managing academies (Morley, 2003, p.107). Some authors understand that current changes in management practices in higher education have resulted in a process of “loss of collegiality”. In the year 2000, when distributed leadership had not yet become a fashionable term and the discussion about changes in higher education was focused on the dangers of

managerialism, Knight and Trowler (2000, p. 72) described processes of loss of collegiality marked by less time to socialize due to “hard managerialism”. Hargreaves (1994) describes the rise of a contrived collegiality which is defined as administratively regulated, compulsory, fixed in time and space and predictable. However, other authors suggest a redefinition of collegiality in the modern university. Middlehurst (1993) argues that collegiality in the new university should be reconceptualized as the sharing of information, ideas and tasks. Clark (2001) presents a broader reconceptualization of collegiality in modern higher education as the co-participation of academics and managers in decision-making towards a mixture of collegial and bureaucratic managerial cultural. Thus, collegiality appears to be interrelated with bureaucracy and not longer disconnected with the organizational hierarchies of the entrepreneurial university. As this perspective integrates universities with wider public policy reforms, collegiality is no longer seen as defensive ideology against change, but as one that reinforces change (Bolden et al., 2007, p. 14). The university in this model is allegedly one innovative and able to respond to change and to adapt to external demands. This model emphasizes the role of academic units as sources of innovations:

for change to take hold, one department after another needs itself to become an entrepreneurial unit, reaching more strongly to the outside with new programs and relationships and promoting third-streams income. Their members need to participate in a managerial line that stretches from central officials to heads of departments and research centers (Clark, 1998, p. 7)

To what extent this model is in fact being implemented and if it really delivers what it promises when Clark (2001, p. 23) claims that it “maintains continuity with the past and present (...) provides new foundations for the rebuilding of internal collegiality and external autonomy” still remains to be seen and will probably continue to be a highly contested topic. It is fundamental to discuss distributed leadership and the role of departmental leadership against a backdrop of an ideal of entrepreneurialism in higher education.

6. Departmental leadership and forms of distributed leadership

One way of understanding institutional changes in universities is to look at systems of work relations which are most significantly present at the departmental level. In a higher education institution, the academic department or subunit of it is usually the main activity system for

most academic staff. Especially in large research-intensive universities with relatively highly loosely coupled structures, academic departments and subunits becomes the main focus of analysis in order to understand change. Some studies report that faculty members have a strong commitment to their discipline, which often overshadows loyalty to the university (Becher & Trowler, 2001). Bolden et al.'s (2007, p. 10) focused their study on leadership at the department level assuming that "this is the main operational unit of universities, the primary source of future senior academic leaders, and the main point of interface between leadership of the institution and leadership of the academic discipline". Therefore, university academic departments and working relations within those are interesting areas to investigate how leadership is perceived and, to what extent distributed leadership is present. Gronn (2002, p. 429) operationalizes the concept of distributed leadership with a processual perspective by presenting distributed leadership as "concertive action" which means to act together by mutual agreement. Here the focus is not on the agency of individuals but on structurally conjoint agency performed by a plurality of independent organization members. Concertive action is suggested in opposition to "numerical action" which understands distributed leadership as "the aggregated leadership of an organization is dispersed among some, many, or maybe all of the members" (Gronn, 2002, p. 429). He presents three forms of concertive action attributed with leadership:

- Spontaneous collaboration

This form assumes that leadership is regularly evident in the interaction of leaders (both formal and non-formal) in a way that their practice is extended over the social and situational contextual of the organization.

- Intuitive working relations

Here, understandings are known to emerge over time when individuals trust each other and develop a close working relationship. Thus, leadership is expected to be manifested in the shared role space covered by their partnership.

- Institutionalized practices

It can be seen as the tendency to institutionalize formal structures and it is observed when it is seen as inappropriate for a sole individual to be in charge. Gronn (2002)

observes that distributed leadership often begins spontaneously, or intuitively, in an organization but goes on to become institutionalized.

For Gronn, when empirically researching distributed leadership, the units of analysis should be these three forms of concertive action rather than individual choices or interpersonal relations. Gronn also identifies two properties of distributed leadership: interdependence and coordination. *Interdependence* is manifested in two ways: by the overlapping of member's responsibilities and also by these responsibilities being complementary. *Coordination* involves the managing of dependencies to ensure that people and resources are all coordinated to achieve the required performance. The unit of analysis suggested by Gronn can frame the study if the research objective is to identify distributed leadership. However, it is important to give space to respondents to spontaneously present and frame their own understandings and perceptions of leadership. A central paradox in this field is that although distributed leadership emphasizes collective action rather than formal leaders' individual action, most research that has been conducted so far in higher education draw conclusions almost only from interviews with individuals in formal academic or administrative posts.

Are these expected characteristics of distributed leadership compatible with academic institutions where individual autonomy provides members with the authority to decide how they conduct their career with relative little interference from peers or external agents? Is it likely to flourish in academic departments where reward, recognition and career paths tend to reward individual over collective achievement (Bolden et al., 2007)? If it really happens, it seems to be fair to incur that there is a shift in power from the individual academic to the collective. A collective that is part of an organization situated in a context of external competition for resources and recognition. These questions have to be discussed in the backdrop of a shift in institutional changes in higher education organizations from autonomous collectivities to stakeholder organizations. Leadership needs to be discussed in the context of such institutional changes.

7. Leadership and institutional changes

I assume here that current changes in higher education occur in response to external factors rather than being caused by institutions' internal motivations. Clark (1983) identifies four major factors affecting academic behavior and culture: the discipline, the higher education institution, the national system and the academic profession. On his turn, Maassen (1996) has identified these as institutional contexts that, with the exception of the discipline, can be directly influenced by external actors. Thus, in order to understand such changes it is necessary to look at the interaction between external demands and higher education institutions internal dynamics (Bleiklie, 2005; Maassen & Gornitzka, 1999). Leadership is related with this interaction as it reflects processes of adaptation of the organization to internal values and external demands. In this context, as Bleiklie (2005, p. 191) claims, it would be a misconception to translate institutional success by organizational achievement: "whilst an organization such as a university may grow and become more secure if it is efficiently managed, it may nevertheless 'fail dismally' if it is led by administrators without a clear sense of values to be achieved". In environments of collegiality characterized by internal self-regulation, leadership tends to be a relatively fluid process as values seem to be accepted by the members. However, the need for leadership becomes more evident in times of organizational transformation when values are reconceptualized. It is the case of higher education institutions, as current transformations resulting from pressures to become more rapidly responsive to social and economical demands create an environment where collective and institutional autonomy are being delineated to respond to external demands. The claim for distributed leadership cannot be understood if taken away from institutional shifts and changes in power relations in higher education.

As Foucault (1982, p. 208) stated, "a society without power relations can only be an abstraction. Which, be it said in passing, makes all the more politically necessary the analysis of power relations in a given society, their historical formation, the source of their strength or fragility, the conditions which are necessary to transform some and abolish others". At the same time that the discourse of accountability in higher education presents a democratizing rhetoric, it also emphasizes certain pedagogies and management processes in relation to others, being part of a move towards market values (Morley, 2003, p. 53). A lack of awareness of political and economical aspects of accountability might limit our analysis by oversimplifying power relations in which leadership is embedded. In this sense, distributed leadership might have two different connotations. First, it can be a defensive discourse where traditional aspects of professional accountability to peers and self-organization are reinforced.

On the other hand, it can also connote an adaptive response in terms of internal organization towards external pressures marked by processes where market accountability to customers is highlighted in relation to professional accountability. In other words, in the way that distributed leadership is being presented, there is nothing that indicates that power is also being distributed.

Both the “top-down” and the “bottom-up” reaction to it present limitations to the understanding of changes in higher education institutions. Institutional values are often expressed in terms of vision and values in organizations. From both perspectives, the need for common vision and overall values often perceived as ideals outside human interaction from which inspiration and motivation evolve. The shift from individual leadership towards distributed leadership guided by a perception of common values and goals. It departs from a criticism of the top-down approach which challenges the idealized view of leaders as the enablers of visions, values linked to strategic objectives which overlooks many aspects of ambiguities in organizational life. This is a criticism of the visionary role of leadership. However, much of the same criticism can also be targeted to distributed leadership as it often implies in an image of organizations as characterized by harmonic consensus which overshadows experiences of conflicts and internal differences. It does not recognize that everyday individual or collective actions can be constituted of mechanisms of resistance to change in explicit or implicit ways. Although the image portrayed by distributed leadership is one of democracy and collective participation it has the potential of becoming a rhetoric artifact in which collectivities are drawn into operating in way that conflicts and paradoxes are removed, and certain power structures may be imposed and consolidated.

8. Conclusion

Rather than focusing on organizational achievement, the goal of this paper was to discuss distributed leadership in the light of institutional change in higher education institutions. Mainly in the UK and in the US, distributed leadership has become a fashionable concept having already generated a considerable literature either descriptively or prescriptively presenting shared leadership. It brings a compelling discourse that aims at combining both principles of collegiality and management. However, the review of the literature suggests a paradoxical context where distributed leadership has been presented in higher education

primarily as a claim for efficiency as a general organizational quality through an instrumental perspective rather than a set of institutional values. Supposedly, distributed leadership contributes to internal engagement and the strengthening of a sense of ownership in university affairs. However the lack of focus on power relations indicates that concertive action is not necessarily accompanied by distribution of power. For example, in the United Kingdom where the discussion about distributed leadership in education reform has had a relatively high impact, most universities are downsizing the committee structure which has historically been the formal system for bottom-up participation in the overall university decision-making (Bolden et al., 2009). Another limitation of the distributed leadership is that so far it has been “culturally-blind” by being an intrinsically Western concept with very little discussion about how it could be perceived or implemented in other contexts.

The concept has critical implications for organizational change and development that demand more empirical investigation. Interestingly, it does not deny the role of formal leaders but assumes that in entrepreneurial institutions, it consists in ensuring that other members can lead at certain times and have the necessary conditions to innovate and change. The most common misconception here is to identify distributed leadership with delegation of management activities. The concept of distributed leadership has a potential as an analytical framework as it draws attention to both vertical and horizontal dimensions of leadership and recognizes leadership outside lines of authority that are characteristic of formal hierarchies. However, in terms of its descriptive potential, further research on university dynamics and work relations is still needed to understand to what extent leadership practices and behaviors are really changing in higher education and how leadership is perceived among university members. The focus on perceptions of leadership in academic departments will certainly contribute to understand how and if collegiality might be assuming a different character and whether external values are being incorporated and balanced or accommodated with internal ones. In the overall sense, this is a discussion about perceptions of universities’ values and mission.

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Article II: Organizational complexity and departmental leadership: perceptions of leadership and teaching/learning in a US research-intensive academic department

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Abstract

This study aims to contribute to the discussion about the role of leadership in academic departments in research-intensive universities. The objective here is to understand how leadership and teaching are perceived in the context of an academic department of one elite US research-intensive university. Semi-structured interviews carried out in a dialogical manner aiming at grasping faculty perceptions of leadership in their academic department were the main data gathering method. Complexity theory which involves the investigation of how apparently random patterns of behaviour form complex dynamic systems, constitutes the theoretical framework of this study. The contribution of this school of thought is the emphasis on non-linearity as the main approach to understanding living systems. The main finding of this study is that participants identified self-organization as their main organizational strength. Dispersed, non-hierarchical leadership was described both as an outcome and as major factor contributing to what was perceived as organizational success.

Keywords: leadership, complexity theory, systems thinking, higher education

1. Introduction

In most European countries, higher education policy reforms implemented as part of the Bologna process aimed at restructuring and unifying degree systems, promoting internationalization increasing commercialization of knowledge and, thereby transforming universities' relation with society. Policy makers claim that such reforms provide institutions with greater autonomy and increase accountability to different stakeholders and to society in general. It is also argued that in autonomous institutions, the quality of management and decision-making processes are decisive in a competitive environment. In official documents, competitiveness is expressed as a driving force in at least two ways. First, the contribution of European higher education to economical growth and national competitiveness is emphasized. Second, it is the need to compete in a global market which is expressed through the claim that European higher education institutions are "lagging behind": "the European university world

is not trouble-free, and the European universities are not globally competitive with those of our major partners, even though they produce high quality scientific publications” (European Commission, 2003, p. 2). The same policy documents present American research universities as Europe’s major competitors usually implying that the US higher education is the result of the marketization of their system, high private investments in education coupled with low state intervention (Gornitzka, Maassen, Olsen, & Stensaker, 2007, p. 211).

The present study which aims at understanding perceptions of leadership and teaching in one academic department in one US elite research university, was designed and conducted based on the assumption that especially in large research-intensive universities with highly decentralized structures, academic departments are the key organisational units when it comes to understand organisational features such as leadership. This is due to the fact that for most academic staff, the department or its subunit is the main activity system. Another assumption is that, instead of being an unilateral activity of one single individual in a single management position, leadership is the result of relatively complex interactions of activities and meanings of many individuals across the organization. I followed a phenomenological research strategy aiming at understanding perceptions of leadership and quality teaching in their own work environment. Individual interviews carried out in a semi-structured manner with regular faculty and people in formal leadership positions were the main data gathering method. The goal of phenomenologic studies like this is to identify the essence of human experiences as described by participants (Creswell, 2003). The research was formulated in a context of organizational change in higher education institutions worldwide and aims at contributing to the discussion about leadership and teaching in European higher education. However, rather than looking for generalizable practices in one US institution, this study applies new conceptions of complexity in organization theory to empirically investigate and discuss assumptions regarding the US system that seem to permeate some political discourses in Europe.

