

Changes in funding of higher education and research: stronger governmental steering and organisational control of higher education institutions and academic behaviour?

Gigliola Mathisen Nyhagen



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Gigliola Mathisen Nyhagen

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Department of Administration and Organisation Theory

Faculty of Social Science

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Foreword

The tradition of studying politics, public administration and organisation has been important in my dissertation. These research interests are highly related to my background of political science and organisation theory at the Department of Administration and Organisation Theory and my affiliation with and work at the Stein Rokkan Centre for Social Studies. In particular, the strong tradition within the department of institutional theory and historical institutionalism has inspired the dissertation. The recognition that institutions shape individual thinking and behaviour, but also that individuals are active in shaping institutions is highly relevant, as well as the idea that organisations can be understood and studied in their relation to the environment and historical context. The strong tradition for carrying out empirically based research in the department is reflected in the dissertation. The research group Knowledge, politics and organisation¹ at the Department of Administration and Organisation Theory has been a crucial site for the process leading forward to the dissertation. The research group's research seminars have been important for generating new questions, receiving comments from colleagues on drafts and situating the dissertation in a larger empirical and theoretical context. I must thank the leaders / members Ivar Bleiklie and Svein Michelsen, as well as Tor Halvorsen who during my master thesis shared his interest in internationalization in higher education. In particular I want to thank my supervisor, Professor Ivar Bleiklie, for commenting on drafts, including me in networks and research projects, and for being patient

¹ This research group at the Department of administration and organisation theory has existed under different headings or names. In one period the current name, Knowledge and politics, was a reminder of the relationship to the conferences "Knowledge and politics". From 2003 to 2008 conferences were organised in Bergen; in 2008 "Elitism vs. creativity? The political and economic construction of knowledge hierarchies in times of mass higher education", in 2007 "America - a model for Europe? Comparing regions in the debate on higher education and research", in 2006 "Towards a New Contract Between Universities and Society?", in 2005 "The Bologna Process and the Shaping of the Future Knowledge Societies", in 2004 "Politics and knowledge: Democratizing knowledge in times of the expert" and in 2003 "Knowledge and politics – towards the new knowledge society".

throughout my doctoral project. Especially in the last stages of the dissertation the motivation and clear comments from my supervisor have been crucial. Thanks to my co-supervisor, Professor Christine Musselin, for commenting on drafts and for creating an opportunity for me to host Centre de Sociologie des Organisations in Paris. Also thanks to the PhD network around higher education research which developed in relation to the project “Steering of Universities” and Euredocs (European research and higher education doctoral studies). In particular the collaboration with Lukas Baschung has been rewarding for the dissertation.

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I want to show my gratitude to my parents, Olga and Kjell. Thanks to my mother for her support and care; she has been the symbol of my yonder* – being in between Norwegian and Colombian culture. Thanks to my father, who passed away a year ago, but during my childhood aroused my curiosity for knowledge and invited in reflection.

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*Yonder refers to “between here and there” in Siri Hustvedts “A plea for eros.”

Abstract

Funding of higher education and research has experienced substantial changes in the last decades. Although there is variation across European countries, a stronger competitive element increasingly characterises higher education research funding. In spite of the growing political attention to policies, reforms and means related to higher education and research funding, changes and implications remain to be systematically analysed. Thus in this dissertation changes in funding of higher education and research as well as the implications for higher education institutions and academic behaviour is studied systematically across countries, during different periods and across different levels of analysis. The question that is particularly addressed is the extent to which these changes are followed by stronger governmental steering and organisational control of higher education institutions and academic behaviour. The extent to which the implications of changes in funding higher education and research imply that universities move from being specific organisations to more formal organisations is also a question that guides the dissertation.

The dissertation consists of three articles that deal with the different levels and topics described above. The first article compares government funding policies of universities in three European countries (England, France and Norway) from the 1980s to 2010. The article investigates specific reforms in the countries and uses a comparative approach to study the implications of political and administrative characteristics for developing government funding policies of universities. The conclusion in the article suggests that the relationship between political-administrative characteristics and the degree of changes in government funding policies of universities is a complex one. The article shows that three different countries belonging to different political administrative systems associated with different expectations did experience substantial change in funding policies of universities. A main finding concerns the lack of explanatory force of political-administrative characteristics which suggests that the classification can be questioned. This is further supported by finding path dependent change mechanisms as more useful for explaining how change can come about by smaller modifications in institutional structure as well as by larger transformations.

The second article analyses the implications of funding policies and funding arrangement for research and research organisation at universities. The article addresses universities' ability to generate problem choices based on internal scientific criteria compared to external demands. In the article knowledge production is considered both as related to disciplinary autonomy but also existing in a context where research funders require disciplinary borders to be redefined. The case study of a university-based research centres serves as empirical entry point to study these questions. The analysis of the research centre show that different institutional logics influencing researchers' problem choices were related to different phases. The investigation supports a shift in institutional logics resulting from changed premises in the funding environment and political intervention from central bureaucracy and the university leadership. The new institutional logic did challenge the past logic but findings supports a co-existence of logics rather than replacement.

The third article addresses the implications of funding arrangements for academic work, and studies new organisational structures at universities that are related to financial instruments such as competitive research funding and competitive funding for doctoral education. Empirically this is studied by a case study of a research centre and two case studies of doctoral schools at a Norwegian university. The article addresses the emerging division of work that seems to have been spurred by the increasing differentiation of the academic profession. The article finds some support for changes in academic work however specialisation in terms of functions is less than expected but on the other side a collectivization of academic activities is identified in all the cases. The analysis nevertheless supports a continued decoupling of formal and informal way of organising academic work. Therefore academic work seems to be only partly influenced by new formal arrangements and traditional structures for organising academic activities are characterised by resilience.

A main conclusion in this dissertation confirms that changes in funding of higher education and research in the last decades are related to variation in time and scope. Variation is related to time as changes take place in different periods in the different countries and in scope as changes differ in the degree of comprehensiveness. Another central conclusion is that

implications of changes for higher education institutions and academic practice are evident but seems to be less related to intentions behind reform. Findings in this dissertation support the initial claim of stronger governmental steering and organisational control of universities through funding means but also the presence of other forms of academic control. The analyses also show that there is not a convergent movement towards universities as less specific organisations due to changes in funding of higher education and research.

Chapter I:

Changes in funding of higher education and research: stronger governmental steering and organisational control of higher education institutions and academic behaviour?

1.1 Introduction

Funding of higher education and research has been subject to substantial changes in the last decades. Although there is variation across European countries and higher education institutions, a stronger competitive element both in the funding of education and of research is part of this picture. Indicators such as student numbers, externally funded research from research councils, and level of publication have been important measures for performance-based funding to universities. The arguments for increased competition in funding of higher education and research are, among others, central authorities' demand for accountability of higher education institutions (Calhoun 2011). Governments' ways of managing is increasingly combining more control with more financial autonomy for universities (Bleiklie, Enders, Lepori and Musselin 2011, Ferlie et al. 2008). In part external pressure has influenced countries' funding policies of higher education and research as international models are diffused across countries. But also national reforms and the different uses of funding as a policy instrument have influenced the way funding policies of higher education and research are shaped.

The dissertation particularly addresses the assumption of increased control and steering by governmental authorities of public organisations such as higher education institutions, as well as individual academic behaviour. I study funding of higher education and research at several

levels as well as different aspects of funding². I study: (i) funding at the policy level in three European countries, (ii) the implications of funding policies and funding arrangement for research and research organisation at universities, and (iii) the implications funding arrangements have for academics and academic practice. Accordingly, the dissertation holds particular interest regarding the relationship between the different levels of analysis. For instance, one can question how governments' financial policies substantially influence higher education institutions, their research basis and academics. Whether there is a tight connection between the goals formulated in funding policies, funding arrangements and the intended results is up for assessment. Also what can explain variation between countries' public funding reforms and funding arrangements and how that variation is related to time is important. This is particularly important for the part of the dissertation which constitutes a national comparative analysis. The national comparative analysis is an attempt to address the need for systematic treatment of countries' political and administrative characteristics in studies of higher education.

Another assumption in this dissertation is that the changes in funding of higher education and research for universities involve moving from being specific organisations to more complete organisations. This assumption is justified by the fact that reformers of higher education seem to abandon the perception of universities as peculiar organisations with particular characteristics and more often consider universities as any formal, tightly hierarchical, managed organisation (Musselin 2005, Bleiklie, Enders, Lepori, Nyhagen forthcoming). This is in contrast to the traditional literature in higher education studies where universities are studied as autonomous organisations characterized by the academic profession and scientific disciplines.

² See page 16 where the concepts of funding is clarified.

To a great extent, the conclusion of the dissertation confirms the substantial changes that have taken place in how higher education and research are funded. Funding reforms and funding arrangements are established to create greater competition. Still, the scope of changes as well as the implications for higher education institutions and academic behaviour seems to take place in a relationship between public policies, policy instruments and sectoral characteristics.

The research questions that will be of particular interest in the dissertation are:

1) What changes have taken place concerning funding of higher education and research in the last decades? 1a) How have changes in funding of higher education and research taken place in different periods in various countries? 1b) Why have these changes come about?