By adopting complexity theory as the theoretical framework, I analyze the academic department as a complex adaptive system (CAS) which is a network of interactions among interdependent agents who are connected to a cooperative dynamic by a shared goal, perspective or necessity (Uhl-Bien, Marion, & McKelvey, 2007). I begin by presenting complexity theory which has its origin in the natural sciences and how it is perceived to contribute to the study of organizations. Rather than a meta-theory, it is an ontology that by

acknowledging the self-organizing character of living system, contributes to the understanding of diversity and change.

2. Theoretical framework

Complexity theory has been presented in the social sciences as a new set of conceptual tools to help to understand process change in contemporary societies (Walby, 2003). Colloquially the word “complexity” is associated with difficulty or as a synonym of “complicated”. In the specific case of organizational studies, complexity theory assumes that organizations are characterized by non-linearity, generation of variation rather than uniformity and adaptiveness (Hatch & Cunliffe, 2006). However, in order to understand complexity we need to focus on its origins mainly in the field of physics and how it has been associated with an emerging world view which has many parallels with the development of realism in sociological thought. Historically the development of general theory in social sciences has involved a process of reducing complex phenomena to simpler ones (Walby, 2003). This has happened in two contrary ways. One movement has been downwards as a reduction to the level of smaller units of analysis rather than focusing in large scale processes. Another reduction which is usually associated with structuralism has taken place upwards mostly aiming at reaching casual explanations. Complexity theory overcomes this polarization as it aims at addressing different ontological concerns: “this facilitates the development of some of the concerns of classical sociology, such as combining an understanding of both individual and social structure, that does not deny the significance of the self-reflexivity of the human subject while yet theorising changes in the social totality” (Walby, 2003, p. 2). This is due to a multidisciplinary process of re-thinking of the concept of systems.

While in the natural sciences the concept of systems has developed rapidly, during the past three decades notions of systems did not change at the same pace in the social sciences. However, a re-conceptualization of systems has turned out to be vital in the light of complexity theory and has taken place mainly since the late 1990s. Globalization itself urged a new re-thinking of the concept of systems in social sciences as its analysis requires a reflection of the notion of systemness in order to understand how events in one part of the world might impact those in another. Thus, in order to address social processes in the globalized world it is crucial to reflect upon potential systematic interconnections at a global

level (Walby, 2003, p. 4). Here the main shift in relation to much what had prevailed in terms of conceptions of systems in social sciences is the rejection of the notion of equilibrium that was perceived to limit our ability to understand diversity and change. This rejection reflects broader shifts in scientific concepts which pave the way for a theoretical linkage between different fields. However, rather than reducing them to a common set of rules, complexity theory aims at understanding processes from describing self-regulating properties of living systems. Einstein's mathematical description of photoelectric effect explained how light is not only wave but also composed of particles – photons. This is known as the wave-particle duality. Einstein did not invalidate Newtonian physics but demonstrated that there are more perspectives to understand reality. Rather than an obstacle to the understanding of the world, dualities and parallels explanations for the same phenomenon were then seen as inherent part of reality. This new view also challenged Newtonian physics by asserting that systems were greater than the sums of its parts and could not be explained by the properties of its parts alone. Newton's assertion that "Numero, pondere et mensura Deus omnia condidit" (God created everything by number, weight and measure) had demonstrated its intrinsic limitations. Some of the developments of system thinking are rooted in reflections of organismic biologists during the early twentieth century in terms of connectedness, relationship and context (Capra, 1996). Central to complexity theory is the concept of self-organization of living systems. Capra (1996, p. 85) lists three characteristics of self-organization:

- Self-organization is the spontaneous emergence of new structures. In early cybernetics, possible structural changes were perceived as depending on a given variety of internal structures. However, more elaborate models approach the emergency of new structures and behaviours in the light of development, learning and evolution.
- Self-organization deals with open systems characterized by lack of equilibrium. It demands flows of energy and matter. The emergence of new structures and new forms of behaviour can only occur when the system is far from equilibrium. Thus, equilibrium will constitute the death of an open system rather than its survival.
- Self-organization is characterized by the non-linear interconnectedness of the system's units.

There is no clear consensus of what complexity is. Although not presenting a clear definition of complexity, Waddington (1977) states that the complexity of a system has to do with the number of components of a system and the number of ways through which they are related. If we follow Waddington's claim, then the level of complexity of system varies according to how the observer identifies and understand these relations. Thus rather than being a fundamental characteristic of the system observed, complexity is associated with the different descriptions that the observer can produce: the more and different descriptions, the more complex the system will be regarded as. Casti (1986, p. 149) defines system complexity as "a contingent property arising out of the interaction *I* between a system *S* and an observer/decision-maker *O*". Rather than an inherent feature of the problem studied, complexity becomes then a mode of thought and even a *worldview* as described by Tôrres (2005). He presents the *Complex Worldview* which rises from global transformations and perceptions of intrinsic limitations of the *Mechanicist Worldview* and the *Economical Worldview* that had previously been hegemonic. All these worldviews have profound implications to the management of organizations and how they are to be studied. A worldview here is understood as an individual's set of fundamental beliefs and principles, sometimes not fully examined or questioned and often unconscious assumptions about the nature of reality.

Mechanistic which was the dominant worldview from the 17th century impacted all areas of knowledge by advocating for an objective reality as explicated by Newton's law legitimization its main implications: linearity, monocausality, determinism, reductionism and immediatism (Tôrres, 2005, p. 1). That was a worldview that was characterized by the rise of the positivist philosophy and the technological development that originated from the industrial revolution. Then, organizations were divided in different units according to specific tasks. With the exception of individuals in formal management positions who centralized power and control, people were seen as "human resources". Strategy is formulated by following a principle of mechanical efficiency. During the late 1970s, when the *economical worldview* rose from new developments in information technology, the metaphor of the market substituted to a great extent the metaphor of the machine (Tôrres, 2005). In this worldview the focus of organizations is the market and the customer. Structure and tasks are similar to the mechanistic worldview: the worker applies knowledge that already exists while managers try to implement procedures that have been associated with examples of success.

Competitiveness is emphasized in different spheres of human life and a culture of quality control and benchmarking is imposed. From the *complex worldview*, reality is essentially defined by relationships and processes. Monocausality is seen as the exception and not as the rule as outcomes are seen as the effects of multiple interactions. Rather than searching for one single “right answer”, it is accepted that there might be many right answers sometimes paradoxical and sometimes even contradictory. Reality is seen as a web of relationships where non-linearity is the main feature (Capra, 1996). When it comes to understanding organizations, this worldview claims that more important than focusing on structures, it is necessary to observe the quality of relationships and processes. It also claims that rather than a management culture of command and control, it is necessary to encourage dialogue and shared leadership which will contribute to creativity.

Table 1 illustrates these different worldviews:

Table 1
Comparing the three worldviews

	Mechanistic	Economical	Complex
Organizational outlook	Parts	Parts	Holistic
Knowledge claims	Right Answer	What gives profit	Many right answers / contradictions
Thinking	Linear thought	Linear thought	Complex Thought
Ontology	Objectivity	Objectivity	Collective, focus on diversity
Success	Mechanical Efficiency	Efficiency and competitiveness	Cooperation
Decision-making	Top - bottom	Top – bottom	Shared meaning and consensus
Leadership	Command and control	Command, Quality Control	Shared Leadership
Organizational focus	Structures and Tasks	Market, Customer, Profit	Relationships and processes

Complexity is thus an evolving concept resulting from multidisciplinary scientific developments that help to contribute to build a worldview which claims to address limitations of previous perspectives to the nature of things. This new perspective has been increasingly applied to the study of organizations. The language of complexity, non-linearity and systems analysis have been translated and applied to the field of organizational studies generating a way of seeing organization based on the following claims (Hatch & Cunliffe, 2006, p. 301; Tsoukas & Hatch, 2006, p. 255):

- Each complex system presents unique features as it is constituted of a number of different elements with a wide range of interactions and **feedback loops**. Systematic behaviour is the outcome of multiple chains of interactions. They are dynamic and need to be adaptable because environments are mutable.
- Complex systems are **non-linear** which means that there is no proportionality between effects and causes. Simple cause-effect relationships are rare. It becomes impossible to make precise predictions of how living systems behave.
- Systems become more complex as they evolve. **Emergence**, which is understood as the rise of new structures and patterns of behaviour from internal interrelations is a property of such systems.
- **Self-organization** as order can emerge from chaos or even contain order. Popularly the word “chaos” has the connotation of “anti-order” or “disorganization” but in the jargon of complexity theorists it means a state when small variations can send off a system in a completely different direction. It rejects the idea that big changes can only be produced by big causes. Instead small causes can produce large changes and vice-versa.
- **Non-equilibrium** as organizations are open-systems that import, accumulate and export energy. In the particular case of organizations, information and financial resources, for example, can be seen as forms of energy.

In a more prescriptive fashion, complexity theorists (Stacey, 1996) claim that today's organizations should be seen as adaptive systems which are interacting with an environment of complexity and uncertainty and, that complex thinking enables organizational conditions that enhance creativity and adaptability. In other words, organizations should take benefit of internal complexity to face complexity. The main units of analysis of complexity science are complex adaptive systems which are defined by Uhl-Bien et al. (2007, p. 299) as "neural-like networks of interacting, interdependent agents who are bonded in a cooperative dynamic by common goal, outlook, need, etc. They are changeable structures with multiple, overlapping hierarchies, and like the individuals that comprise them, CAS are linked with one another in a dynamic, interactive network". Complexity science challenges the dominant approach to leadership that focus on how individual leaders in hierarchical organizational structures influence others in order to achieve predetermined outcomes. It distinguishes leadership and leaders as it regards leadership as the emergent dynamic resulting interactions that produce adaptive outcomes. However, this process of interaction takes place and is socially constructed in a context (Uhl-Bien et al., 2007, p. 299): "context in complex adaptive systems is not an antecedent, mediator, or moderable variable; rather it is the ambiance that spawns a given system's dynamic persona – in the case of complex adaptive system personae, it refers to the nature of interactions and interdependency among agents (people, ideas, etc.) hierarchical divisions, organizations, and environments". The adaptive leadership concept sees leadership as a process of mutual influence that is a property of social systems. It is that perspective that permeates the strategy adopted in this study.

3. Research strategy

I accept here Uhl Bien et al.'s (2007) proposition that complexity leadership is more identifiable in process of adaptive change typical of the Knowledge Era than in processes of technical problem-solving processes usually associated with the Industrial Age. In this sense, much of the discussion about organizational change universities deals with the improvement of learning and teaching in the context of expansion of access to higher education. I interviewed professors that agreed to participate and they represented 25% of the academic staff members of this department. The semi-structured interviews enquired teaching and

learning were perceived and how leadership was experienced and if they identified any relation between these. In phenomenological studies, the researcher aims at identifying the essence of human experiences as described by participants in the study (Creswell, 2003, p. 15). Among the interviewees, there were also the two faculty members that at this point were holding formal management positions. The interview with the Chair and the Associate Chair responsible for educational affairs were important not only as a way of learning about their personal experiences but also as sources of information regarding internal regulations, financial patterns, and access to documents, such as the department's four-years strategic plan that were also analyzed. The contribution of analyzing strategic documents in this study is two-fold: first, it gives valuable information on how decision-making takes, and: second, it gives possibility of comparing more formally explicit organizational views of the department with individual perceptions. The sample of interviews was composed of recently appointed staff as well as professors who had been there for over two decades. Some had been students in this department before assuming academic posts. The fact of having interviewed people who had been at this department for a long time gave an interesting insight of what might have changed (or not) in a historical perspective. However, gender was a limitation as no one among the 10% of female faculty of this department agreed to participate.

Perceptions and personal experiences that were repeatedly evident in the interviews provided categories of codes that were revised and analyzed with the help of NVivo, a software package that supports the structuring of findings and analysis of a qualitative study. I conducted a coding procedure that identified pieces of interviews that exemplified main ideas and concepts. These categories were provided by the data itself rather than being pre-determined by the literature. However, knowledge of main theoretical concepts regarding leadership in higher education and teaching influenced the construction of the interview guide and certainly influenced the categorization and analysis of the data. Nevertheless, the data categorization procedure used here was mostly data-driven (Gibbs, 2002). There were identified over thirty categories describing either perceptions or personal experience, being the most present ones presented in this paper. In order to report the findings in a clearer and more structured manner, these were reduced to the nine that were both more recurrent and that more directly answered to the problem statement of this study:

Table 2

Perceptions of leadership and teaching

Leadership	Teaching
<ul style="list-style-type: none"> - Flat, collegial organization - Consensual Decision making - Non-positional Leadership - Shared Leadership - Emergent Leadership - Strong funding support the leadership model 	<ul style="list-style-type: none"> - Internal discussions about teaching are content-driven - Little changes in terms of student background - Top Students as factor of motivation (learning from students) - Internal pressure and competition for PhD students

4. Perceptions of leadership

Different theoretical models have been presented to understand organizational changes in higher education. The model presented by McNay (1995) describes a process of shift in terms of organizational culture in higher education in the west: from a collegial culture to a bureaucratic one and, then to corporate and finally to enterprise, involving first a tightening up on implementation, then a tightening up on goals and policy definition and, finally a loosening up on control of implementation while retaining clear goals.