2) To what extent have changes in funding of higher education and research at the policy level had implications for higher education institutions and for academic practice? 2a) To what extent are implications a signal of increased governmental steering and control of university organisations? 2b) To what extent are universities becoming less specific organisations?

There is a great deal of literature and several research fields that are useful for addressing the questions in the dissertation. It draws on literature in *higher education research*, *science and technology studies*, *organisational studies* and *the public management tradition*. The field of higher education research is important for contextualizing the dissertation within a broader field of study. This research field represents a long tradition of studying national higher education policies, higher education institutions, the academic profession and individual academics. The field is important for identifying central actors and relationships most likely to appear in higher education systems such as the state, the market and the academic profession (Clark 1983). The literature in the field of higher education and research that specifically concerns the question of funding is useful for the dissertation for analysing specific processes and actors in a country's funding system (Shattock 2012, Salter and Tapper 1994), for conceptualizing funding as a policy instrument that influences the relationship between the state and universities (Sørlin 2007, Paradeise et al. 2009), and for understanding

the implications of market mechanisms in funding arrangements (Slaughter and Leslie 1997). The field of Science and Technology Studies is useful due to its long tradition of studying research policy, funding patterns and how new funding instruments influence research and researchers (Lepori 2006, Hicks 2012). This field is also interesting due to its tradition in studying knowledge production in more heterogeneous loci of research (Gibbons et al. 1994).

Organisational studies of universities carried out in the 1960s and the 1970s where universities were found to be a special kind of organisation are essential in the dissertation (Cohen, March and Olsen 1972 and Weick 1976). The conclusion that these studies produced as to perceive universities as loosely coupled and organised anarchies are central for analysing the implications of the changes in funding of higher education and research. For many reasons one can question whether this is still a typical picture of the university organisations, as public policies and higher education reforms often picture universities as more tightly coupled organisations.

Research and literature within comparative public management and new public management is significant in the dissertation. The extensive experience within this tradition in studying public reforms of public organisations, in several countries and over time, and the variation in reform trajectories is useful for this dissertation. Also the interest in analysing public reform as converging or diverging and the emphasis on explanatory factors such as political and administrative systems for the opportunity of public reform to trickle down can benefit understanding the influence of funding reforms on higher education institutions (Pollitt and Bouckaert 2004, Pollitt and Bouckaert 2009, Painter and Peters 2010).

Specific features drawn from the new public management literature provide important insights into the study of funding higher education and research. The relationship between reform ideas and models and their actual application (Hood 1995), and the interplay between international ideas, national structures, historical-institutional context and specific institutional traditions (Christensen and Lægreid 1999) are some of the features that are pursued in the dissertation. Also, understanding how reform ideas influence a particular sector where particular forms of organisations and actors exist, and that reform models to a great

extent blend with countries' higher education systems and political-administrative structure is an important point of departure in the dissertation (Bleiklie, Enders, Lepori and Musselin 2011).

Theoretically I use literature which has been important for understanding institutional development and institutional change and variation at different levels of analysis. Historical institutionalism is useful due to its focus on the relationship between institutions and individual behaviour, path dependency, the role of institutions for the diffusion of ideas (Hall and Taylor 1996, Pierson and Skocpol 2002). Using the literature of historical institutionalism, which has commonly been associated with blocking institutional change (Campbell 2010), might seem a paradox. However the literature that addresses the gaps or challenges in historical institutionalism is central for legitimating such an approach. The critique raised towards historical institutionalism's bias towards critical junctures as essential for change, as well as stability and path dependent processes, is important for the dissertation (Streeck and Thelen 2005, Palier 2010). The claim that changes can result from less evident movements and processes rather than comprehensive reforms remains significant for this dissertation.

1.2 Content of the dissertation

The dissertation comprises three articles that highlight different aspects of the main research questions. The articles can be considered as a specification and operationalization of the main research question within different empirical contexts. The articles analyse how funding is played out at the level of national political reform, the level of university and a research centre and at the level of the individual researcher. It is also studied within different national contexts; the Norwegian context but also in a European context comparing funding policies in higher education in three countries (France, Norway and England) from the 1980s to 2010.

The next section will clarify the concept of funding and how it is applied in the dissertation. A following section addresses the research questions and displays how they are specifically related to the various articles emerging from the doctoral project. Subsequently, the research

environment and research projects that have inspired the doctoral project are presented. Here I address specific sources of inspiration for the articles.

1.2.1 Clarifying the concept of funding

Funding in higher education and research in this dissertation is limited to public funding where the main financial sources materialise from being part of a public system of higher education and research funding. The research questions address funding in several meanings, applications and at different levels of analysis. In some parts of the dissertation, funding refers to *funding policies* and *funding as policy instrument* that is applied to carry out goals. In other parts, funding refers to *funding models* as such, how they have developed, their structure and core elements as well as assumed intentions. For instance, Genua (2001) distinguishes between incremental funding, formula funding and contractual funding, and links the different models with a historical development. *Funding arrangements* can be another way of classifying funding of higher education and research (Jongbloed 2004). This includes the funding base for the government allocations to higher education institutions, for instance whether funds are tied to educational outputs and performance, or rather to inputs, but also the degree of market orientation in the funding arrangements. One of the characteristics of the market orientation is the degree of competition following from funding decisions. Additionally, funding refers to the *funding sources* that are important for researchers and in particular research funding that is acquired on the basis of competition. This generates a focus on the different national or international funding agencies, and their role in influencing researcher choices. On some occasions the concept refers to higher education funding in general while on other occasions it refers to research funding awarded to higher education institutions. The dissertation will not address funding related to access to higher education and

models for financing students' education (Barr and Crawford 2005, Callender 2005, Frølich and Strøm 2008). These studies hold interesting reflections about the investigation of student payment and tuition fees which is empirically relevant in some countries discussed in this dissertation but less so in others. Also, in the national comparative part of the dissertation countries have been selected to fit a theoretical purpose³.

1.2.2 The research questions

In this dissertation I study mainly the public funding of higher education and research, although private funding arrangements for research cannot be excluded in advance. The dissertation relates to central discussions in political science such as formulation of public policies and implementation processes, the role of political-administrative systems, the tension between government control and autonomy and increasing management. It also relates to the classical discussion in organisational theory of the relationship between formal and informal structures as well as the relationship between different levels of organisation. Studying processes in higher education systems generates a focus on specific questions, actors and institutions that are influential in the field.

1.2.3 The research questions and delimitation

In the doctoral project I study (i) government funding policies of universities in three countries, (ii) how research funding and funding arrangements influence knowledge production and (iii) how funding arrangements influence academic practice and academic work. An important task is to study the relationship between the levels and topics which the research questions display. The order of the articles is closely connected with the research questions. The interest in the relationship between stated higher education policies and implications at the organisational level and the individual level therefore guides the sequence.

³ Discussed in the methodological section.

The research question *what changes have taken place in funding of higher education and research in the last decades* is related to the article “Between slow and comprehensive reformers: Comparing government funding policies of universities in three European countries”. This is studied by addressing government funding policies of universities in England, France and Norway. This is a study of funding policies and funding as a policy instrument in higher education and research that covers a period from 1980 to 2010. Thus the research questions *how have changes in funding of higher education and research taken place in different periods and in various countries* and *why have these changes come about* is attended to. Theoretically the article attempts to establish the countries’ reputation as reformers by pointing towards path dependent mechanisms which reveal that change can come about by smaller modifications in institutional structure as well as by larger transformations (Streeck and Thelen 2005).

The research question *to what extent have changes in funding of higher education and research at the policy level had implications for higher education institutions and for academic practice* is related to two articles. This question is studied by analysing the influence of government funding policies and funding arrangements represented by national and international funding agencies and public and private funding sources for research in the article “Lost in transition? Shifting institutional logics within a research centre of climatology at a Norwegian university”. The research question is specifically studied as the implications of new organisational structures related to funding arrangements for academic practices and academic work in the article “New Organisational Structures and the Transformation of Academic Work”.

The research questions that address *the extent that implications are a signal of increased governmental steering and control of university organisations* and *whether universities are becoming less specific organisations* are relevant for all three articles but also for the dissertation as a whole and the overall conclusions.

The individual articles address specific research questions. The first article “Between slow and comprehensive reformers: Comparing government funding policies of universities in

three European countries” is authored by G. Mathisen Nyhagen. The manuscript has been published in the International Journal of Public Administration. This article analyses the implications of political and administrative systems for public reforms in funding of higher education. The article focuses on path-dependent mechanisms related to incremental change processes with the ability to spur changes in public policies. The main questions in the article are firstly, *what changes have the involved countries experienced in government funding policies*; and secondly, *to what extent can changes be explained by the characteristics of the politico-administrative system?*

The second article “Lost in transition? Shifting institutional logics within a research centre of climatology at a Norwegian university” is authored by G. Mathisen Nyhagen and is submitted for review to the journal Science and Public Policy. This article addresses the extent that researchers’ problem choices are influenced by external demands through funding agencies’ research programmes as well as users in society. The extent that this influence is accompanied by change in researchers’ interests is also important. This is studied by institutional logics that exist or emerge in the context of making research priorities. The specific questions that are addressed are: *To what extent do external definitions of problem choices influence internal definitions? Which institutional logics are enacted when researchers define their problem choices? To what extent is there a change in logics? Are these competing or co-existing logics?*

The third article is “New Organisational Structures and the Transformation of Academic Work” co-authored with Lukas Baschung and published in Higher education in 2013. This article studies the influence of new organisational structures that are related to funding arrangements for academic work. The article questions *whether academic work is increasingly subject to an increasing specialisation and collectivisation*. In addition the authors investigate the claim of *universities as decoupled organisations as there are signals of tighter couplings which challenge the university as a specific form of organisation*.

1.2.4 Research environment and research projects

The doctoral dissertation⁴ has been linked to larger European projects funded by EU and the European Science Foundation. Some of the ideas in the doctoral project have been developed close to research projects such as the Steering of Universities (SUN) and the Transformation of Universities in Europe (TRUE). The SUN project⁵ took place from 2005 - 2007 and was a national comparative project of higher education in Europe. The project particularly addressed the governance of higher education in seven European countries⁶. Within this project a group of junior researchers or PhD students participated particularly in the part of the project that dealt with studies of doctoral schools and research funding (Paradeise et al. 2009). The ambition was to identify the impact of reforms taking place at the national level at basic levels in the university and for academics. Through project meetings doctoral students developed their individual PhD projects in many of the participating countries (Norway, France, UK, Italy, Netherlands, and Switzerland). Within this collaboration I developed the first ideas of my project related to research funding. In all participating countries there had been changes in the structure of research funding at the national level, how research funding was formally structured at universities and, for instance, expressed in organised research units such as research centers. The pressure for universities to increasingly acquire external research funding from national and international funding sources seemed to be a push for research centers as a tool for organisation. Another focus in the project was doctoral education in higher education and how it was increasingly becoming more formally structured and organised, for instance in doctoral schools.

⁴ I was awarded the degree Master of Administration and Organisation Theory in 2006 and I was accepted for admission in the PhD programme in 2008.

⁵ The project was selected as a Network of Excellence (PRIME) within the sixth European Framework Program.

⁶ France, Germany, Italy, Netherlands, Norway, Switzerland and the UK.

The TRUE project ran from 2009-2012. This comparative project consisting of eight European countries⁷ challenged the claim made in early organisation studies of universities as loosely-coupled or organised anarchies and worked from an assumption that the organisation of universities seemed to have changed (Bleiklie et al 2013). The assumption in the project that universities are becoming more tightly coupled, more formally and hierarchically structured organisations was up for questioning (Brunsson and Sahlin 2000). Throughout the project this has been studied at different levels: the national policy level of higher education and the organisational level of universities. The overall topic of changes in university organisations and the transformations of steering and governance arrangements that have regulated them since the 1980s are analysed in relation to a) national and European policies, governance structures and steering arrangements b) institutional governance and how it relates to academic work, academic disciplines and HE communities, and c) development and differentiation of higher education systems. These points were carved out into eight themes to be compared: 1) institutional autonomy, 2) institutional governance structures, 3) institutional funding, 4) academic work and careers, 5) higher education landscapes, 6) national policy making, 7) European policy, and 8) policy instruments and implementation (Bleiklie 2014). The TRUE project inspired one track in my PhD project: the analysis of various government funding policies in Europe analysed by focusing on political-administrative characteristics. To be able to carry out a qualitative study I reduced the number of countries to three (France, Norway and UK) that had experienced substantial reform in national funding policy and that belonged to different kinds of political-administrative traditions. A detailed elaboration of the research collaboration and data collection process can be found in the methodological section.

⁷ France, Germany, Italy, Netherlands, Norway, Portugal, Switzerland and the UK.

Throughout the doctoral project the core ideas have been adjusted from an interest largely in research funding at universities and how funding instruments and funding sources influence research and researchers towards integrating a broader interest in the relationships between higher education policies, academic forms of organisation and academic work. An interest in a national comparative perspective in the study of higher education and research funding has grown out of the participation in research projects. Increasingly perspectives from the public management tradition have been included in the project.

1.3 Background for studying change and variation in funding of higher education and research

The following section will describe the changes in higher education and research funding in Europe. The focus is on the main characteristics of the development and how these relate to past modes of university funding. Subsequently I elaborate how universities are specific forms of organisations and how this is related to changes in funding. The next part considers how the field of higher education and the study of higher education and research funding can be complemented with a public management perspective. A final section discusses current changes in funding universities and the consequences this has for the public mission of universities.

1.3.1 Characteristics of changes in funding of higher education and research in Europe

The background for the research questions are specifically related to the changes that have taken place in funding of higher education and research in European countries. Reforms have been aimed at an increasing use of financial incentives and performance indicators to control organisational behaviour as well as improving public sector efficiency and quality (Genua and Martin 2003). Some of the characteristics of the shift from a system where funding of higher education and research was highly related to the number of academic staff at universities or higher education institutions to a system increasingly based on performance indicators assessing results will be described here. It seems that in the last three decades financial means as a way of steering higher education institutions have increasingly gained importance as part of public policies (Paradeise et al. 2009). Both the research element and the teaching dimension have been targets for new and changing funding policies. Funding systems in

higher education are increasingly characterized by incentive-based and output-based models and with a more competition-oriented funding system (Weiler 2000). New forms of organizing and funding research are materialized through research parks, an increased emphasis on externally funded research and the creation of cross-disciplinary research centres (Bleiklie and Byrkjeflot 2002). Even though the general picture in Europe is that of public funding and ownership of higher education institutions by national or regional governments (Bleiklie 2006), governments increasingly use competitive elements in the public allocation process (Leifner 2003). Frequently a consequence of recent funding models is that universities are forced to look for alternative sources of income, which to some extent provide the institutions with more autonomy, but also place more responsibility on the universities. Despite the existing knowledge of the described shift, less is known about its consequences for the university organisation and the public mission of universities as well as for academics and research.

1.3.2 Universities as specific forms of organisation

The argument for studying changes in funding of higher education institutions is closely related to the idea of universities as specific forms of organisations. This idea is based on contributions made by organisational studies of universities in the 1960s and 1970s. These studies represented both an important contribution to organisation theory and to the study of universities and the specific organisational character of universities (Musselin 2004, Bleiklie et al. 2013). The ideas that developed reflected upon universities as organised anarchies represented by garbage can models (Cohen, March and Olsen 1972) and as loosely coupled systems (Weick 1976). Resulting from these organisational studies was the idea that universities differ in many ways from the understanding of formal organisations; universities have a distinct organisational structure and decision-making processes and their core missions of teaching and research are difficult to standardise (Musselin 2007). Following from this emerged a claim that there were characteristics considered as specific for universities; on one hand that academic activities are *functionally loosely coupled* and on the other hand that *teaching and research are unclear technologies*. In the context of higher education institutions functional loose coupling suggests a low degree of cooperation and coordination

in teaching and research activities (Weick 1976). The functional loose coupling, among other things, refers to the low degree of information sharing about other colleagues' activities. It is not an uncommon situation that one colleague is unfamiliar with other colleagues' activities and that the influence on each other's academic activities is low. This concerns both teaching and research activities. The loose coupling of functions is also created and sustained by the academics themselves. Limiting the cooperation and coordination can be achieved in different ways: only coordinate when required, limit the access to knowledge about one's activities, and limit interference of others by respecting their autonomy. Academic work is centered on the idea that teaching and research are unclear technologies. This is related to the complexities of teaching and research. Academic tasks related to research and teaching processes are difficult to describe which make them difficult to be prescribed. Research and teaching competencies are usually acquired through doing it by oneself, observing senior academics, or having one's work assessed by colleagues. There is largely an informal and person-based way of passing on knowledge about teaching and research activities. Due to teaching and research being hard to describe and prescribe, it follows that it is difficult to reproduce. Perceiving teaching and research as unclear technologies also implies that there is an unclear causal relationship between academic activities and results (Musselin 2007, Clark 1983). For instance the relationship between organizing teaching activities and influence on the students' results is not clear. Also the relationship between research organisation and research results cannot easily be explained. In general a way of measuring relevant explanations is lacking.

The specific character of universities also concerns their internal governance structure as these institutions usually have "organizational characteristics such as *decentralized internal authority* vested in the sub-units and individual professors, and a high degree of organizational autonomy from outside interests, be they public bureaucracies or market actors" (Bleiklie 2013). Thus considering universities as a specific form of institution has implications for the internal authority structure but also to how this structure provides universities with an opportunity to resist the influence of central authorities. Often the state-university relationship has been characterized by a great deal of autonomy for universities and with modest interference from governments.

The perception of universities as specific organisations is however challenged by reformers, politicians and bureaucrats as they tend to perceive higher education institutions as common organisations by removing or changing the particular organisational features. Basically universities are promoted as similar to business enterprises (Bleiklie et al. 2013). Emerging from this view is that managerial tools usually applied in the industrial sector, are frequently sought employed in universities. Within this context universities are supposed to become more entrepreneurial, more corporate and more accountable organisations (Musselin 2007).