This shift however can not be witnessed in the same terms at the studied department. There were very few variations in terms of perceptions of leadership in the department as interviewees described organizational processes that are characteristics of the collegial culture model which is described by McNay (1995) as: decision-making is consensual and management style permissive. Leadership assumes here a “first among equals” style and authority of professional power is more present than authority based on positional power. Academic autonomy and self-regulations are among fundamental principles here. Decision-making usually takes place in the form of consensual processes. In collegial culture, organizational change is expected to happen as a result of a process of discussion among institutional actors in professional networks (Miller, 1995). At this department, interviewees described a very flat internal organization characterized by consensual decision-making and little positional power. Here are some illustrations of this perception:

It's not a strongly hierarchical arrangement. It's a very weak hierarchy. There is a department chair that is more an organizer, a cheerleader than a boss. Each faculty member is their own boss and they do fundamentally what they want to do. There is not a strong leadership in the department in

the sense of someone telling the others what to do. The leadership is pretty much distributed among faculty members (Interview 4, recently appointed)

I think that universities are the canonical flat organisations. It's the prototype of the organisation where everybody has a franchise of their own. Everybody here is a professor. They can call themselves professors in their business cards and besides that, they can pretty much do anything: they teach the way they like, they do research the way they like. There are periodical evaluations done by the chair of the department and then the major tenure review and promotion. They come every six or seven years. But there isn't anybody telling you what to do (Interview 6 – five years in the department)

I have to accommodate to the wishes of the department chair to some extent but I consider him much more as colleague who has a difficult job rather than my boss (Interview 4)

They identified leadership with non-positional power. Some individuals were regarded as leaders either because of their professional expertise or, by gaining collective support in relation to that they suggest. They described processes of organizational change that were initiated and led by individual initiatives by faculty members that demonstrated a personal interest in a certain challenge faced by the department. Changes occurred when these individuals obtained collective support which was described as:

I wouldn't say that there are no leaders but I would say that leadership is not so much by title as it's for example. The chair of the department is leader because he has control of certain budgets and other kind of things, so they are in a leadership position. But there is some people in the department who provide leadership because they are highly respected by their peers and the things they've done before demonstrate leadership. Professor Y is one of these people. She is not the director of this lab but in terms of her involvement in terms of pushing things like student research projects, pushing new programs, I would say that things that she's done from an educational perspective and research perspective have demonstrated a huge amount of leadership. I think she has demonstrated more leadership than some of the previous directors of the lab but she doesn't have the title of director of the lab (Associate Chair, one year in the department).

We are very consensus-driven but the consensus doesn't emerge out of vacuum. I think that the most successful academic leaders set consensus. It's not their own vision that they are putting forward. They articulate it and build consensus about it. I don't think that good consensus doesn't just happen. I think that leadership is about building that consensus (Department Chair, 11 years in the department).

Interviewees justified the flat organization of the department in two ways. First, by evocating the history of the department by claiming that since its foundation and consolidation process, the department was composed by highly capable and independent people who were leaders in their respective fields. Those who had been longer at the department reported not having witnessed internal changes in terms of leadership throughout the years. Another argument to

justify this non-hierarchical leadership model supports some assumptions by the complexity theory: it gives space for personal initiative and creativity. Formal leaders are not seen as source of innovation when it comes to organizational challenges. Instead, innovation was enabled by interpersonal relations. This was described as:

Looking back over the years and taking a broad view, there is very little (change in leadership). The attitude which is similar to when I came here is: the department chair is that things get running and get money and get the professors to do what they want on their own (Interview 3, about 35 years in the department).

One of the things that is interesting in the department is that in the history of the department, when it started, the faculty that was hired was all very strong. I think that the initial faculty had three or four award winners, which is just kind of stunning when you think about it. That tells you that from the beginning, there wasn't just one leader, there was a bunch of leaders and that kind of helped to shape the department. That's why as times passed on, it fitted on that model (Associate Chair).

I think that there is a fundamental rule of organizations that good ideas usually don't come from the top. They come from the bottom. The role of the leadership is not to develop the good ideas, it's to recognize them. The reason is, I don't think good ideas can come from the top in a large organization because people in the top spend most of their time with management. They are too far away from details with which you discover the problems and the opportunities. The people working down there in the trenches are the first ones to perceive a problem or to get an idea about a new solution. So I think that in a great organization, being an university or a company, the way to structure is to allow these ideas from the bottom to find their way up to the top as quickly as possible. You can then take advantage of them. The leaders never come up with any good ideas. It's not that they are dumb people. They are just not in the position to do that (Interview 4, recently appointed).

The way priorities are set is very collegial, people talk to each other about what is going on, it's not an imperial style. It's not like someone saying "this is what we are going to do". It's more like building support. Let's say "here it is a good idea" and if enough people get together and support it, then the department moves in that direction (Associate Chair)

This department has consolidated a central position in their research area in a technology-related field and has throughout the years established close links with industry. The department's strategic plan shows gradual shifts in previous years towards a more diverse funding base with both private and public resources. Interviews revealed a self-perception of success in the department which is sometimes expressed by the capacity that the department has historically demonstrated in raising funds from different external sources. It does not provide an entirely harmonic sight, as interviewees reported situations of internal conflicts which were mainly manifested in strategic discussions. However, a situation of economic stability and abundance flows of external financial resources was identified as a main enabler

of this leadership model as there was little internal competition for resources as described by interviews:

The distributed leadership concept is definitely there but what makes it work is this monetary structural support (Department Chair).

The research funding doesn't come from the department or from the university. It comes from the outside. As a department chair I have an operating budget for the department and that it includes all the faculty salaries and staff, 12 million dollars a year but the department brings in about 30 millions dollar a year in research funding and it doesn't go through the department, it goes directly to the individual faculty member. The 12 million is only for paying infrastructure, pays faculty salaries and put staff on place but the research funding is not through the department. And that's because individual faculty are good at raising money and not because the department is doing anything. What the department leadership tries to do is to position the department so that it will always be that way (Department Chair).

The formulation of the strategic plan is associated with internal vision of the department but also a mechanism to promote the department in the overall university structure with which the department has to interact in order to struggle for resources to hire new faculty and invest in new study programs. While the process that led to the formulation of the strategic plan was regarded as an interesting exercise in terms of discussion of a vision for the department, most interviewees also claimed that it had a more direct impact on the department relations with the university structure. The role of the strategic plan was described as such:

Yes, the deal of the strategic document is in part a sale document to convince. The department has to fight for bailouts, resources. One of the important resources is how many faculty we can hire. So in the case to get more faculty position we have to make the case the higher ranks of the university that we have reasonable hiring priorities. We are not trying to hire more people to do what we already do because we don't have any imagination. We have to argue why it's more important for us to hire faculty than for other departments. In order to do that, we have to say that our area is a very important, it's growing in importance and there are important things that we need to do and we don't have enough faculty in these areas. I don't know how much impact it (the strategic plan) had on the department. Mostly it was about packaging in a certain way so that the dean and some other areas could understand what we were trying to do (Interview 5, 21 years in the department).

When it was founded in the 1960s, this department was exclusively devoted to research with no undergraduate education which was only established after some years when the overall management of the university put that as a condition to hire new faculty. Still today, research is seen as the main priority in the department. For example, research excellence plays a much more decisive role in the appointment of new faculty than teaching. The same can be said in

relation to decisions regarding tenure and internal promotion. That is why the shift in teaching paradigms is important to follow in research-intensive environments like this one as previous research shows that changes in approaches to teaching encounter much more resistance in such environments than on “teaching-focused” universities (Gibbs, Knapper, & Picinin, 2007). The next section presents findings regarding perceptions of teaching in the studied department.

5. Perceptions of Teaching

Higher education institutions face the challenge of providing quality education for more students coming from more diverse social economic backgrounds. Promoting a learning-centred approach has been presented a way of facing this challenge. It is based on the assumption that better learning is related to the behaviour of the lecturers and it is the way that they design courses which facilitates deep learning rather than some essential characteristics of individual students (Ramsden, 1994). According to Knight and Trowler (2000, p. 71), university lecturers tend to adopt an approach to teaching which may be more, or less sophisticated: they can adopt a “surface” or “deep” approach to teaching. Deeper approach shift the emphasis towards the student and the learning environment, concentrating on the need to motivate, encourage independent learning activity and establish a conducive environment for learning which is now defined in qualitative rather than quantitative (“knowing more”) terms. In this sense, this study sought to understand how this challenge is perceived (or not) in a successful department in one US research-intensive elite university.

The claim that a shift from “teaching-centred” to “learning-centred” higher education observes that the expansion of the higher education sector has diversified student bodies in terms of previous abilities, motivation and socio-cultural background (Biggs, 2007; Nygaard & Holtham, 2008). When university programs were targeted to highly selected students traditional methods of teaching were seen as appropriate. However, with the expansion of access, there is now the claim that a shift from syllabus-driven didactics towards learning-centred higher education will benefit students’ development of independent thinking and analytical skills. In the core of this argument is the recognition that students are now different and more diverse. Thus, I tried to investigate if and how faculty perceived changes in the student population over time. The strategic plan of the department gives initial signs that

changes cannot be witnessed at this department as gender imbalance and under-representation of ethnic minorities remain as one of the main strategic challenges to be faced. According to this document, only 15% of the undergraduate population in 2006 was female, contrasting with the national figures in the same year which showed that 57% of all undergraduate students were female. The strategic plan also presents data suggesting under-representation of minority students in 2006: only 7% of the students were African-American, 6% were Hispanics and not a single student was Native American. This document described this situation as unacceptable and that the undergraduate program reform should develop ways of attracting more female and minority students and increase the success rate of these underrepresented groups on the department. Interviews with faculty reinforce the internal perception that little has changed in terms of student's cultural background but give a blurred picture in terms of describing students' previous skills and motivation. In terms of motivation some reported not witnessing changes at all while others noticed that students seemed to have become more pragmatic and more concerned with their professional future. One of them claimed that:

I don't sense that students have a lot of expectations when they come to class. They come to be told things. They don't come with particular plans or expectations about material. They are there to learn and today it's similar to what it was before. And overall attitude doesn't seem any different. College kids are still college kids" (Interview 4, one year at the department and a teaching award winner in his previous institution where he taught for about twenty years)

On the other hand, another interviewee claimed that:

I come from an academic family. My parents were both university professors. The change in the perception of university education has changed dramatically. My childhood was in the tail end of a period of time when the university education was perceived as something you did to be a fully educated person. It was a finishing school for adulthood. They wouldn't necessarily use it in your life but it would make you a better person. That was the main reason for going to school. In the last thirty years, it has been much more about a career. It has been much more getting your first job. In a global scale, the value of higher education has gone up dramatically bringing very different expectations to someone who has college education and someone who doesn't. And it means that college has been more important in people's lives. There is a push to be more pragmatic, I think. If you have a choice between teaching them a very beautiful theory or something that they would be able to use in a job interview or to have in their resumé... the students themselves were torn towards what they want (Interview 6, five years in the department).

In terms of previous skills, interviewees provided a general perception of students arriving at the department now better prepared and with more technical knowledge. They claimed that

the university's highly competitive selection procedure played a central role. The selection of top students was perceived by faculty as a factor that facilitated their task and made teaching often more enjoyable as they often could also learn from students. They reported that:

So students come in with a wide variety of past experiences and doing a lot of different things, some of which I haven't done. You can find yourself falling behind the students which is one of the advantages of this freshmen seminar I teach: I can find out what people is doing on Facebook and this kind of thing which I would have no clue about otherwise (Interview 5).

You notice some differences in people's background. There is a lot more people coming in with experience in programming. The type of programming experience they have has changed over time. They are stronger in some things and weaker in other things because of this changing in their background. But one needs to adapt to that. There are some things that you could assume but with this programming background you can't assume that anymore. There were things that no one used to know about and now quite a few students know about (Interview 6).

I think that thing that seems most different in terms of student mentality, I would say is that there is more students with a significant programming experience. I think they get exposed to technology earlier now. Those that ones have more opportunities to take programming classes earlier or they just learn on their own on the web. The students that come are those in the high end of the curve with more experience than they had twenty years ago (Associate Chair).

I think that having top students helps a lot. From the point of view of someone who is lecturing, it makes it a lot more fun because you can move quickly, you don't have to spend a lot of time helping people over the simple points. You can get the simple stuff out of the way and address really immediate issues of the topic while if you have a slower group of students, you have to spend more time getting over the basics (Department Chair).

The overall argument for a shift in terms of educational paradigms which has its roots in the expansion of the access to higher education to groups that previously did not have access (Biggs, 2007) cannot be found in this department. Here, the overall perception was that being part of a very selective private university enabled the department to work only with top students who taught themselves with very little help. When asked about what motivation they had to teaching and/if continuously improve their teaching, interviewees presented three sources of motivation: personal motivation (pride), peer pressure and internal competition for PhD students. That was continuously expressed as:

That's definitely not leadership but an interpersonal mechanism throughout the department. These are things you might want to look for and that are not related to hierarchical leadership in the traditional sense (Interview 1, 18 years in the department).

Honestly there is not much of institutional motivation. You aren't rewarded that much for being a good teacher. It's more a personal thing. It's about pride and it's just fun. It's fun at the end of the course when people that this was the best class they ever took (Interview 4).

There are a lot of very good people here and that creates some interior pressure to do well (Interview 5).

In a very pragmatic and short term, teaching is mean of recruiting for research. Teaching is about convening excitement about ideas and getting students so that they want to work on these ideas. Attracting people to an idea is crucial to the success of the idea. You may have a good idea but if you can't communicate this idea, then the idea is going to die. So every scientist has two jobs: one, you have to have a good idea, another is to communicate that idea (Interview 6).

In the research environment, one of the reason for teaching well is to get very good students because when you go teach a class, it's like a window in the student community. It goes either way, you want to see who the students are but they also get to see if you are a good professor (Interview 8, three years at the department).