Universities have been subject to classification into different models that describe the main features of the role of the state and its relationship to the university. These models prove to be relevant for understanding how funding has been used by the state as an instrument for steering universities, but also for the implications for universities and academics. The Humboldtian model has traditionally been characterized by “autonomy guaranteed and supported by the state mechanisms of ownership and control” (Kogan, Bauer, Bleiklie, Henkel 2000:99). The German research university, portrayed by the research imperative through an integration of research and teaching in the full professor, has been a model for universities throughout the nineteenth and twentieth centuries (Clark 1983). The Anglo-Saxon tradition has also traditionally been characterized by autonomy, which is guaranteed by keeping universities at a distance from public authorities, but nevertheless with access to public funding (Kogan, Bleiklie, Bauer, Henkel 2000:99). The Napoleonic university tradition has traditionally been characterized by a centralized system of higher education and a strong academic profession. Thus these different models of university tradition will provide different answers to the question of the government’s role in funding and the consequences for universities and academics. For instance, the role of the state as guarantor of autonomy in the Humboldtian model risks being replaced by a more centralized state control interfering with universities’ autonomy. The British universities with the state at arm’s length buffered by academic elites could be challenged by increasing state intervention into university affairs. The Napoleonic model might imply for French higher education a move from a system where higher education was largely influenced by the strong relationship between the academic disciplines and the state to a system with stronger university governance. Nevertheless there is

not a signal of convergence in terms of university models as different countries' models seem to respond differently to funding reforms.

Largely the conclusions in the articles support the dramatic shifts taking place in funding of higher education and research at several levels. Findings also support the assumption that the university as a specific form of organisation is challenged due to these changes. Although, the complexities that follow from applying funding as a mode of steering higher education institutions and academic behaviour reflect that its effects are less easy to control than first assumed by higher education reformers.

1.3.3 Complementing the field of higher education with a public management perspective

I consider it useful to complement the field of higher education with a public management perspective on the changes that have occurred in funding of higher education research in this dissertation⁸. Such an approach to the study of higher education has been carried out by researchers in the field (Paradeise et al. 2009). This allows the study of higher education reforms to be seen as part of a broader pattern of public sector reform (ibid). Since the higher education sector usually has been analysed as a stand-alone sector, characterized by particular theoretical-analytical traditions and concepts and by a relatively small group of researchers, the field can benefit from being considered as integrated in the public sector. The idea that there has been a shift in the public management of higher education is important for this study. The articles of the dissertation analyses national governments' attempts to actively shape higher education. The public management instruments are put in place to control organisational and academic behaviour. Some of these instruments are related to financial distribution, and the mode of public funding can be considered as a way of steering which is

⁸ This section draws on ideas from the SUN project as discussed in "University governance. Western European Comparative Perspectives" (Paradeise et al. 2009).

taking place in the higher education sector in particular but also in the larger context of steering and control of public organisations. Thus, the role of such instruments lies in shaping higher education systems to become more strategic in order to realize national policy goals.

The introduction of financial incentives and performance based funding can be related to the NPM ideas. When NPM ideas are translated into the higher education sector (Paradeise et al. 2009) the elements that deal with higher education and research funding can be carved out: market-based reforms aimed at increasing competition, budgetary constraints either as reduced funding or introduction of new budgetary instruments based on output more than input, budgetary reforms emphasizing performance in research and teaching, concentration of funds in most successful higher education institutions and more vertical differentiation between higher education institutions (Ferlie et al. 2008). The theoretical underpinnings of NPM have led to tensions as some of the elements are inconsistent: “They result from the contradiction between the centralizing tendencies inherent in contractualism and the devolutionary tendencies of managerialism” (Christensen and Læg Reid 2011:4). NPM measures imply both a process of decentralization (let the managers manage) and a movement towards centralization (make the managers manage) involving an emphasis of both autonomy and control at the same time.

The extent to which funding has been applied to increasingly control national policy goals varies between countries. One might assume that NPM reform ideas are spread across national borders and have standardising effects, yet most studies of public reform suggest that there is a great national variation of NPM influence. There are both similarities and differences in how countries apply funding to steer higher education. But convergence seems largely to be reflected in the overall choice of using funding as an instrument whereas the actual implementation reflects path dependent features. This may be explained by NPM being termed a ‘shopping-basket’ of various reform measures with some degree of inconsistency. In addition countries are selective when choosing NPM measures. Thus there is a great divergence in influence of financial instruments, for instance in the number or extension of indicators that are used and the share that financial performance indicators represent in the

financial models. There is also a substantial divergence concerning their implications, for instance towards the relationship between the state and universities, the influence on higher education institutions' organisation and practices and on academics behaviour. Some countries represent university traditions that have been characterized by high policy autonomy with the ability to resist political reform. Thus the funding instruments are introduced in different implementation habitats both at the political-administrative level and at the level of higher education sectors which implies that their influence will vary.

Assessing the influence of funding instruments on higher education is also a matter of level of analysis; whether the analysis is carried out in a top-down manner, for instance by looking at funding policies that have developed, which arguments are the basis for funding policies and how funding policies are intentionally planned to be put into practice. However assessing the influence of central authorities or central agencies' funding instruments on higher education and research from a bottom-up perspective can provide a different picture in particular in terms of assumed implications. Inconsistency between policies and means for implementation can be revealed as well as conflicts with the internal organisation of higher education institutions. The dissertation will attempt to focus on processes such as reforms and policies developed at the central level and a top down analysis, but also stress the implications of such processes by analysing them from a bottom-up perspective. Thus in addition to analysing implementation of top-down policies at the shop floor level I investigate how actors at the bottom level respond to these policies.

In order to understand the changes in funding of higher education and research as well as their implications, there is a need to *link the public management perspective with the claims of universities becoming less specific forms of organisation*. Following from the shift in public management largely oriented towards using externally induced instruments such as funding and aimed at increased organisational and academic control will mean that universities are becoming more tightly coupled organisations and more tightly coupled with centrally formulated goals. Financial incentives and performance based funding are closely connected to the diffusion of NPM which has elements both of decentralization (autonomy) and of

centralization (control). The likeliness for NPM to vary between countries between convergence and path dependencies raises questions about the extent to which universities in general move towards becoming less specific organisations.

1.3.4 Changes in funding of higher education and research and consequences for the public mission

One of the implications of changes in funding of higher education and research concerns the public responsibility for funding higher education activities (Rhoten and Calhoun 2011). The obligation of a government to contribute financially to research and education is important for several reasons. State funding of higher education has been based on securing that key public missions are accomplished such as providing access, educating civil servants, teachers, and practitioners of the “helping professions”, and conducting research on problems of national significance (Calhoun 2011). Thus state funding is important for the opportunity for young people to access higher education in a way that secures fairness and opportunities for larger parts of society to enter a university. However, in some cases the most important goal for selection is individual excellence while other times it is securing social mobility (Rhoten and Calhoun 2011). Another argument for the public responsibility of funding, which is linked to the German Idealist conception of the modern university, is the university as a site of critique (Readings 1996). Governments have a large responsibility in funding both basic and applied research that can serve progress in different ways. In a more instrumental view, government funding of research is related to the knowledge economy and can result in economic return.

Hence, there are clear tensions between the different missions of higher education institutions (Rothen and Calhoun 2011). Different countries tend to stress these responsibilities of government funding differently often due to particular national-historical configurations of the academic profession, higher education institutions and public authorities (Musselin 2005). For instance the movement from elite education to mass education in higher education has developed unevenly in different countries. Some countries still have elitist higher education institutions that are considered to be the most prestigious (such as grandes ecoles in France and particular prestigious universities in UK). A different conflict between these responsibilities is related to the Humboldtian ideal of unity of research, teaching and study

(Clark 1987). This ideal is practiced in various ways as some higher education institutions are oriented towards teaching while others keep in the unity of teaching and research.

The financial responsibility of the state is repeatedly up for assessment; how much should be publicly funded, how should it be distributed and which goals should be prioritized is reconsidered. Overall this discussion reflects that the consequences of changes in funding of higher education and research are not merely related to the university organisation but to the public mission and fundamental arguments about the role of the university. Increasingly the role of the university is transformed by reformers' goals of efficiency and usefulness in higher education.

1.4 Funding of higher education and research as a research field ⁹

The section identifies literature and research that can, in different ways, add to understanding and explaining processes in funding higher education and research. This selection has been based on the extent to which literature can contribute to understanding and explaining changes in funding policies in various countries, how it can contribute to understanding the implications of funding policies for the organisational level of higher education institutions, the degree to which it can add to understanding how funding influences research and knowledge production, and to what extent it can contribute to study how funding influences academic practice and academic work.

The immediate impression of studies of higher education and research funding is that in spite of increasing political attention to policies, reforms and means related to higher education and research funding, changes and implications remain to be systematically analysed. Studies in the field of social science on higher education and research funding vary to a great extent. Depending on the question that is addressed and the level at which it is examined, there are studies firmly placed in higher education studies, in organisational theory, in the field of STS and research located closer to the study of public policy.

By examining the diverse branches of literature that analyse the financial side of higher education and research we can identify empirical, methodological and theoretical/analytical gaps and challenges in the research field. In the subsequent elaboration of funding of higher education as a research field, I will address specific gaps and challenges that are attended to in this dissertation.

⁹ This outline and discussion of literature is limited to published or peer reviewed works and works that are within or close to a social science tradition.