In some sense, I think the biggest job of the leadership is to make sure that they get the right people so that they can do the job. If you get the right faculty and get the right students, the rest will be taken care of in some sense. And I think that our leadership has these qualities (Interview 8).

Discussions about reforms of study programs also gave signs that faculty had a "content-centred" approach to learning. Both the strategic plan and informal conversations with faculty showed that changes in study programs were mostly initiated by perceptions in the field that happen quite often in their research area. Most internal discussions about program reform and teaching in general are led by developments in their field of study. In order words, internal discussions about teaching are almost exclusively about what to teach and rarely about how to teach.

6. Discussion

The findings show striking differences between higher education in Europe and the context of the department that was studied here particularly in relation to change. While change in terms of both organizational structures and educational approaches is advocated not only in Europe but worldwide, the word "change" was hardly mentioned by interviewees and in strategic documents. While policy documents in Europe (European Commission, 2003) present the US top universities as successful institutions by emphasizing competitiveness, participants of this

study presented a self-perception of success that had its roots on their history and on internal interrelations that according to them, create an environment that enhances creativity and initiative. Rather than an obstacle, the collegial leadership model was presented by participants both as an underpinning and an outcome of what they regarded as organizational success. I discuss here how these findings can be interpreted in the light of complexity theory focusing particularly on leadership.

An analysis of how participants experienced decision-making and their own approach to teaching showed properties of emergence which are characteristic of self-organizing systems (Capra, 1996). Main strategic decisions were emergent of processes of interrelations rather than driven by positional power. The perceptions of teaching regarding what was defined as quality, as well as motivation to teaching seemed to emerge from personal experiences and from a horizontal process of relations which involved individual pride, peer pressure and internal competition for research students. Leadership was an emergence of these horizontal relations with different individuals assuming leadership roles in different moments by gaining support (Uhl-Bien et al., 2007). Although participants demonstrated a positive view in relation to the collegial and distributed leadership model that they experience, their description of their work environment is far from one of equilibrium. By non-equilibrium, I also refer here to existence of internal conflicts and personal disagreements which were actually also described by participants, but more to inherent dissipative characteristics of open systems. Open systems present dual dissipative properties: they import energy from the immediate environment that transform and enhance internal complexity, as well they export complexity (Harvey & Reed, 1994, p. 377).

Thus organizational outcomes in this environment cannot be understood within the scope of linear models as a multiplicity of both internal and external factors interact and shape the organization. In the jargon of complexity, interaction does not refer only to the general sociological connotation as describing social interactions among individuals but also in the statistical sense where the relationship between two variables is affected by the value of other variables (Byrne, 1998, p. 19).

Organizational studies about knowledge-based organizations in which the theoretical framework is based on complexity science have suggested a leadership model that rather than being hierarchically based, emerges from complex interactive system dynamics. As

mentioned earlier, from a complexity perspective, this model enables learning, innovation and creativity in complex adaptive systems. However, the flat leadership encountered in this department emerges from a context in which it is supported by at least three main factors: tradition, abundant financial resources and an extremely well qualified faculty. And it is also true they are in context where they do not have the same external pressure to change as in the case of public research-intensive universities in Europe that faced a much faster expansion of access to higher education based on the assumption that they should respond more directly to economical imperatives and system reforms driven by a principle of competitiveness together with fiscal austerity (Morley, 2003). Thus, the analysis of differences in terms and profile, financial patterns and historical perceptions of social role of higher education in different parts of the world makes the claim that European higher education institutions are lagging behind elite institutions abroad extremely questionable.

7. Conclusion

It was not the objective of this study to identify patterns of behaviour that could be generalized to other academic departments. The findings here regarding leadership and teaching cannot be generalizable even in the US context with a diverse system where management varies a lot according to many factors being among them the size and the wealth of the institution (Cohen & March, 1986). Maybe these findings cannot be generalized even to other departments in the same university. The goal of this paper was to depart from a complexity theory perspective towards the study of organizations to investigate perceptions of leadership and teaching in one affluent academic department in one of the main research-intensive US higher education institutions. However, the investigation of perceptions of leadership and teaching in this department becomes relevant in a context when system reform proposals in Europe identify such institutions as those to which European are lagging behind. I share here Olsen and Maassen (2007, p. 14) proposition that this claim is not the result of how American elite universities are organized and governed as well as it does not take into account the different economic, social and cultural environments surrounding higher education institutions in the US and in Europe.

The findings of this study illustrated a dispersed leadership model that was identified by participants both as a dynamic contribution to what was perceived by them as organizational

success, as well as one of its outcomes. But as discussed earlier, this collegial model seems to have been fairly unchanged throughout the years also due to a series of contextual factors. Further studies on leadership in academic departments in the context of expansion of access to higher education and competitiveness-driven reforms in Europe would certainly contribute to enhance our understanding of how leadership is perceived in other settings.

This study found evidences that in the specific context of a prosperous elite US university non-hierarchical leadership is present in a department that has largely contributed both in terms of technological transfer and provision of qualified labour force to economic development of the region where it is located. The findings here support the complexity theory approach in organizational studies that describe leadership as an emerging from complex dynamics “in the edge of chaos” (Urry, 2005, p. 1). This is a radical transformation in a historical period where management practices related to bureaucratic paradigms and top-down decision-making are still hegemonic. It is an interesting intellectual exercise to imagine what kind of organizations would be in a favourable position to move towards this emerging leadership paradigm. Maybe one would not need to travel very far to notice striking differences. Just a 15 minutes drive from the university where this study was conducted there is a town which is characterized by high poverty rate, urban violence, high levels of unemployment, disparity of opportunity and a very limited tax base. Would non-hierarchical leadership be likely to emerge and be internalized, for example in an organization in such context?

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Article III: A complex perspective towards leadership in academic departments: investigating organizational changes in a Norwegian research-intensive academic department

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Abstract

Higher education institutions in Norway have gone through policy level reforms associated to new ideas regarding how universities should be led. The debate about such reforms has been characterized by two contrary positions: one defending traditional collegial leadership while another emphasizing a more modernizing view claiming that old organizational aspects of universities are obsolete. The objective of this study is to contribute to this debate by employing complexity theory to understand current changes. Complexity theory is a relatively new perspective in the study of organizations that focuses on interrelations, self-organization, emergence and non-linearity. The present study discusses the role of leadership in academic departments in the context of organizational changes in Norwegian higher education. The main research objective here is to understand how leadership and teaching are perceived in the context of a research-intensive academic department. Semi-structured interviews carried out in a dialogical manner aiming at grasping faculty perceptions of leadership were the main data gathering method. Findings suggest that changes in higher education cannot be understood as simple reactions to external demands but also in relation to complex interactions from which power relations and leadership emerge.

Keywords: Norway, complexity theory, systems thinking, leadership, higher education, academic departments, learning

1. Introduction

With the rise of mass higher education, universities have become more visible which has highlighted the discussion about how these should be led and organized. In this context, the traditional collegial model of leadership that has historically characterized higher education institutions has been labeled as an example of “weak” leadership and reforms have emphasized a rhetoric based on the business executive ideal as the one capable of providing higher education institutions with the organizational capabilities to respond to increasing

external demands (Bleiklie, 2005; McNay, 1995). The rhetoric surrounding these reforms find support in claims of efficiency, effectiveness and competitiveness and has been implemented in many cases as attempts to adopt management processes that were initially designed to meet the needs of businesses that are associated with an image of organizational success. Birnbaum (2000) in his study about the life cycle of management fads in higher education demonstrates how the sector have attempted to import innovations from other settings, often arguing for rational decision-making but also often without full consideration of their limitations. That is particularly interesting that the reforms that have been implemented in higher education institutions in the last two decades seem to be based on assumptions that are being challenged by an emerging perspective in organizational studies. Those advocating the complex perspective have identified the recent international financial crisis as the main sign of the exhaustion of traditional management as it demonstrated its inability to predict or control the future (Stacey, 2010). Complexity theory is not an unified single theory but the result of various developments in many areas of science studying complex systems such as biology, physics, mathematics and sociology (Mitleton-Kelly, 2003; Stacey 1996; Urry, 2005; Walby, 2003). If we view organizations as complex adaptive systems (CAS's), leadership assumes character that is radically different from traditional models as it shift the focus towards a networked approach based on relationships rather than on hierarchical top-down structures (Marion & Uhl-Bien, 2002).

This paper aims at addressing the following question: what can complexity theory tell us about changing leadership and its relation (if any) in improving teaching in higher education institutions? The strategy followed here consisted in analyzing perceptions of changes in leadership in one academic department in one major public research-university in Norway. The main focus is on change. And change is seen as the result of the interplay of many interactions among which hierarchical relations are part of rather than being the solely force behind change. The following questions operationalize organizational change as emergent in process of interdependence:

- What changes in terms of leadership configuration emerge in this department?
- What changes in terms of educational model emerge in this department?

We begin by discussing what these concepts represent in the study of organizations, and more specifically to leadership. We proceed to present the context of changes in Norwegian higher education before analyzing empirical findings in the light of central concepts of complexity theory.

2. Complexity theory: leadership seen in adaptive systems

It has been argued that more than a set of methodological tools, complexity theory constitutes a different worldview that challenges previous perspectives towards organizational processes (Casti, 1986; Mitleton-Kelly, 2003; Torres, 2005). Broadly speaking, complexity theory departs from perceptions of limitations in classical science and builds upon philosophical assumptions of an emerging worldview which includes holism, perspectival observation, mutual causation and relationships as the units of analysis (Byrne, 1998; Dent, 1999; Harvey & Reed, 1994). Stacey (1995) claims that complexity theory challenges two perspectives that have been dominant in the study of organizations which originate respectively in Newtonian physics and Darwinian evolution. The first, *strategic choice* aims at understanding organizations in terms of transformational processes governed by rational and intentional principles responding to environmental changes. The second perspective is that of *ecology* which is understood as a process of competitive selection where organizations respond to environmental changes forming an evolutionary process of competitive selection. In spite of important differences, these two perspectives share common assumptions regarding system dynamics and see organizational success as the result of equilibrium, stability, control and predictability. Departing from these assumptions, a leadership model has been developed emphasizing top-down procedures and centralized decision-making. However, although both perspectives have advanced our understandings of organizations, it has been claimed that this leadership model which characterized industrial economy might not be suitable for a world economy that is increasingly becoming knowledge-based (Uhl-Bien, Marion & McKelvey, 2007). In this context complexity theory, which originates in developments in fields concerned with the behavior of natural systems, constitutes a powerful set of conceptual tools that together challenge traditional notions of predictability and control. According to Pascale (2006), CAS's core principles:

- *Non-equilibrium*: CAS's are in danger when in equilibrium. According to laws of thermodynamics and cybernetics, in order to survive, any system must cultivate variety. If it does not promote internal variety and diversity, it is likely that it will not be able to cope successfully with variety when it comes from an external source. Living systems are characterized by flows of energy and unpredictability. According to these principles, equilibrium equates with death (Pascale, 2006; Tôrres, 2005).
- *Self-organization*: CAS's have self-organizing properties that can change spontaneously into other forms. As open systems, CAS's present emergent properties which constitute forms throughout patterns arise from a multiplicity of relatively simple interactions. Emergence, which is understood as the rise of new structures and patterns of behavior from internal interrelations is a property of such systems.
- *Edge of chaos*: innovation and organizational changes happen when organizations are on the "edge of chaos". Evolution is more likely to occur in a context of bounded instability rather than on stable equilibrium. Popularly the word "chaos" has the connotation of "anti-order" or "disorganization" but in the jargon of complexity theorists it means a state when small variations can send off a system in a completely different direction. It rejects the idea that big changes can only be produced by big causes. Instead small causes can produce large changes and vice-versa.
- *Non-linearity*: interactions within complex systems are non-linear. CAS's have multiple components and interactions that can seldom be explained by simple linear cause-effect relationships. One relatively small and isolated variation can cause large effects and large changes may have little consequences.

One of way of understanding the novelty of complexity theory in organizational studies is to express that in terms of metaphors. The strategic choice perspective can be associated with a mechanistic worldview in which strategic decisions were throughout a principle of

mechanical efficiency. That is the metaphor of the *machine*. The focus of the ecology perspective is the market and the customer. Structure and tasks are similar to the mechanistic worldview: the worker applies knowledge that already exists while managers try to implement procedures that have been associated with examples of success. Competitiveness is emphasized in different spheres of human life and a culture of quality control and benchmarking is imposed. Here we identify the metaphor of the *market*. From the complex worldview, reality is essentially defined by relationships and processes. The complexity perspective, rather than searching for one single “right answer”, it accepts that there might be many right answers sometimes paradoxical and sometimes even contradictory. When it comes to understanding organizations, this worldview claims that more important than focusing on structures, it is necessary to understand relationships and processes which are part of a web not only of agents, but also of meanings. Here we find the metaphor of the *network*. Rather than focusing on structures or parts, the main concern here is with interrelations as the focus of analysis.

Stacey, Griffin, and Shaw (2000) present the following definition of CASs:

a complex adaptive system consists of a large number of agents, each of which behaves according to its own principles of local interaction. No individual agents, or group of agents, determine the patterns of behaviour that the system as a whole displays, or how these patterns evolve, and neither does anything outside the system. (p. 106)

This definition particularly reminds me a lot of what large research-intensive universities have traditionally been with no faculty member or administrator (individual agents) or academic department (group of agents) determining patterns of behavior of the whole system and no tight control from outside the system. However, when we say there is no outside control, we do not mean that universities do not have to respond to external demands. Likewise, when we say that no individual agents determine patterns of behavior, we do not imply lack of leadership or a “free-for-all” system in which anyone can do anything. A common misconception in the context of human organization is that self-organization is often translated as lack of order. That is not possible as interdependence is one of the bedrock principles of complex adaptive systems: “human agents can never simply do what they like, because they will be excluded if they do. In their local interaction, human agents constrain and enable each other, which is what power means, and these patterns of power constitute

social control and order” (Stacey, 2010, p. 64). The adaptive leadership concept sees leadership as a process of mutual influence that is a property of social systems. It is that perspective that permeates the strategy adopted in this study.

Leadership literature shows an evolving series of schools of thoughts that not necessarily resolved the questions raised by precedent schools but moved the discussion and attempted to address different aspects of leadership (Bryman, Gillingwater, & MacGuiness, 1996). Although being a relatively new approach in organizational studies, complexity has already generated different ways of conceptualizing leadership challenging traditional views that claim that leaders set a vision, objectives and targets of organizations and implement ways of monitoring and assessing outcomes. According to the institutional perspective, leaders have been expected to inspire a common vision and consolidate organizational identity. This view is expressed by Schein (1985, p. 317) as “the unique and essential function of leadership is the manipulation of culture”. The organizational learning perspective that rose in 1990s brought the view of the leader as the integrator of learning ideas – systems thinking, personal mastery, mental models, shared vision and team learning - when he plays the role of the designer of the organization (Senge, 2006). Although Senge presents an effort to see leaders not as separate but as integrative parts of the living systems that they are intended to design, he still presents them as playing a central role in designing governing ideas, as stewards of organizational vision and also as teachers. More recent complex leadership literature either challenges or diminishes this designing role.

Complex Leadership is a concept coined by Marion & Uhl-Bien (2002) claiming that leadership in complex systems need to move from control and top-down design to a model that enable interconnectivity and foster dynamic system behavior and innovation. It argues that leaders are products of interactive dynamics and that rather than creating the system, leaders are created by it through a dynamic of aggregation and emergence. It views leadership as not only located in formal leadership positions but as an aspect that permeates the whole system. They identify three leadership functions: adaptive, administrative and enabling (Uhl-Bien, Marion, & McKelvey, 2007). *Adaptive* leadership is defined as an interactive dynamic that produces adaptive outcomes. Rather than a formal leader, it is a collective change movement that nonlinearly emerges from interactions: “it originates in struggles among agents and groups over conflicting needs, ideas, or preferences; it results in movements, alliances of people, ideas, or technologies, and cooperative efforts” (Uhl-Bien et al., 2007,

p.306). *Administrative* leadership deals with the role of people in formal management positions. The nature of the leadership function varies according to the hierarchical level of the system. It is expressed in terms of positional power. *Enabling* leadership has the role of promoting the conditions that catalyze adaptive leadership and emergence by fostering interaction, fostering interdependency and embedding adaptive tension. Tension can be fostered internally by heterogeneity (diversity), interdependency and conflicting constraints. Although the focus here is on interrelations, much of the leadership concept presented by the Marion and Uhl-Bien still focuses on the role of formal leaders and bureaucracy. The concept that they suggest aims at understanding leadership both in relation to complex properties but also in relation to bureaucratic structures. They say:

earlier we stated that CAS are the basic unit of analysis in complex systems. However, as all organizations are bureaucracies (there are no such things as “post-bureaucratic organizations”), CAS necessarily interact with formal bureaucratic structures in organizations. Moreover, there times and conditions in which rationalized structure and coordination (e.g. hierarchical authority) need to be emphasized in subunits (e.g. when the environment is stable and the system seeks to enhance profits) (Uhl-Bien et al, 2007, p.305).

A more radical rupture with traditional models of leadership is presented by the work of the Complexity and Management Centre, University of Hertfordshire. It departs from perceptions of limitations of the organizational learning perspective that according to Stacey (2006) reify and anthropomorphise organizations. The complex responsive process theory suggested by Stacey et al. (2000) sees organizations in terms of patterns of people’s interaction and that brings implications to one central discussion in organizational they in these days: learning. If we look at organizations as processes of interactions among interdependent people, then learning cannot be seen as an uniquely individual process, nor can we say that an organization (a thing) can learn. Learning is thus seen as an activity of people who interact and are interdependent. Emergence is seen here as patterns of meaning and knowledge that result from interactions: “these continually emerging patterns take thematic forms, both narrative and propositional, both conscious and unconscious, and they organize the experience of being together. Such themes are iterated in the repetitive form of habit but always with the potential for transformation” (Stacey, 2006, p. 243). It is in terms of interactions that power relations are understood. Every human relation is embedded by relations of power that both constrain and enable: “as soon as we enter into relationships we constrain and are constrained by others and, of course, we also enable and are enable by

others. Power is this enabling-constraining relationship where the power balance is tilted in favor of some against others depending on the relative need they have for each other” (Stacey & Griffin, 2005, p. 6). The self-organizing property here means that individuals’ local interactions is where widespread coherence emerges from normally without being guided by any central strategy or policy. If new patterns of behavior emerge from, local interactions, then it is impossible for leaders to determine values, change cultures or transform organizations according exclusively to their own vision. The role of the leader *emerges* from social processes of recognition which are formed by individual and collective identities and what is mutually recognized is the role of leaders (in formal or formal leadership positions) to articulate recurrent themes and meanings. That is not the same as a problem-solving role as the leader is also dealing with uncertainty but rather a process of social interaction in which patterns of behavior have a transformative potential.

These dynamics of social interaction are always embedded in some context. Unlike early cybernetics which advocated a logic-scientific approach, the present study follows an interpretative perspective in which context is regarded not as an antecedent variable but as the atmosphere in which leadership is constructed. We move now to the specific case of the context of a Norwegian higher education institution

3. The case of leadership at this institution

This study was conducted after the implementation of the so called Quality Reform which consisted in a very ambitious set of structural transformations which had the objective of making Norway a leading nation in the knowledge based economy (Bleiklie, 2009; KUF-NOU, 2000). Reforms in Norway followed broader developments in European higher education emphasizing international competitiveness and system efficiency (Gornitzka, Maassen, Olsen, & Stensaker, 2007; Maassen & Olsen, 2007). This program of system level reforms had three main parts. First, the reform of study programs adopting a new degree system following recommendations of the Bologna declaration which highlighted higher education institution’s responsibility for efficiency of study programs and the need to introduce new teaching methods and student assessment. The second part is related to internationalization through increasing student mobility. The third part is concerned with organizational changes and higher education institutions’ relation with central government,

introduction of incentive based funding schemes and again, institution's responsibility for student achievements and credits. Reforms initially suggested a change in the legal status of higher education institutions from "special civil service institutions" to "public enterprises". The main implication to leadership in the changes suggested was that leaders at each organizational level would be appointed from superior authorities instead of locally elected which had been traditionally the case in higher education institutions (Michelsen & Aamodt, 2007). As these changes encountered severe opposition, the ministry left each institution to decide whether they would introduce the centralized leadership model or keep the traditional electoral model. The new legislation approved in 2005 kept higher education institutions status as civil service institutions and again left to institutions to choose their own internal organizational structure. Since then, many institutions have adopted mixed solutions adopting appointed leaders at departmental levels but keeping the traditional elected model of leadership at the faculty and top management positions. The case of this institution is different as leaders are appointed by superiors at all levels with exception of heads of departments which are still elected by faculty members, although internal documents recommended the university to adopt appointed leadership also at the department level. However, it does not mean that leadership at the department level has not changed as in this combined organizational structure, department leaders have increasingly become part of the overall university management in which they have also to report to superior levels of the hierarchy. The fact that academic representation in boards have weakened also illustrates a transition from a collegial to a more hierarchical organisational format. These can be interpreted as processes of change in universities from autonomous collectivities to stakeholder organisations in which power relations are shifted towards external demands for research and educational needs (Neave, 2002). A recent external evaluation of leadership at this university concluded that the university moved towards a "stronger" leadership model in which external representation has been strengthened which might have occurred at the cost of internal legitimacy. The same report also claims that this leadership model, with little contact with employees in large organization brings the risk of decisions not having a significant impact in practice. Competitiveness is the key word in strategic documents which state goals such as consolidating a position among the top 1% universities in the world by 2020.

Having in mind complexity theory's concern with processes of interactions, the question that rises now is how changes in political agenda and in the overall university structure are related

with patterns of behaviour in the department level in where academics usually construct their interrelations and perform their work.

4. Methods

Early complexity developments in the social sciences are usually associated with cybernetics which raises the limitations of logico-scientific modes in understanding social phenomena. The research strategy adopted here resonates with Tsoukas and Hatch (2006) preposition that complexity theory is perfectly compatible with interpretive research as our understanding of complex systems will be always grounded on the narratives we develop about them. The option here was to follow a phenomenological (Moustakas, 1994) research strategy aiming at understanding perceptions of leadership and quality teaching in their own work environment. The goal of phenomenological studies is to identify the essence of human experiences as described by participants (Creswell, 2003). When changes in policy and external demands are characterized, what we are actually doing to present perturbations of a system that reacts and moves off in rather non-linear ways. That is the beginning of the plot. Throughout this fieldwork, it was collected many reports of personal experiences that characterized various different perceptions of resistance and frustration towards external demands, internal conflicts, changes in patterns of behavior and how leadership is perceived. Individual interviews carried out in a semi-structured manner with regular faculty and people in formal leadership positions were the main data gathering method. There were carried a total of twelve interviews which corresponded to about 25% of the total number of professors in the department. Interviews lasted from thirty minutes to one and a half hour. The semi-structured interviews enquired how teaching and learning were perceived and how leadership was experienced and if they identified any relation between these two aspects. Among the interviewees, there were the two faculty members that at this point were holding formal management positions. The interview with the Chair and the Associate Chair responsible for educational affairs were important not only as a way of learning about their personal experiences but also as sources of information regarding internal regulations, financial patterns, and access to documents, such as the department's four-years strategic plan that were also analyzed. The contribution of analyzing strategic documents in this study is two-fold: first, it gives valuable information on how decision-making takes, and: second, it gives possibility of comparing more formally explicit organizational views of the department with

individual perceptions. The sample of interviews was composed of recently appointed staff as well as professors who had been there for over two decades. Some had been students in this department before assuming academic posts. The fact of having interviewed people who had been at this department for a long time gave an interesting insight of what might have changed (or not) in a historical perspective. However, gender was a limitation as no one among the 10% of female faculty of this department agreed to participate. It is difficult to interpret this information. It might give an indication that leadership is perceived in different ways by man and women which is in itself an interesting research question for further studies.

This is a study about one academic department in Norway which the goal has been not the statistically generalizable conclusions to be transferred to other institutions nationally or internationally. Instead, it uses concepts of complexity theory to discuss organizational changes in this department and reflect upon a new theoretical framework to change in higher education institutions facing similar challenges brought by globalization.

Perceptions and personal experiences that were repeatedly evident in the interviews provided categories of codes that were revised and analyzed with the help of a software package that supports the structuring of findings and analysis of a qualitative study. It was conducted a coding procedure that identified pieces of interviews that exemplified main ideas and concepts. These categories were provided by the data itself rather than being pre-determined by the literature. However, knowledge of main theoretical concepts regarding leadership in higher education and teaching influenced the construction of the interview guide and certainly influenced the categorization and analysis of the data. Nevertheless, the data categorization procedure used here was mostly data-driven (Gibbs, 2002). The following categories were identified:

Table 1

Main categories of perceptions that emerged from interviews

Perceptions of leadership	Perceptions of teaching
Leadership more centralized	Discussions about what to teach, but not how to teach
Decision-making less consensual/democratic	Teaching-centre approach
More bureaucratic	Expansion as a challenge

The main findings here were that participants experienced changes towards a more centralized leadership model. But on the other hand, despite challenges brought by the expansion access to higher education, little has changed in terms of how participants experienced their own activity as university teachers. These findings will be further described in the next sections.

5. Perceptions of leadership

This department has experience a constant growth from five academic staff members in the early 1970s to over forty in 2008. Organizational growth and the implementation of the Quality Reform in the early 2000s reflected in changes in how leadership is experienced by faculty. Although leadership still presents some aspects of the traditional collegial model that has historically characterized higher research universities, participants described changes towards a more business-like model. That has been reported by all interviewees which reinforce my initial assumptions regarding a change towards a more **centralized leadership** model responding more directly to the university overall hierarchy. These changes have been expressed both by faculty and the elected department head who described changes in his own role as such:

Yes, we had a more democratic system 10 years ago. (...) We had a leadership that was less important and less visible. In the first 20 or 30 years, people used to be pretty much alone, everyone, every scientist used to be pretty much in his own and the employer was almost invisible. But now the employer has been giving responsibilities in more serious ways than before. Socially, as an employer, we have more responsibility now than our employer had. (Department Head – faculty member since the foundation of the department)

Elements of traditional collegial leadership still seem to be present and the leadership role of individuals in non-formal leadership positions was emphasized as some interviews described the influence of a group of four professors that have been in this department since its early years (being the department leader one of them) and that has to a certain extent set the course of the department. However, **decision-making** processes have been described as **less consensual and transparent** and with less space for participation. Also decisions seem to be

gradually shifting towards a character more accountable to external stakeholders than before. There were described as such:

There is also a change in the leadership form because in the old days these meetings could actually make the decisions but they can have an opinion but now the boss is really the boss. The boss now is a real boss. In the old times we used to have these big meetings in the old Greek style with people with different opinions and it could last for hours. Now it's over. (Professor 8, 11 years at the department)

Interviewees also described the rise of a **more bureaucratic** organizational structure that, in their perception does not contribute to positive changes. Bureaucracy is rather received with mistrust and resistance.