1.4.1 The field of higher education and the literature on funding higher education and research

Studies and literature related to funding of higher education and research can be divided into different overlapping groups. One group of studies is single-country studies frequently based on *countries that have experienced major changes* in their funding system in the last decades (Shattock 2012, Salter and Tapper 1994, Taylor 2005). Shattock (2012) carried out a historical study of British higher education policy where funding is considered as one of the main drivers in policy-making. In this work it is claimed that British higher education policy has been more tightly connected to the government's decision-making bodies related to funding than in other countries. The argument for perceiving funding as one of the central drivers in higher education policy is the dependence on public finances and the growth in student numbers. Shattock showed how the public funding policy has been followed by unintended consequences but also how the structure of decision-making related to funding at the central level has formed the British higher education system and its higher education institutions. This group of studies is often empirically rich and useful for increasing knowledge about funding actors, funding bodies and processes that influence the relationship between the state and the university. In this dissertation the close relationship between the development of higher education policies and funding processes is acknowledged. Also, funding as a central steering mechanism in higher education and the identification of central actors in funding processes have been important in the dissertation. Nevertheless these studies offer little systematic comparison and it becomes a challenge to assess the degree of changes when a thorough comparison of other similar cases is not provided. This gap is dealt with in the dissertation by offering a systematic comparison of three countries that have experienced changes in reform of government funding of universities.

A second group of studies analyses funding of higher education and research as a *policy instrument* that has shifted its orientation from being integrated into a trust-based funding regime with little governmental control of funding and the academic community heavily involved in decisions related to distribution of funding, towards a performance-based funding regime with a greater focus on audit by central authorities (Sørin 2007). Although I

acknowledge the view of funding as a policy instrument, I disagree with the shifts that are identified as there is little support that the past trust-based regime was related to little governmental control and the new regime is merely related to an increase in control, but also the understanding of the shift itself as a complete restructuring of funding regimes. Funding of higher education and research has been less analysed as a policy instrument with consequences for the state – university relationship, for instance moving towards more organisational control. The cross-national study of university governance by Paradeise et al. (2009) investigates, among other things, funding as a policy instrument. The background for the study was observations of major changes in European higher education. The study circles around an assumption that there has been a shift in the relationship between the state and universities. This is also captured conceptually in the study as the authors argue that the state is considered as more actively shaping higher education. The steering by the state is carried out by externally derived instruments such as funding. The study represents a contextualized analysis of how governmental funding in seven countries (France, Germany, Netherlands, Switzerland, Norway, UK and Italy) is related to or influences higher education governance. In all countries funding as a policy instrument for the central authorities is found to have consequences for university governance. However the research design in the individual country studies varies in terms level of analysis and selection of empirical data. Thus, funding of higher education is interpreted in different ways and is unevenly covered making a systematic comparison problematic. The idea of funding as a policy instrument which influences the state – university relationship and which has the potential to move towards increased control of higher education institutions and academic behaviour is pursued in this dissertation but I argue that there is a need for this to be studied systematically across countries. The more general literature on policy instruments can also add to understanding the role of policy instruments and in particular the relationship between the governor and the governee (Vedung 1998). Vedung separates policy instruments into three categories: regulations, economic means and information. Due to the context of the dissertation I will particularly pay attention to economic policy instruments. Examples of funding as a policy instrument in higher education are financial incentives for specific performance and action

such as increasing the share of external research funding from funding agencies, incentives related to enrolment of students and to increased levels of publication. However economic means are not followed by the same level of coercion as regulation, as the addressees are not obliged to undertake the set measures. Therefore economic policy instruments involve a certain leeway for the addressees to choose whether to act or not. In the context of this dissertation this means that funding as a policy instrument in higher education and research is not associated with the high level of coerciveness as in regulation but that higher education institutions have an opportunity to abstain from proposed instrument measures. Such an approach to funding as a policy instrument can help to move beyond a mere distinction between funding regimes related to a trust-distrust dichotomy and shift focus towards the relationship between the governor and the governee or the relationship between the state and the university. This literature also suggests that specific research questions should be addressed in an analysis of policy instruments. Particularly relevant for this dissertation is whether there is a pattern in countries' selection of instruments. Also the consequences (intended, unintended, expected and unexpected) of instruments can be analysed as to the extent to which choice of policy instruments has consequences for the effectiveness and efficiency of government programs, but also what consequences the choice of policy instruments has for the politics of program implementation (relationship between goals and means).

Another set of studies relies heavily on an assumption that there is a growing *marketisation* of higher education (Brown and Carasso 2013, Slaughter and Leslie 1997, Bok 2003). Funding of higher education and research is largely considered as a mechanism for promoting a market or quasi-market and by making general grants to universities more competitive, stimulating external resources and private sector funding or by opening up the possibility for students to pay for their own education. The catchphrase "academic capitalism" is used to describe the consequences of introducing market like behaviour to higher education institutions (Slaughter and Leslie 1997). Brown and Carasso's (2013) study also circles around a claim that there is a growing marketisation of higher education. Funding of higher education is related to the development of a market or quasi-market and to the transformation of higher education

activities into commercial products. This is studied in different ways: the pattern of institutional funding, the funding of research, the funding of student education and quality assurance. As we can see, the claim of marketisation is not only related to funding. These studies are important for directing attention to potential consequences of introducing quasi-markets into funding higher education and research but go far in their conclusions about a movement in one specific direction. The tendency to use marketisation as a general phenomenon taking place independently of variation between countries seems doubtful and is not supported by research. Thus in this dissertation I argue that marketisation of higher education should be treated with caution as regards assessment of the influence it has across countries and across different higher education systems and at various levels of analysis. The approaches that the various literatures described above presents are not mutually exclusive but considered as useful for highlighting different aspects of funding in higher education and research.

1.4.2 The research field of Science and Technology Studies

Within this field there is a group of studies which identify changes in research funding; how it is organised, for instance by new mechanisms and how patterns of research funding are distributed in terms of sectors and funding sources as well as how new actors become important. Hence several studies focus empirically on the changes in patterns of funding and new funding instruments that are developed (Lepori 2006, Poti and Reale 2007), the expansion and implications of performance based funding systems (Hicks 2012, Layzell 1999) and the different sources for funding research (Lepori et al. 2007). Another section within this research field studies the relationship between different actors, for instance research funding as a part of a triple helix of industry, government and university (Etzkowitz et al. 2000, Croissant and Smith-Doerr 2008). The changes that are identified in these studies in terms of organisation of research funding, new mechanisms and sources for research funding have been useful in the analyses of this dissertation. The closer relationship between industry or private sector, government and the university is particularly important for understanding how the organisation of research funding has created new relationships for universities. However these studies seem to have a focus on quantifying the changes more

than studying qualitatively the implications of research funding for universities and academics which is central in this dissertation. Also, this section within the Science and Technology tradition seems to have a bias towards the natural sciences, causing a neglect of central fields within the university. In addition science is assumed to take place independent of an institutional context which, in the case of universities, implies a disconnection from scientific disciplines and university organisation. Research is in these studies first and foremost a source for growth and knowledge is a dynamic force. This is related to the tensions reflected in the dual identity of university research; it is on one hand integrated into the university and shaped by university governance and on the other hand it is an important element of any national innovation system (Hicks 2012).

The well-known distinction between Mode 1 and mode 2 forms of knowledge production has been used to coin the above described development (Gibbons et al. 1994). A new form of knowledge production has emerged alongside the traditional disciplinary one. This has consequences for knowledge production in terms of how it is produced, the context, organisation, the rewards system as well as control of quality. This literature has been important in the dissertation for understanding the implications that new research funding systems, structures and mechanisms have for research and knowledge production. Yet the challenges which are often associated with this distinction, such as whether it involves moving from a traditional form of knowledge production to a new mode and whether this is empirically accurate, is followed in this dissertation (Weingart 1997).

1.4.3 The research field of public management and new public management

Literature that studies or conceptualizes public reform in different ways is an important point of departure for the dissertation. In particular the literature on comparative public management and the literature of new public management are of interest.

The article by Hood (1995) describes the most common elements of NPM. Yet, in addition to describing the central elements of NPM the author calls for a focus on the variation in how NPM reforms or elements of reforms are adopted. The author argues that one way of doing this is to carry out cross-national studies systematically. The fact that what the author refers to

in many studies as “fragmentary sources” corroborates the argument for more systematic and comprehensive studies. Although this claim was made two decades ago it seems that the relevance still exists. This understanding of the relationship between NPM elements and adoption of reform elements on one hand and the suggestion of carrying out systematic comparison across countries on the other is particularly important in the dissertation. In the article in this dissertation “Between slow and comprehensive reformers. Comparing government funding policies of universities in three countries” the elements of funding reform of universities are studied cross-nationally as well as in relation to the higher education sector.

The discussion about convergence and divergence of reform processes is a frequently recurring debate. The literature can be separated into those which emphasize the variation between countries and between sectors and those which consider NPM as global converging phenomena. For instance the extent of influence is related to whether NPM is considered as a generic reform wave or aimed at specific policy areas. Similarly this question is related to the challenge of conceptualizing NPM and there are good reasons to argue that NPM is not a coherent reform model with a common point of departure. There is also a need to separate between the levels of convergence; for instance NPM as talk, decisions, practices or results (Pollitt 2001). It has been argued that studies of the implication of NPM reforms have not been carried out in a systematic way and are rather characterized by a focus towards strategies, plans and the more successful stories (Christensen and Lægveid 2011). The consequences for perceiving higher education funding reform in this dissertation is acknowledging countries’ growing focus on competition and performance but also the variation between countries and between sectors. National-historical configurations of universities and historical traditions within countries’ higher education systems are crucial for studying the influence of funding reform.

NPM in public administration has been studied as the influence of NPM ideas on Norwegian civil service (Christensen and Lægveid 1999). One of the conclusions is that NPM comes as a supplement to established practices and procedures rather than replacing them. This does not imply that Norwegian civil service is completely resistant to change but that administrative

reforms experience a process of screening where features of reform are filtered, modified and refined. The overall interpretation of the influence of NPM in Norwegian civil service is that administrative reform processes take place in a complex interplay between international trends, particular national structures, historical-institutional contexts, and specific institutional traditions. The conclusions in this dissertation support this line of reasoning in several ways; the established state – university relationship is highly important for understanding the extent of influence of funding reform. Also universities and the academic profession serve as buffers and modify the policies of funding higher education and research. This complicates funding as a steering mechanism and unintended consequences reflect that it is not a straightforward way of controlling higher education institutions and academic behaviour.

Further studies of NPM involve a focus on a specific sector in society. The influence of NPM has been studied in higher education. Bleiklie, Enders, Lepori and Musselin (2011) study the degree of influence of NPM reform in the Netherlands, Norway, France and Switzerland in policy areas such as funding and market oriented reforms, governmental steering and institutional governance and the extent of influence for the academic profession and academic work. A main conclusion is that the influence of reform models seems to be mixed with nation-specific higher education systems and countries' political and administrative structures. Conducting a cross-national comparison of a specific theme within a sector has informed the article of this dissertation "Between slow and comprehensive reformers. Comparing government funding policies of universities in three European countries". The view that in the sector of higher education in particular, reform models and ideas are adapted to national and historical established practices is by far confirmed in the article.

A frequently cited work in the comparative public management literature of analysis of reform is that of Pollitt and Bouckaert (2004). The background for these authors' interest is, among other things, the reform picture in the last three decades which has been characterized by higher frequency of public reforms, more international reforms, political attention to reforms, reforms attempting to remodel the state (2004:31). The authors argue that: "Our aim is thus to provide comparative analytic account of public management thinking and reform in

twelve developed countries over a period of thirty years” (Pollitt and Bouckaert 2004:1). Although there is a particular interest in NPM reform as one of the most prominent models in the last three decades, other reform models that have been of influence such as NWS (Neo Weberian state) and NPG (new public governance) are given attention. The authors study public reform in 12 countries looking at variation in reform trajectories and the extent to which this is related to variation in countries’ socio-economic forces, political systems and administrative systems. Thus the present political and administrative systems in countries are considered as important for how public reform is received. Yet, politico-administrative systems are not “some kind of unchanging bedrock, to which every reform must adapt itself or fail” (Pollitt and Bouckaert 2004: 48). The very elements of political systems and administrative systems are subject to change but at a different pace. An important lesson of the book is the observation that continental European states seem to be related to a distinctive reform model which has emerged - the neo Weberian state. This model draws on features from the classical Weberian model but contains new elements such as the role of the state and the role of democracy. The authors offer an analytical toolkit consisting of key elements of politico-administrative systems that can be applied for comparative analyses of public policy and public reform. Elements such as state structure, nature of executive government, minister / mandarin relations, administrative culture and diversity of policy advice are all important for how public reform comes about and the opportunities for reform to trickle down towards being implemented and put into practice. The view that there are several reform models in addition to NPM is particularly evident in understanding the French funding reform of universities which is studied in the article “Between slow and comprehensive reformers. Comparing government funding policies of universities in three European countries”. Here I confirm other studies’ conclusions that contractual policy launched in 1988 was not consistent with NPM reform but rather characterized by national traits (Bleiklie, Enders, Lepori and Musselin 2011). In the same article a systematic analysis of the implications of politico-administrative systems for public reforms in funding of higher education is carried out aiming to respond to the need for more systematic treatment of different national political and administrative regimes in higher education research.

Continuity and change have been a central topic in public management literature. One example is Pollitt and Bouckaert's (2009) study of reforms in public policy and in public organisations. The work holds a comparative approach to the study of public reform; it compares two countries, it compares organisation in two sectors, it compares the extent of shifts taking place and it compares developments over time. Based on the empirical study of the hospital and police sector and case studies of hospitals and police, the authors look for similarities and differences. Changes in funding of higher education and research have been the central topic throughout the doctoral project and have been studied comparatively but also at different levels. The theoretical framework in the study cited above draws on different traditions such as an emphasis on history for understanding and explanation, the importance of institution, but also a focus on agency. Also how developments over time lead to change and how change takes place in different degrees is important. One central argument by the authors is that in order to study path dependent processes or developments there is a need to look for specific processes or mechanisms. The view in historical institutionalism that history matters for understanding and explaining institutional processes is clearly represented in the dissertation. The focus on historical-institutional political systems and specific historical patterns of higher education systems are reflected in the article "Between slow and comprehensive reformers. Comparing government funding policies in three European countries". Path dependent processes are acknowledged as central for understanding limitations and opportunities for change as well as incremental change mechanisms that can serve to create larger transformations in institutional structure. In the same article, change mechanisms such as layering, displacement, drift and conversion are particularly useful for understanding how government funding reform emerges and is played out (Thelen and Streeck 2005).

1.4.4 From literature review to the basic ideas for the dissertation

Specific gaps in research as well as influences that have been described in the above outline are pursued in the dissertation. These have inspired the work with the dissertation in terms of general ideas of the study, theoretically and in terms of research strategy.

Firstly, one track which is pursued is related to the problem of systematic comparison of countries' funding systems of higher education and research. Secondly, another observed track is to study changes in funding of higher education and research (by emphasizing funding as a policy instrument) that have the potential to increase control by central authorities of higher education institutions. This implies not merely focusing on the shifts from old to new types of funding policy instrument but also how they influence the relationship between the state and the university. Thirdly, an important pathway to study funding of higher education and research is by perceiving it not necessarily as a converging development. Rather it is likely that the degree of, for instance, marketization and market-like behaviour will vary between countries but also within different universities.

Fourthly, the idea that there is a need to move beyond the equal treatment of research institutions taking place in the science and technology field and bring in a focus on universities or higher education institutions as specific organisations is central for this dissertation. The importance of university disciplines for organisation is significant for understanding the influence of funding policies and funding arrangement for research and researchers.

Fifthly, the NPM and public management literature's distinction between reform ideas or models and their actual application which focuses on variations in adopting reform elements has stimulated this dissertation. The discussion concerning convergence and divergence where on one hand reform models can be seen as globally diffused and moving closer to each other, and on the other hand reform models are understood as varying between countries and sectors has been informative. Thus, for understanding the influence of central funding reform in higher education I focus on the variation between countries and how the specific sector of higher education is important for adoption of reforms. In this dissertation the argument that influence of reform models or ideas to a great extent comes to blend with nation specific higher education systems and countries' political administrative structures is highly relevant. Also the recognition that influence of reform ideas are located in the interplay of internationally diffused ideas, specific national structures, historical-institutional contexts and

specific institutional traditions is important. This implies among other things that countries' path dependent historical-institutional traditions are important for understanding and explaining outcome. The research strategy of looking for similarities and variation as well as attempting to explain variation has been central in the study of funding of higher education and research in different countries. In addition, comparing reforms in public policy and in public organisations by paying attention to temporal mechanisms or processes has also served as a basis for the dissertation.

Chapter II: Theoretical framework

The theoretical framework that I build on in this dissertation focuses on processes of institutional development, institutional change and institutional variation across countries and across time, as well as various levels of analysis. The individual articles in the dissertation include specific theoretical sections which in this introduction are integrated in a broader theoretical framework. Institutional theory in general has served as the overall point of departure, but particular emphasis has been given to historical institutionalism (Pierson and Skocpol 2002, Streeck and Thelen 2005, Mahoney and Thelen 2010), and institutional concepts such as institutional logics and decoupling that have emerged in the context of sociological institutionalism. Usually, historical institutionalism and sociological institutionalism are treated separately and rarely applied together. However for the purpose of this dissertation it is useful to see how these traditions can contribute to understanding processes of change. The seeming paradox of using the literature of historical institutionalism which is often associated with blocking change (Campbell 2010) is, as pointed out earlier, addressed by connecting it to more recent developments in historical institutionalism. The latter has opened up for a closer connection with theories emerging from sociological institutionalism such as institutional logics. The greater extent of institutional heterogeneity and gaps between intentions and actual outcomes suggested by recent scholars of historical institutionalism and theories of institutional logics is an important point of departure for this dissertation. I argue that the way these theoretical frameworks and approaches handle the questions of change and stability is important for analysing and understanding public policies and public administration.

The analyses I have carried out in this dissertation reflect how institutions are formed and changed. The historical development of the field of study and the institutions in the field of higher education is an important context. Based on existing research we know that steering and control of higher education is assumed to vary over time, to be subject to national variation and to differ in terms of actors and situations (Clark 1983). Higher education

involves various levels of authority and principles for organisation such as central authorities, decentralized authorities at universities and university disciplines.