Expensive professor time is being used to do the job of some clerk in the administration easier. I'm actually quite angry about that. So before they set up new committees and new initiatives for Quality Reform, they should think a little about thing like that. (Professor 6 – 28 years in the department)

The teaching assessment done here is made because we are told to and not to improve. That's why it's dumb. Some teachers have this standard formula. It's more like a formality. Many years ago I learnt from a very smart project manager that when somebody sends you a formula to fill in, what you usually do is that you just ignore it and you will find that from 90% of it you will never hear another word. The 10% which was important will ask "hey, can you do it? I need it". And then you do it. And that will save you a great amount of paper. It's very incorrect, it's very, very bad but it's very useful. Students also do that. I've seen that in the industry. People who write reports, do it because they were asked to and if you ask how they are going to use it, they will say "I don't know". And you ask the quality people and they will say "we filed them". Come on, get rid. That's ridiculous. (Professor 2 – 9 years in the department)

Strategic documents which emphasized the need to improve the university position in international rankings have been interpreted as prioritizing research in relation to teaching. This perception together with a rise of more bureaucratic forms has, according to most interviewees, been particularly negative towards teaching. Some reported that bureaucratization and the emphasis on research have not contributed to enhance motivation or helped to initiate any reflection process regarding teaching.

But it's true that the prestige is mainly on the research side and that has been strengthened by the last dean. He has emphasized research really much and it has also to do with the role of the top leader who says that we should be on the role of the top list somewhere and also funding is linked to publications. It has been a trend to be more focused on research. It's ok for me but it doesn't improve the quality of teaching. (Professor 9 - 25 years both as a student and member of the department)

I'm not a rector and I will never be so it might be that's the right way to do it but I think that when a department meets the rector, he should have big ears in order to listen to our reality in order to learn and then he should have big mouth not telling us the wrong things that we have done but a big mouth in order to motivate us to work in order to his strategic goals. And at least for me, it's not working very well. It's more like being called in a police station in a murder investigation and he hardly ever speaks. So it's difficult to be very motivated. (Deputy Department Head – 22 years in the department)

The issue of change being that in terms of the departments' relations with its environment and the university as a stakeholder organization was presented spontaneously by most interviewees. However, these changes were almost always presented as being designed externally. Initiatives aiming at bringing organizational changes are perceived as designed and implemented from above rather than emerging from local interactions and thus received with resistance. The next section presents how teaching has been experienced in this context.

6. Perceptions of teaching

Higher education institutions face the challenge of providing quality education for more students coming from more diverse social economic backgrounds. Promoting a learning-centred approach has been presented a way of facing this challenge. According to Knight and Trowler (2000), university lecturers tend to adopt an approach to teaching which may be more, or less sophisticated: they can adopt a "surface" or "deep" approach to teaching. Deeper approach shift the emphasis towards the student and the learning environment, concentrating on the need to motivate, encourage independent learning activity and establish a conducive environment for learning which is now defined in qualitative rather than quantitative

(“knowing more”) terms. In this sense, this study sought to understand how this challenge is perceived (or not) in this department.

The claim that a shift from “teaching-centred” to “learning-centred” higher education observes that the expansion of the higher education sector has diversified student bodies in terms of previous abilities, motivation and socio-cultural background (Biggs, 2007; Nygaard and Holtham, 2008). This challenge is expressed in the university overall teaching strategy. When university programs were targeted to highly selected students, traditional methods of teaching were seen as appropriate. However, with the expansion of access, there is now the claim that a shift from syllabus-driven didactics towards learning-centred higher education will benefit students’ development of independent thinking and analytical skills. As learning-centred concept departs from the fact that students today are different and more diversified, it was attempted to grasp how faculty perceived these changes. Virtually all interviewees described **challenges brought by that the expansion of access**:

We were growing in our department from 5 students to 200 and now we are back again to 100 and something. I was here all the time since it was attracting the very best students, almost in the country because we used to have 10 positions for students and the competition for these places was extremely high. And now it’s far from that high. And that also tell a lot about how it’s to be a teacher here. It’s not hard to be teacher for very clever students. It may be hard because they are demanding and that’s good for everybody. And teaching 400 students like I have been doing and the same topic for 10 students also makes a difference. (Professor 7 – 36 years in the department)

They described a process where classes diversified mostly in terms of student ability, a scenario which suggests lower levels of teaching. Although some faculty members mentioned some positive changes like students having better social and foreign language skills, nearly all described challenges and even frustration in lecturing to a student body that was far larger than then the elite group that was selected to attend the same study program twenty or thirty years before. Some of them who were also students at the department identified themselves among the top students that entered the student program in its early years when it was much more selective. The next question was how participants responded to this challenge. My research strategy here consisted in understanding how faculty defined quality in this context and if/how their own teaching has changed. The data does not present any indication of a shift in educational paradigms going in the department. Some reported changes were related

to the use of problem based learning and group work in classroom activities but that in general terms professors did not express changes in how they perceived their own teaching. Some understandings of quality suggested a **teaching-centred** and content-driven approach:

Quality is that students learn the right things and that the curriculum is good and can last for many years. The role of the student is very important for their learning. (Professor 9 – 25 years in the department)

Quality is to transfer knowledge to the students. That's my immediate reflection about that. It's about teaching them the relevant topic. It's what you choose to teach and how you perform the teaching. (Professor 10 – 22 years in the department)

Other definitions attributed to the lecturer an inspirational role as the one that challenges and motivates students. Most described little changes in their own teaching while some reported that their main response to the expansion of access to higher education has been to lower their expectations and demands towards students.

Most of it is done like when I was a student. Some people try to experiment a little bit but the only difference, like I do myself, is trying to make people solve problems during the lectures. So it's just small things like that. The problem is that when you have a class with 300 students and you don't have a lot of resources, there is only one way of doing it and that's traditional lecturing because everything else demands resources and we don't have the assistants. (Professor 8 - 11 years in the department)

My teaching reflects these changes in the fact that my expectations are lower and that's not a good thing for a university that is trying to be world class. (Professor 6 – 28 years in the department)

But that's also partly because teaching is very conservative. And also because doing it the same way done the last year demands much less work than suddenly doing it in a different way. (Professor 4 - 13 years in the department)

While research remains as the main source of prestige and professional achievement, most interviewees declared that their main motivation to teach was personal. Another motivation is the possibility of getting in touch and recruiting masters and PhD students. However, an analysis of the department's strategic plan presents also indication of the secondary

importance of teaching in relation to research as education is virtually not mentioned on it. My next step was to ask my interviewees about how teaching was conceptualized in their interrelations. Here again, informal discussion about lecturing and also more formal processes of reform of study programs were essentially content-driven.

Selecting courses and compose programs and what to have in each course. And design each course in terms of length and in how much detail it will be. That's how our discussion have been over 3 decades. (Department Head – 38 years in the department)

'What' to teach comes first, simple. There are ten packages here, if you go through all these, you are a professional in our area. It shouldn't be more complicated. In all the things I have been teaching here, I have not been a student myself but I have a general mathematical background making it easy to understand and use other ideas because there is always some mathematic at the bottom. If not, then it's not real knowledge yet. Then it's feelings. (Professor 7 – 36 years in the department)

The strategic plan of the department makes no reference to changes in terms of pedagogical practices and academic program reform, as described by participants are motivated by developments in their own research field and perceptions of what would be relevant to students technical knowledge. The attitude expressed by participants towards teaching reflected the typical picture of academic as primarily concerning in keeping up with the developments of their field and contribute to it through research. But on the other hand, there are no indicators of more transformative changes in educational practices.

7. Discussion and conclusion

During the past two decades, many conceptual tools and conceptual models have been suggested to understand change in higher education (Clark, 1998; Slaughter & Leslie, 1997; Tjeldvoll, 1998/1999). This study discusses organizational change and analyses findings in the light of key concept in complexity theory. The novelty of the theoretical framework used in this study in relation to previous models focusing on organizational changes in higher education institutions is that it sees *transformative change* as the result of *emergent* process in a context of *non-equilibrium*. In the studied case we observed a new figuration of power

relations moving from collegial to central management, a move that emphasized equilibrium and that thus does not reflect into transformative change in terms of perceptions of teaching. The use of complexity theory to analyze the findings of this study enables us to understand why transformative change in terms of teaching and learning did not happen in this department.

The following table contrasts conceptualization of transformative change complexity theory with the dominant discourse in policy and management in higher education:

Table 2

Contrasting dominant discourse in higher education management with key concepts of change in complex systems

Dominant discourse and practice	Transformative change in complex systems
Equilibrium	Non-equilibrium
Regulated change	Emergent change
Planned change	Unpredictability
Rational, pre-defined goals	Paradoxical, contradictory demands
Learning as an individual activity	Learning as an activity of individuals in processes of interdependence

The departing point here is that sustainable changes needed in higher education are not mere incremental processes aiming at improving what had always been done but a change in perceptions leading to transformation. By “sustainable change”, it is understood here the capacity of a system to transform in order to sustain itself in relation to its environment, which is in turn in different from passive adaptation. The question is how such changes happen. The findings here show aspects of change and of continuity. Initially it was observed changes as leadership in the studied department has moved towards a more centralized and more bureaucratic model. Furthermore, it was observed continuity as faculty still demonstrated a content-centred perceptions of their role as lectures. As one of the key concepts of complexity is non-linearity, it is important to move on from a linear and

monocausal perspective that sees organizational outcomes as direct results of the design and actions of those in formal leadership positions. However, it is clear here that changes towards a new managerial model do not present any sign of contributing to a process of reflection that deep transformations demand and, do not seem to be targeted to offer any real alternative to the double problem of higher education as expressed by Sterling (2004, p. 51): “first, higher education institutions are not primarily reflexive learning systems but teaching and research systems. Second, higher education is not primarily engaged in the provision of deep learning to students, but in first-order learning: the transmission of information and development of instrumental skills aligned (increasingly) to the perceived needs of economy”. One can here criticize Sterling’s project of a university as a learning system if one accepts Stacey’s (2003) assertion that the organizational learning reifies a process that in reality consists of learning as an activity of interdependent people. However, the core of Sterling’s argument claiming that higher education response to changes in the environment as accommodatory is supported by the findings of this study.

By seeing the world through the metaphor of the network, complexity theory sees organizational change in terms of changes in patterns of behaviour that emerge from local interactions in process of interdependence instead of being determined by prior design. However, it does not mean that changes “just happen” and that every emergent result is necessarily positive. This could be observed in this study as the emerging pattern of behaviour in the system studied here is either one of resistance to change and/or incremental response to top demands. New patterns emerge because of agents’ actions and interactions which embed, are embedded by, and produce new forms of power relations in which leadership is iterated. In this sense leaders may play a positive role. According to this perspective, rather than controlling and designing a system from outside, the leader is someone that widens communication and articulates what is positively emergent. Accepting the complexity perspective that transformations emerge from interactions and uncertainty, we observe that current changes in leadership express a dominant perspective in policy making and management that imply a principle of “doing things better” that do not present indications of encouraging changes in educational practices in a more transformative way as a shift in educational paradigms would suggest.

This paper discusses leadership and change in higher education institutions in the light of central concepts of complexity theory. This is a relatively new perspective to the study of

organizations that departing from broad multidisciplinary developments, sees systemic behavior as emergent outcomes of multiple chains of interactions. The empirical component of this study consisted in understanding how faculty perceived leadership and teaching in their academic department. However, both teaching and departmental leadership are not isolated phenomenon as the system that was studied here is nested in other systems which are not only the university overall organization but the whole educational system and, in an even broader view, the wider society. Changes in a departmental leadership based on principles of competitiveness and system efficiency reflect a paradigm founded on a mechanistic metaphor of reductionism and objectivism. It was observed in this study that although participants experienced a more centralized leadership model that would allegedly improve system efficiency and enhance the capacity of university to change, the evidence encountered here suggests that they still experienced their own teaching as confined to instruction and transmission. These findings suggest that more transformative changes in higher education would require participative learning processes, engaging in reflection, in which leadership play a role in opening the possibility for further exploration and new meanings. It means moving from linear design towards designing with intent and, building upon uncertainty by engaging in processes of interaction in a reflective and imaginative manner. The main richness here is that although we cannot predict what will emerge from the interplay of our intentions and actions, we can develop a broader and more transformative understanding about the dynamics of such interactions.

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Article IV: The contribution of complexity theory to the study of departmental leadership in processes of organizational change in higher education

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Abstract

Although much has been written about changes in management in higher education institutions, little research has been conducted focusing on understanding leadership in academic departments. Furthermore, most of what has been produced about this topic has either as an implicit, or as an explicit motivation, to identify leadership styles or behaviours that can be associated with effectiveness and, therefore organizational success. The purpose of this article is to suggest a different perspective to the study of departmental leadership and transformative change in higher education institutions based on complexity theory. Seeing academic departments as complex adaptive systems involves shifting from focusing on individual leaders' behaviour, towards seeing leadership as a complex activity in which new patterns of behaviours emerge in non-linear and rather unpredictable ways. The main argument here is that complexity theory is a powerful conceptual approach assuming that new challenges put towards higher education institutions demand transformative change which involves a higher level of learning and, awareness of system sustainability. Leadership involves a different character if we move from raising questions focusing only on system efficiency or effectiveness upon a given paradigm, towards raising questions regarding leadership in process of transformative change.