My theoretical interest in the dissertation is centered on a focus on change in funding of higher education and research in various national contexts, periods and levels. I draw on the increased interest to apply macro-oriented theoretical contributions on meso and micro levels (Pollitt 2008). Consequently I analyse funding of higher education and research at different levels which opens up the possibility for analysing the research questions from various angles in the articles in the dissertation. This is in line with the idea of using macro theory on meso and micro levels. Thus, the articles are a part of a broader research design which is adapted to studying change and variation between countries, periods and level of analysis.

In the following sections I will *firstly* discuss new institutional theory and historical institutionalism and the core theoretical underpinnings I use to substantiate my research interest. *Secondly* I will discuss the interest of historical institutionalism in change and stability and illustrate how the empirical data in my articles relate to the overall theoretical framework. *Thirdly* I will focus on the critique of historical institutionalists' perception of change and how this has been a point of departure for the dissertation. *Fourthly* I will clarify how the institutional logic approach and the literature related to decoupling processes have been useful analysis. *Fifthly* I will provide examples of higher education studies that have shared my interest in historical institutionalism and particularly the concept of path dependency. *Finally* I will elaborate how the theoretical framework of historical institutionalism has implications for the study of public policy and public administration.

2.1 New institutionalism and historical institutionalism

In a wider context, historical institutionalism together with rational choice institutionalism and sociological institutionalism have been considered as three different varieties of new institutionalism (Hall and Taylor 1996). Nevertheless one may argue that there are commonalities between these institutional traditions and that there are valid reasons for paying attention to the kinship between institutional theories as suggested in "Usable Theory" (Rueschmeyer 2009). The latter work rests on a claim that there is no true contradiction

between theories of institutions either from new sociological institutionalism, historical institutionalism, new economic institutionalism or rational choice institutionalism. Still the point of departure in this dissertation is historical institutionalism. According to Hall and Taylor (1996) historical institutionalism is characterized by four general features; (1) that the relationship between institutions and individual behaviour is interpreted widely, (2) that they focus on asymmetries of power, (3) that they perceive institutional development as path dependent and focus on unintended consequences, and (4) that they emphasise the role of institutions for the diffusion of ideas. The theoretical tradition perceives institutions as “formal and informal procedures, routines, norms and conventions embedded in the organizational structure of the polity or political economy” (Hall and Taylor 1996:938).

In most cases, historical institutionalists tend to view institutions as constructing actors and providing certain alternatives for modes of action. In that sense institutions both constrain actors but also “empower” the very same actors (Scott 2008:32). This leads us to the methods of historical institutional analysis which is a “detailed account of the specifics of institutional forms because they are expected to exert strong effects on individual behaviour: structuring agendas, attention, preferences, and modes of acting” (Scott 2008:32). The relationship between institutions and behaviour in historical institutionalism borrows from both a rational calculating perspective and a cultural perspective; in the first perspective, institutions are coordinating actors and their behaviour and in the second institutions represent cognitive scripts, categories and models that come to influence behaviour (Hall and Taylor 1996).

Historical institutionalism has been oriented towards critical junctures and path dependencies. Critical junctures implies that formative moments come to shape institutional forms (Thelen 1999). Critical moments represent key moments and events that are catalysts of a “subsequent sequence of events that finally resulted in the major institutional change” (Kickert and Meer 2011:476). Other scholars within the historic institutionalist tradition or historical neo institutionalist tradition (Djelic 2010) have addressed the kind of change that can take place (Streeck and Thelen 2005). A heavy emphasis on historical institutional theory has been given to temporally oriented mechanisms. Following from this is the importance of time and

sequences for understanding causality in processes. Furthermore the possibility of several outcomes as compared to linear processes and the possibility of small events with large effects on a course of action are also stressed. Thus, “real” change can be the outcome of gradual and piecemeal reform (Kickert and Meer 2011). The importance of path dependence in historical institutionalism implies that once established patterns, institutional rules, and ways of thinking will create self-reinforcing dynamics (Pierson and Skocpol 2002). This leads us to the importance of the order of events, i.e. it makes a vast difference if one incident occurs before the other. Therefore timing (when) of a sequence or of an event is crucial to understanding the nature (how) of the event (Pierson 2000, Orren and Skowronek 1994). For instance the context, situation, constellations and conflicts in place when institutions emerge can be critical to understanding what they have become (Thelen 1999). In addition, the fact that one action is chosen, signals that different alternatives are left out and considered inappropriate. This is a main starting point in the dissertation and in particular because this is a comparative study. In the comparative article which studies government funding policies of universities it becomes obvious that elements such as the context of universities in a country when they were created, specific situations which have left significant fingerprints on institutional structure in a higher education system, particular constellations between central actors such as the state, central bureaucracy and academic profession or academic elites are important to understand how they have been formed.

Overall these elements of historical institutionalism have been central for the dissertation. For instance in the article which studies government funding policies in three countries, I address the importance of timing together with political administrative structures for explaining outcome. The fact that interest in time and temporality in the study of institutional processes has spread to the field of public management have also been a point of departure in the dissertation (Pollitt 2008).

2.2 Historical institutionalism and change

Pierson and Skocpol (2002) identify central features of historical institutionalism: the interest in big and substantive questions that are fundamentally of interest to the public as well as

fellow scholars, the focus on explaining outcomes or puzzles by taking time seriously, an emphasis on analysis of macro contexts and the tendency to “hypothesize about the combined effects of institutions and processes rather than examining just one institution or process at a time” (2002: 3). The work of this dissertation is inspired by the historical institutionalists disposition for starting with “historically situated outcomes of broad interest” often in the shape of a puzzle of why something happened, or eventually did not happen or why specific structures or patterns are created at some times and in some places but absent in others (Thelen 1999). The emphasis on explaining variations in central or surprising patterns, events or arrangements is among other things closely related to the article in this dissertation studying government funding policies in three different countries over a certain timespan. The three countries were similar in the sense that they had experienced reform in funding policies but followed different paths. Thus there were similarities as well as differences in government funding policies of higher education. The historical institutionalist focus on history was important for understanding how path dependent mechanisms were central for explaining the direction that government funding policies took in the different countries. The historical view of institutions in historical institutionalism of a non-functionalist perception of institutions has also been important in this dissertation (Thelen 1999).

Historical institutionalism combines interest based behaviour drawn from rational choice as well as normative behaviour related to normative institutionalism. Thus studying funding of higher education and research involves both institutional structures shaping behaviour and the opportunity for human agency to shape institutions. In the article in the dissertation studying a shift in institutional logics of knowledge production there is a clear indication of agency in the collaboration of researchers. The research collaboration resulted from a bottom-up process with close connections to central actors in the university. The case also illustrates that changing circumstances in the environment influenced the research collaboration which forced researchers to reorient their research towards fields more likely to be awarded research funding. This shows how organisational actors in higher education have the capacity to adapt to different circumstances and that actors within an organisation have influence. Such a claim has implications for understanding steering and control in higher education. To a great extent

the analyses in the dissertation shows that it is a challenging affair to increase government steering and control of higher education institutions and academic practice through financial means.

There have been many attempts to clarify path dependent processes, and a large body of literature has developed which can be categorized depending on one's perception of how path dependency comes about (Mahoney and Ruechmeyer 2003, Pierson 2004, Thelen and Streeck 2005). Still, a common challenge in this literature is the application of theory at the macro level or "whole systems" (Pollitt 2008:40) such as economies and welfare systems. But there seems to be a growing interest in applying the literature on path dependency at the meso level such as public policies and specific organisations (Pollitt 2008:40, Helgøy 2006, Bjørkquist 2011, Greve 2012). This has also been a basis for the dissertation; path dependent processes studied at policy level and organisational level. Thus I have studied path dependent processes in higher education policies and reform as well as at the university organisation.

Recently the emphasis on path dependency in historical institutionalism has come to be critiqued (Streeck and Thelen 2005). The critique addresses the understatement of determining change by referring to path dependent explanations and that change is contingent on an exogenous shock. Hacker (2005) supports the claim that key mechanisms of change are not necessarily extensive legislative reforms but rather less evident movements and processes. The message that is endorsed is "that change in an institution's functioning and effects can occur without fundamental shifts in formal institutional structures" (Hacker 2005:42). Therefore, change in the context of an institution and in goals can serve to transform the institutions' character essentially even without causing a shift in the institution's formal structure. This form of path dependence has been termed as weaker as it is more "open to the possibilities of incremental change along relatively fixed paths" (Campbell 2010). Institutional change is conditioned by two institutional features; first whether the institutional framework allows internal shifts in institutional operations and goals, and second whether the political environment renders possible progress of authoritative external reform.