1. Introduction

Although much has been written about the changing character of leadership in higher education institutions during the past two decades (Birnbam, 2000; Bleiklie, 2005; Bolden, Petrov, & Gosling, 2009; Clark, 1998; Gornitzka, Maassen, Olsen, & Stensaker, 2007), surprisingly little research has been conducted on departmental leadership. Considering that academic departments are the main environment in which faculty experience and build their local work relations and, perform important aspects of their professional activity, it is remarkable to notice that such studies are so scarce. This article contributes to this discussion by formulating the following question: what is the novelty of discussing leadership in academic departments through the lens of complexity theory? The majority of the studies on

this topic present an emphasis on improvement and effectiveness by trying to identify characteristics of leadership behaviour (usually focusing on individuals holding formal leadership positions) that can be associated with organizational success (Bryman, 2007). However, it is claimed in this article that if we focus on transformative change rather than on system improvement, we need to raise different questions than those that have been targeted so far which can be seen as attempts to understand leadership by focusing exclusively on characteristics and behaviour of individual leaders. In this sense, complexity theory which is a rising perspective to the study of organizations offers new ways of understanding changes which are emergent rather than programmed in a centralized manner. Such changes involve creativity and innovation which demand new levels of learning, not only from students, but from all those who are part of a community of learners which universities intend to be. Hence, this article focus on the relations between leadership and the activity of faculty not only as teachers but also as learners. The analytical focus of most research conducted following complexity as a theoretical framework is on complex systems (Marion & Uhl-Bien, 2001). Our physical global environment is in itself a complex system in which adaptiveness is associated to life and sustainability (Liang, 2010). The focus on complex systems reinforces the concept of sustainability as it moves from being one exclusively linked with ecological concerns to become a guiding principle in many spheres of human organization. As I understand, seeing human organizations as systems, means analyzing sets of different relationships which creativity, innovations and new further patterns of behaviour can emerge.

The article starts with a discussion about sustainability and transformative change in higher education. It proceeds to a review of the literature on departmental leadership, highlighting questions that have been raised so far and the main findings related to these. Furthermore, it discusses an understanding of change and learning in organizations that differs from previous studies on this topic. This conceptual articles aims at answering the following question: what is the novelty of looking at higher education institutions and academic departments within these as complex adaptive systems?

2. Sustainability, systems change and higher education

Higher education systems are always subsystems of the wider society to which they have to respond (Moore, 2005; Sterling, 2004). Their responses are to a large extent guided by a sense

of demands, policies and values of the society in which these systems are located. It is also fair to assume that the relation between systems and subsystems is always a co-evolutionary one as subsystems also have an impact on changes in the overall systems. In this respect, it is useful to be precise in determining what we understand by failure. System failure can refer to different situations such as failing in meeting pre-defined objectives, having inappropriate objectives or causing negative side-effects (Chapman, 2002). Most of the higher education policy reforms programs seem to be motivated by this perception of system failure. These reforms which emphasize system efficiency and competitiveness, consisted in the implementation of market mechanisms and evaluation initiatives assuming the shape of benchmarking and quality assurance programs. However, if we introduce the notion of system sustainability, we have to move from this perception of system failure to one that embraces the co-evolutionary aspect of systems. In this sense, if we accept that our educational systems are failing, we have to understand it in relation to failures in the overall systems into which higher education institutions are nested. It is important to bear in mind here that from a complex perspective, sustainability does not resonate with system equilibrium and predictability (Allen, 2006). It is rather the recognition that outcomes in living systems usually emerge from complex nets of interactions in unpredictable ways. This assertion that derives from analogies and metaphors from the natural sciences is usually translated to the study of human organization by highlighting the need to learn to live in the context of complex world that is always changing and accept our inability to predict and control the future (Stacey, 2010a). In this context, instead of the search for perfect equilibrium, sustainability should be understood as “the capacity to respond, to adapt and to invent new activities” (Allen, 2006, p. 159). This is different from an open-system perspective that has been powerful in organizational studies claiming that organizations are selected according to criteria of equilibrium adaptation (Stacey, 1995). In this dominant perspective, there is a cause-effect relation between the action of leaders and the capacity to bring organizations to a predictable state of adaptation to the environment. In this perspective, dynamics of success are usually associated with equilibrium, stability and predictability.

System thinkers depart from the standpoint that we are facing the failure of our overall living system due to what they regard as a crisis of perception which is characterized by a context in which a dominant mental model does not provide answers and solutions that satisfy questions and challenges of its time. For Brown (2001) this crisis of perception consists in the fact that we have developed a worldview that sees the environment as part of the economy rather than

recognizing that our economical relations are part of a larger system that we call the environment. This hegemonic view in economy and in the formulation and implementation of social policies – among which higher education reforms are located - leads to an unsustainable relationship with our environment. It has been identified that the main challenge of our time consists in creating social and cultural environments in which we can satisfy present needs without restraining the possibilities of future generations and for that to happen a paradigm shift needs to occur (Capra, 1996; Gladwin, Kennelly & Krause, 1995). Narrowing down to the case of higher education, a shift in paradigms would necessarily involve a “whole system shift” which would bring implications to what Sterling (2004, p. 64) calls as the four P’s of educational change: paradigm, purpose, policy and practice. The concern with change that permeates this article bases itself in Sterling (2004) assertion that the main problem facing higher education institutions today is that they have historically consolidated a position as teaching and research systems rather than reflexive learning systems. Furthermore, higher education institutions have historically been engaged in the provision and transmission of knowledge and development of instrumental skills associated with the perceived needs of the economy rather than deep learning. The concern with change and emergence of different patterns of behaviour and innovation is therefore embedded by the perception of these problems.

Crisis of perceptions are not resolved simply by the implementation of improvement reforms of organizational structures but involves a rethinking of educational goals and learning levels that go beyond the quest for efficiency and effectiveness that are inherently bounded on a dominant paradigm that gives signs of exhaustion. Thus efficiency and effectiveness are terms that need to further defined. System efficiency is the main argument behind policy reforms that in most Western countries which have attributed an increasingly managerial and instrumental character to higher education leadership (Sterling, 2004, Stacey 2010a). On the other hand, the literature review on the next section shows that the quest for effectiveness has been the main concern of studies into departmental leadership.

3. A review of the literature

Several studies highlight the key role of academic departments in universities institutional structure (Becher & Trowler, 2001; Berdrow, 2010; Gibbs, Knapper, & Picinin, 2009). Knight

and Trowler (2000) identify the department as the main activity system for most academic staff and claim that any effort to understand change in higher education institutions should focus on changes at the department level and reject simplistic conceptions of transformational leadership and organizational engineering. For Shattock (2003), the academic department plays a central role as training ground for young academics by sustaining institutional academic success and impacting the experience of undergraduate and postgraduate students as it provides an important element of intellectual atmosphere. On the other hand, it is also in the everyday life of academic departments vested in disciplinary authority that informal mechanisms of resistance to centrally or externally designed change initiatives can be observed. In the jargon of the theoretical framework that this article suggests, these mechanisms are called the “art of resistance” (Stacey, 2010a). The review of literature about leadership in institutions also shows that often organizational change in higher education institution has been presented through the introduction of unresearched ideas about management. It has happened sometimes by importing ideas that were initially designed to tackle challenges faced by business organizations that are usually associated with an image of success (Birnbaum, 2000). That has led to a paradoxical situation in which organizational change initiatives in educational institutions are rarely guided by educational ideas (Shattock, 2003). Another criticism comes from Middlehurst (2008) who questions the utility of most of the literature into higher education that still attributes a heroic role to leaders which does not correspond to organizational reality of academic departments.

Effectiveness seems to be the key word in the study of departmental leadership as the literature review conducted by Bryman (2007) demonstrates. Often departmental leadership has been discussed in terms of determining patterns of behaviour of those occupying formal leadership positions to be associated with effectiveness at the departmental level. Bryman’s review listed several aspects of leader behaviour identified by articles published between 1985 and 2005. Some of these aspects were related to moral issues such as being considerate, trustworthy, having personal integrity and acting as role model. Others aspects were related to the ability to communicate a clear sense of direction and strategic vision and/or creating a collegial work atmosphere. Some other aspects were related to specific actions such as providing feedback performance and adjusting workloads to stimulate scholarship and research. As Bryman recognizes, these are general aspects that together do not constitute a competency model for effective departmental leadership. For him, among the reasons why these characteristics of leadership should not be seen as a set of universal prescriptions are

indeed the lack of concern with context and situational diversity and, the fact that it addresses only the role of formal leaders. Most of these characteristics can be associated with the open systems movement in organizational studies that attributed leaders with the role of establishing goals and shared vision. Once again here, an image of stability and a relation of cause-effect between the actions of individual leaders and organizational outcomes are presented. Furthermore, it is a central argument of this article that there is no clear link of the perceptions of leadership expressed in the literature in and organizational transformation.

The issue of change is more present on the study conducted by Gibbs et al. (2009) aiming at identifying elements of effective practice in departmental leadership for quality teaching. Their study built upon previous studies that concluded that while there were examples of institution-wide strategies aiming at improving university teaching, more often teaching development was the result of initiatives within departments (Gibbs, 2005). Whole university-wide initiatives more often emerged from successful initiatives taken in individual departments rather than the other way around. They observed that changes in teaching more often emerged from small-scale initiatives rather than being commanded by the top. The authors observed that in neither of the nineteen cases that they studied, leaders produced excellent on their own but, rather contributed to teaching development with a combination of different activities depending on the characteristics of each context. The studies by Gibbs and associates provide some valuable insights into change such as focus on contextuality and emergence. It is important to notice here that the common trace of the study conducted by Gibbs et al. (2009) and those identified on Bryman's literature review is the concern with effectiveness.

In a more recent study, Bryman and Lilley (2009) conducted interviews with leadership researchers in the United Kingdom regarding their perceptions of leadership in higher education. This study did not single out any factor relating leadership to effectiveness although three factors associated with failure were prominent: lack of trust, failure to consult with others, and not recognizing problems. Furthermore, what emerged from interviews was a sense of unease with the process of seeking out effective forms of leadership in academic departments. However, the focus and search for effectiveness which seems to be the explicit motivation in all these studies needs to be further discussed as it brings implications to interpretations of changes and the formulation of research questions. One way of doing that is to use Drucker's (2006) distinction between effectiveness and efficiency. He claims that there

is a common confusion between the two terms in which the difference consist in the fact that while effectiveness means *doing the right things*, efficiency means *doing things right*. For him, most management tools focus on efficiency. The difference between efficiency (doing things right) and effectiveness (doing the right things) is an important one. Academic departments are subsystems of higher education institutions which are on their turn nested systems in societies where dominant political discourses emphasize competitiveness and system efficiency. In this sense, most of the studies into departmental leadership implicitly or explicitly embed a perception of organizational needs of academic departments in relation to environmental changes that is different from what is emphasized by central policy reform initiatives. However, little in these studies refers to the role of lectures as learners and how learning happens in academic department. The choice of focusing on efficiency, effectiveness or complex change requires different levels of learning which are discussed in the next section.

4. Learning and change in higher education

The work of Senge (2006) is probably the most influential application of a system perspective developing the concept of organizational learning by claiming that learning is a fundamental characteristic of adaptive organizations. His organizational learning perspective described the leader as the designer of the whole organization and thus as the integrator of learning ideas. Even though Senge sees leaders as a part of the living systems that they design, his perspective still contextualize leaders as central planners in designing and managing new ideas, guardians of organizational vision and also as teachers. Both the designing role of leaders and the concept of the learning organization are often either questioned or reduced by complexity theory (Stacey, 2006). For example, the concept of complex responsive process presented by Stacey (2006) has as its main implication the assertion that learning is an activity of interdependent people rather than as an exclusively individual process. This concept also rejects that idea that an organization (a thing) can learn.

Changes always require some level of learning. However, whole system change which are characterized by high levels of uncertainty and disagreement, involve shifts in our belief system. These are paradigmatic changes that demand higher levels of reflection and thus deeper learning than changing towards improving or reforming a system within the border of

a paradigm (Sterling, 2006). Most of the discussion about learning in higher education has focused on students' learning which might have a *surface approach* or a *deep approach*. Quality learning is associated with the deep approach in which students go beyond the surface to understand meanings in a critical manner rather than only memorizing information. This approach to learn with its aspect of creation and change in personal meanings has a transformative potential as learning is seen as

a way of interacting with the world. As we learn, our conceptions of phenomena change, and we see the world differently. The acquisition of information in itself does not bring such change, but the way we structure that information and think with it does. Thus education is about conceptual change, not just acquisition of information (Biggs, 2007, p. 13).

The shift in educational paradigm from a content-centred to a learning-centred approach is much more than a shift in terms of pedagogical or presentation techniques but a deep cultural change in higher education that involves changes in how faculty perceive their role in education (Nygaard & Holtham, 2008). So we are talking not only about change in students approach to learning but also change in how teachers conceptualize their activities which only happen when deep learning takes place. The three levels of learning described by Bateson (1972) provide a useful tool to enlighten this discussion. The levels are:

Learning I – “to learn”

That is the level of learning that occurs in “right-wrong” situations in relation of perception of errors in errors in choosing the right alternative. It involves the development of new skills and the accumulation of new knowledge. This is the level of learning that is most emphasized by in higher education learning and management (Tosey, 2006). It is the central focus of the quality raising and assurance discourse in higher education (Sterling, 2004). It is usually phrased in terms of “doing the things right” or “doing things better”. Learning here is seen with a focus on efficiency.

Learning II – “to learn to learn”

Learning here involves a character that is more reflexive and contextual than on learning level I. For Tosey (2006), this learning level is essentially about learning the patterns of the context where action is taking place. Context is related to a process of social influence but is also

interpreted different by different individuals and therefore consensus is not always present. It is often phrased in terms of “doing the right things” or “doing better things”. The focus here is on effectiveness.

Learning III – “to learn to learn to learn”

For Bateson (1972), one is driven to learning level III by anomalies or accumulation of problems that remain answered at the level II. That is the level of learning associated with paradigmatic changes. For Sterling (2004), this is the learning level that has the epistemic character that is therefore associated to most profound changes. It is often phrased in terms of “seeing the world differently”. The focus here is on transformative change.

Learning can serve either to keep a system in a condition of stability or change it to a new state in relation to its surrounding environment. So the possibility of reorientation of higher education guided by a principle of sustainability depends on deep learning not only from students but from individuals across different level of the institution. As these changes are related with the creation of meaning at the personal level, an approach to leadership focused on determining change by sharing values does not seem to represent levels of uncertainty related to system change. Creation of meaning can never be understood as linear top-bottom process guided by a principle of monocausality. Thus, the richness of the approach that I would like to suggest here is that it focuses on changes as emergent processes that are non-linear and unpredictable.

5. Academic departments as Complex Adaptive Systems

The “new science” of complexity can be considered a paradigmatic change in the natural sciences by moving away from a Newtonian linear and mechanistic worldview in which cause-effect thinking is expected to fully explain reality (Byrne, 1998; Marion & Uhl-Bien, 2001; Tôrres, 2005; Urry, 2005). In the past two decades, complexity theory has become more influential in the social sciences and in organizational studies by moving from the focus on systems stability and order towards focusing on innovation and change emerging from instability and diversity in rather unpredictable ways. For Liang (2010), complexity theory is

a vital emerging knowledge domain about humanity and its systems facing sustainability challenges.

For most theorists, complex adaptive systems (CASs) are the basic units of analysis in complexity theory. Organizations seen as CASs are networks of interacting, interdependent individuals or groups of individuals that are linked in a common dynamic by common goal or need (Uhl-Bien, Marion, & McKelvey, 2007). Some authors (Stacey, 2010a; Uhl-Bien et al., 2007) have used the example of the human brain as a CAS as it is composed of a large number of neurons which can be thought as agents discharging electrochemical energy and are connected to only a relatively small number of other agents in a process of responsive interaction. This local activity produces patterning of activity across the whole population. Although these patterns have to be coherent in order for the brain to function, population-wide patterns emerge without any centralized program for the collective pattern. It is not possible to identify any individual agent determining principles of local patterns of interaction or the evolution of these patterns in a system. However, it does not mean that agents are free to do whatever they want as their actions are constrained by the evolution of new patterns in which agents constrain and enable each other. This process of constraining and enabling is what constitutes power in the context of organizations. In this sense, emergence cannot be understood as a process in which outcomes come out randomly but as the result of many local interactions: “creative-destructive, evolving and repetitively struck, surprising and familiar, predictable and unpredictable patterns emerge across a population of agents because of what all the agents are doing and not doing in their local interactions” (Stacey, 2010a, p. 65). By adopting this view, organizational change involving level III learning and cultural change becomes an emergent process rather than being exclusively designed. For me, the definition of a CAS presented here resonates a lot with the organizational reality of higher education institutions. Particularly in large research universities, there are individual agents such as teachers and administrators, groups of agents and external forces who do not linearly determinate patterns of behaviour and where changes emerge from the interplay of many different interrelations. That is a promising model to address the dynamics of change in environments with multiple and contradictory demands such universities.

Investigating academic departments as CASs brings implications that challenge dominant hierarchical views of leaderships. It expands the locus of leadership from individualized actions to innovative, contextual interactions that take place across a whole social system

(Lichtenstein, Uhl-Bien, Marion, Seers, Orton, & Schreiber, 2006). The shift of focus of analysis from “independent variables” to exploring complex interactions initially brings an ontological clash with the traditional concept of leadership. Fenwick (2010) has even suggested that complexity theory does not contribute to the study of leadership by arguing that the basic notions are inadequate to address issues of power relations, politics and responsibility. She claims that the concept of leadership essentially depends on the assumption that the leader or group of leaders stands aside the system and in whom control is identifiable. Her argument is that while control in CAS is emergent, in leadership it is intentional. Fenwick is correct when she states that traditional leadership approaches and complexity thinking emerge from different ontologies. However, I do not agree that complexity theory does not provide tools to understand leadership in relation to challenges faced by today’s organizations. If we see leadership as part of the set of relations that constitute a system, then complexity theory with its focus on interrelations is a powerful perspective in a process of reconceptualizing leadership. Power relations, responsibility, accountability, politics – also in its negative sense – and the “art of resistance” are all part of interrelations throughout out which the dynamics of CASs take place. Ontological clashes, as described by Fenwick, are integral aspects of paradigmatic changes in which assumptions underlying a worldview are challenged giving rise to a new one. In the next section I will discuss further implications of this new approach to the study of leadership in higher education.

6. A different approach to departmental leadership

There is persistence in management studies in presenting sets of tools to leadership practice that will arguably produce success (Sims, 2010). Criticism of these tools is usually expected to present other sets of tools and recommendations that substitute old ones. Recommendations may range from practical techniques related to everyday life situations, to recommendations focusing on a long term perspective emphasizing symbolic aspects of the organization like sense of mission and shared vision. This expectation is usually based on the assumption that we need to know what individual leaders should be doing as designers and decision-makers and that there is a more or less logic relation between organizational success – often expressed in terms of improvement and competitive advantage – and the action of formal leaders. However, it is exactly perceptions of limitations and of exhaustion of this linear

perspective that gives rise to complexity theory as an alternative thinking in organizational studies. As Stacey persuasively states, the global financial crisis whose consequences we have been suffering since 2007 illustrates the need to rethink management moving from the demand for tools and techniques. Stacey (2010b) states that

It is hard to understand how anyone who has paid any attention to the events of global credit crunch and recession that we have all experienced since 2007 can continue to believe that there is a clear, reliable body of knowledge on management containing prescriptive tools and techniques for its successful application. Surely the great majority of major international banks and other commercial organizations have not been successfully applying tools and techniques over the past few years for it they were there would not have been such mess. (Stacey, para 2)

The traditional collegial model of university leadership with its “first among equals” (McNay, 1995) approach has always differed from most common perceptions of leadership in which the leader is expected to play a designing role stepping outside the system. However, the linear thinking has influenced policy-making in most parts of the world in the past three decades which was expressed in terms of reform programs in the public sector emphasizing competitiveness and market mechanisms as the route towards economic growth and social progress. In higher education management reform, leadership is usually seen as a decisive factor based on the claim that quality of management, communication and decision-making progress are key factors to survival in a competitive environment (Bleiklie, 2005). Traditional collegial forms of university leadership are regarded as inefficient and not likely to equip higher education institutions with the organizational capabilities to operate in an unpredictable environment. For me, it is a paradoxical context where the environment is described as constantly changing in an unpredictable way while recommendations to leadership in system reform programs seem to be guided by a principle of certainty and control expressed in terms of “clear objectives” and “good communication”.

The main argument of this article is that the focus on identifying patterns of behaviour of individual leaders and producing toolkits for leadership practice does not contribute to the understanding of processes of transformative change beyond claims for efficiency and effectiveness. However, it is not being said that leaders do not make any difference. For their visibility and power relations, leaders are important players in the set of interrelations from which new patterns of behaviour, innovation and change emerge. But if we focus on this process of interrelations, then leadership can only be seen as relationally rather than being an

absolute value: “leadership, therefore, involves taking a role whose meaning exists in the practice of social relationships between people. It is only on this basis that leadership is functionalized in ongoing process of human relating” (Williams, 2006, p. 55). In the complex perspective, the leader is part of the system and is operating with the unknown like anyone else. If we think specifically about the role of the formal leader, it seems that that her/his role is to work with communication among members in imaginative ways opening for the possibility of new meaning, reflection, further exploration and highlighting the importance of collaborative enquiry (Stacey, 2010a). It is a paradoxical activity of both being at the same time part of processes of interaction, and sometimes stepping aside and trying to articulate what is emergent from these. It is different from applying predefined techniques and providing solutions. It does not mean that there is no space for design. However, the designing role here means designing with intent rather than with control. The shift from educational paradigm from a content-centred towards a learning-centred is thus compatible with emergence and unpredictability which are the main characteristics of complex organizational change. Such demands a shift from a view of leadership that presents answers and promotes a shared vision to one that opens ways for further enquiry and creation of new meaning. By accepting this understanding of change, we need to investigate how deep learning – or learning level III learning – takes place in academic departments. In this sense, it is vital to move our research field towards addressing the following topics:

- Learning: How does transformative learning take place in academic department? If we assume that learning is an activity of interdependent people, then what are the dynamics of interaction and situations from which learning emerges? That necessarily means seeing academic staff not only as teachers but also as learners.
- Leadership: what are the dynamics of interaction from which the role of leaders emerge? How are these dynamics related with learning and creation of meaning? What are the transformations and continuities emerging from these dynamics? What are the processes of recognition? What configurations of power relations emerge?
- Resistance: What are the mechanisms of resistance to change and why? How are these related to internal and external values and an environment to multiple and contradicting demands?

Most studies in departmental leadership have in one way or another mentioned the importance of ethics. That is a topic that demands further exploration as ethics is a crucial point of sustainable change (Capra, 1996). For Griffin (2005), departing from the recognition that organizations are processes of communication and joint action far from equilibrium questions the hegemonic view of ethics as universal moral principles independent upon social and natural contingencies. Similarly, Bai (2003) claims that an ethical paradigm compatible with complexity theory necessarily challenges this view of ethics based on system stability. As a consequence, it questions a predetermined view of ethics in which leaders autonomously take decision independent of contingencies. The alternative view suggested by Griffin (2005, p. 26) implies that “a theory of leadership is also a theory of ethics. Ethical values emerge in interaction as reflection of the emergence of leaders. Large-scale organizational and cultural events emerge in everyday social interaction through the participation in local events”. The investigation of what ethical values are present in academic departments and understanding the dynamics of interaction from which these emerge is an exciting topic to be explored by those interested in researching university leadership.

7. Conclusion

This article shares with previous studies on departmental leadership, the assumption that academic departments are key units of analysis - perhaps *the* key unit - in the investigation of organizational change in higher education institutions. However, it is claimed here that researching departmental leadership demands that we formulate research questions that are different from the questions that have been raised so far. Higher education reforms in higher education have been usually guided by a principle of efficiency towards market competitiveness. On the other hand, most of the literature about academic departments has focused on identifying leadership behaviour and characteristics associated to effectiveness. Throughout this paper I have suggested a different approach to departmental leadership claiming that transformative change towards sustainability imply in a higher level of learning. Therefore leadership needs to be discussed not only in terms of searching for system efficiency or effectiveness but its relation to deep learning and innovation in educational practices. Deep transformative changes emerging from non-equilibrium, always involve uncertainty and moving towards an unknown future. In order to understand leadership in

turbulent times faced by higher education institutions, there is the need to understand how leaders can positively motivate networks of individuals to operate in a context where conflicts and dialog exist and that are essential for learning in academic departments. Hence, there might not be possible to identify one way to lead in academic departments as leadership as a complex phenomenon is always related to contextual processes and uncertainty. Although moving towards a future so full of uncertainties might cause anxiety and even frustration, it is the claim in this article that recognizing that many outcomes are out of control of rational design is the approach that best illustrates organizational reality. Paradoxically though – and taking a complexity view is essentially about recognizing paradoxes – a shift in mind that accepts relations of interdependence, uncertainty, the importance of ethics and human creativity will hopefully path the way towards sustainable global change.

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Attachment I – Consent Form

Researcher: Fabio Bento
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Norwegian University of Science and Technology

Description of the Project:

The initial assumption of this project is that there is today a need for a better understanding of how and where good teaching and learning take place. Another central assumption is that improving teaching involves developing systems of work relations, most significantly at the departmental level. In higher education institutions, the academic department or subunit of it is usually the main activity system for most academic staff. The goal of this study is through an international comparative perspective to understand how leadership and quality teaching/learning are understood in academic environments. Ethnography is a research strategy conducted in a natural setting over a certain period usually collecting observational data. The goal is to understand and to describe a cultural setting. Interviews with academic staff will be the main data gathering method.

Participant Declaration:

I hereby consent to participate in the above mentioned research project. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. I freely and voluntarily agree to be part of this research study, though without prejudice to my legal and ethical rights. I understand I may withdraw from the study at any time. I have received a copy of this consent form.

Date

Participant Signature

Researcher Declaration:

I have explained the nature and purpose of this research study and the procedures to be undertaken. I have offered to answer any questions and fully answered such questions. I believe that the participant understands my explanation and has freely given informed consent. It is my responsibility that all information will be treated confidentially, that the anonymity of my interviewees will be protected, and that all data (written or eventually audio recorded interviews) will be destroyed as soon as this project is concluded.

Date

Signature

Attachment II – Interview guide

The following open-ended questions were the starting points of conversations which aimed at gathering perceptions of leadership and teaching in the two studied departments

Open-ended questions to department heads and deputy heads:

- How do describe your activity as a department leader?
- How would you describe decision-making in your department? How are priorities set?
- What was your motivation to assume this position?
- Do you see contradiction between internal and external demands?
- How do you experience collaboration/collegiality in your department?
- Would you say that leadership is distributed among the staff? If so, how does is manifest itself?
- In your opinion, what is quality in teaching/learning?
- Anything you would like to add?

Open-ended questions to academic staff:

- Could you please describe your role/position?
- In your opinion, what is quality in teaching/learning?
- Perceptions of changes in relation to your activity as teacher?
- What is your motivation to teach better?
- How do you balance research and teaching?
- How do experience leadership in your department? What impact does it have on your work? Do you perceive changes?

- How do you experience interaction with colleagues in your department?
- Anything you would like to add?