The dissertation builds on the recent critique of institutional change in historical institutionalism and the line of arguments that follows. For instance, I employ concepts borrowed by Streeck and Thelen (2005) in order to explain whether processes of change in government funding policies of universities in France, England and Norway are taking place in the form of displacement, layering, drift or conversion. This does not mean that path dependency and punctuated equilibrium is neglected in the dissertation. Rather path dependency is largely built into the above concepts and has the ability to explain situations where stability remains in certain elements, whereas others are changed. Punctuated equilibrium on the other hand can explain external shock on an institutional framework but also that post shock, it can return to a more stable situation. Yet the key argument for applying the concepts is that they bring out more nuanced perspectives on change while the classical historical institutionalist concepts are biased towards stability. Thus these concepts open up for change resulting from various processes or mechanisms. For instance change can result from movements in “the societal balance of power” (Streeck and Thelen 2005:19). Additionally “exogenous change is often advanced by endogenous forces pushing in the same direction but needing to be activated by outside support” (Streeck and Thelen 2005:22). For instance the inclusion of additional elements into an institutional structure can create certain dynamics that have the potential to marginalise the old system over time if enough will support the new system. Change can also result from processes where institutions lack confirmation. In a situation lacking maintenance of institutional forms there can be signs of movement in the institutional forms. Thus, lack of success in renegotiating the institution may lead to its failed survival (Streeck and Thelen 2005). The implications are that a change in the social, political or economical context can lead to a rejection of old institutional elements as they do not respond to the present context and therefore can result in a process of drift where new elements that do correspond to a new context are put forward. Change can also emerge when “existing institutions are adapted to serve new goals or fit the interests of new actors” (Streeck and Thelen 2005:26). For instance, resources can be redirected reflecting a struggle over the purposes of an institution. The struggle over purpose is generated by “gaps in institutional design” or gaps that evolve over time between institutional rules and practice.

The findings in the dissertation support a more dynamic view on institutional change. For instance the government funding policies towards higher education institutions in England, France, and Norway can all be understood in relation to gradual change mechanisms. The article “Between slow and comprehensive reformers - Comparing government funding policies of universities in three European countries” shows that even though some of the country’s policies were related to a comprehensive reform it was not decisive for the outcome. Rather the changes were related to incremental change mechanisms as either the part that was related to funding was treated as a technical adjustment and raised little debate as in Norway and France, or as in England where the outcome was closely related to previous reform paths. This suggests that the changes that took place in the countries did not come about due to external shocks.

2.3 Institutional logics

The work on institutional logics has been central for studying change in funding of higher education and research in the article “Lost in transition? Shifting institutional logics of knowledge production within a research centre of climatology”. Using the institutional logics approach is consistent with the focus in this dissertation on analysing the extent of change as well as the implications for different levels of analysis. How institutional logic scholars perceive the relationship between institutions and actors has been central for understanding how institutions in higher education influence individual and organisational actors but also how actors are able to shape institutions. Furthermore the institutional logics approach can complement macro oriented analysis by studying micro processes. This has been particularly important for studying the relationship between these levels of analysis.

The literature of institutional logics is closely connected with new institutionalism. The institutional logics approach draws heavily on Friedland and Alford’s contribution (1991): “Bringing society back in: Symbols, Practices and Institutional Contradictions”. In the introductory part of their chapter they argue that: “it is not possible to understand individual or organizational behaviour without locating it in a societal context” (1991:232). Thus there is a considerable focus on society and no institutional order given primacy a priori.

The institutional logics approach shares with sociological institutionalism the attention towards cultural rules and cognitive structures but rejects a focus on isomorphism. Rather the institutional logics approach chooses to focus on “the effects of differentiated institutional logics on individuals and organizations in a larger variety of contexts, including markets, industries, and populations of organizational forms” (Thornton and Ocasio 2008:100). The focus in institutional logics approaches on logics influencing rational behaviour implies a departure from the sociological oriented institutionalism (Meyer and Rowan 1977, DiMaggio and Powell 1991). It has been claimed that this variant of new institutionalism was to a great extent considered as a rejection of rationality (Thornton and Ocasio 2008). Thus institutional logics can shape rational, mindful behaviour, but individual and organisational actors are also shaping logics. The institutional logics approach argues that it creates a connection between institutions and actors and thereby ties perspectives that are macro oriented with a micro oriented approach. Institutional logics are particularly adapted to study the interrelationships between individuals, organisations and society. Institutional orders are connected to a central logic that is the basis for organizing principles and gives social actors vocabularies of motive and a sense of self (Thornton and Ocasio 2008). The institutional logics approach supports the view of institutions as more heterogeneous and not necessarily portrayed by institutional consensus. Thus it opens up the possibility of several logics to exist at the same time, which can be an indication of conflict with the ability to spur institutional change. For instance, institutional change can be a result of layering processes where several initial non-competing logics exist and do not represent a threat to each other but gradually a new logic can challenge a dominant logic.

The literature and research in institutional logics have been important for analysing empirical data in the article based on the case of a research centre. In particular how literature of institutional logics perceives the relationship between institutions and actors, the opportunities for rational action within logics and the conceptualization of change in logics have been central for understanding how knowledge production influences behaviour and how and under what circumstances knowledge production is changed. Also how institutional logics perceive change in logics as either being replaced or in co-existence has been an important theoretical

contribution. In the article, a shift in institutional logics of knowledge production is identified. The article shows how the initial institutional logic of knowledge production that was closely related to scientific disciplines and affiliated university departments was dominant in an early phase but came to be challenged in a second phase due to changing premises in the environment and political intervention from central bureaucracy and the university. The new logic that emerged in the second phase was related to a more heterogeneous form of knowledge production.

2.4 Decoupling processes

Literature related to the concept of decoupling has been useful for understanding the extent of changes in funding of higher education and research as well as the implications for higher education institutions and academic practice. The concept of decoupling is related to the article “New organisational structures and the transformation of academic work”. Decoupling opens up the opportunity for studying how universities have adapted to institutional pressure either by talk, decision or action. Decoupling processes are closely related to the concepts of isomorphism and diffusion (Meyer and Rowan 1977). An important background for understanding decoupling processes is the point made by organisation theorists that “organizations that share the same environment tend to take on similar forms as efficiency-seeking organizations seek the optimal fit with their environment” (Boxenbaum and Jonsson 2008:78). Furthermore, organisations adapt to technical pressures but also to the expectations from society which leads to institutional isomorphism. Thus organisations require legitimacy from society to work. Another claim made in institutional theories of organisations is that in cases when adaptations to institutional pressures are in conflict with internal efficiency needs, organisations tend to appear as adapting but are not doing so in reality. Organisations decouple action from structure to be able to obtain organisational efficiency (Brunsson and Olsen 1993, Christensen, Lægred, Roness, Røvik 2004). Decoupling processes provide the organisation with opportunity to seek the legitimacy that adaptation to rationalized myths provides while they continue as before (Meyer and Rowan 1977).

The article that studies new organisational structures that are related to funding academic activities and transformation of academic work relies on an assumption that there is traditionally an organisational decoupling of functions related to teaching and research; one formal structure suitable for the institutional norms of society and one informal structure for coordinating activities. The claim that is put forward is that new organisational structures involve a tighter relationship between formal and informal organisation of academic activities. This would imply that academic work would be increasingly shaped by formal structures and institutional norms in the environment more than norms that are internal to universities and revolve around the research-teaching nexus. However the conclusion which is drawn suggests that implications for academic work are less significant than first assumed and that academic practice is resilient to change. Decoupling continues to be important for relating formal and informal structures in university organisation.

2.5 Higher education studies and historical institutionalism

Several studies on higher education make use of the literature related to historical institutionalism. In particular, the concept of path dependency is frequently applied when searching for explanations (Ravinet 2007, Kehm, Michelsen and Vabø 2010, Dewitte 2006, Corbett 2011). For instance, path dependency and historical legacies are central issues in an article by Kehm, Michelsen and Vabø (2010). Through the lens of the changes in study programmes following from the Bologna reform, the authors analyse characteristics of implementation in Germany and Norway by addressing explanations which call for historical institutional contingencies. Corbett (2011) is among others influenced by historical institutionalism when analysing the influence of EU cooperation on higher education, in particular in relation to what she refers to as “turning points” i.e. important shifts in how issues are contextualized and in agenda setting. These formative moments or critical junctures serve as crucial events for future action. Ravinet’s (2006, 2007) study of the origin of the Bologna process where actors and their policies are addressed, uses the term “lock-in” to explain how certain early initiated events serve to create a repertoire for action and constrain a process as well as influence its direction (Pierson 2004). Following from this change is a complicated process since once a direction or policy is chosen constraints are put on

alternatives for action. High costs are involved by changing path as alternatives have already been singled out which serve to explain continuity. These studies share a common focus on path dependent mechanisms explaining both continuity but also change. My own dissertation fits well with this theoretical tendency in higher education studies to focus on process and path dependency but goes further as I attempt to challenge the bias in historical institutionalism towards stability in its focus on path dependency on one hand, but also as external shocks as the main source for change. One of the lessons learned in this dissertation is that change can take place resulting from smaller modifications in institutional structure.

2.6 Implications for understanding public policies and public administration

Applying a historical institutional framework has specific implications for understanding political processes, public policies and public administration. The fact that institutionalists in a broad sense are interested in “state and societal institutions that shape how political actors define their interests and structure their relations of power to other groups” (Thelen and Steinmo 1992:2) implies that institutions are important for understanding public policies. Historical institutionalism is also important for understanding the role of actors in policy processes where shifts in the overall balance of power can create strategic openings that actors can use to achieve their goals. Another argument for bringing in historical institutional analysis to the study of politics and administration is the claim that political science has largely been decontextualized due to the popularity of rational choice theories (Pierson 2004). Often rational choice analyses are poor in terms of context and assume that one model applies independent of place and time. One consequence following from historical institutionalism is that to understand political processes there is a need to study this in specific places during specific periods.

Historical institutionalism is important for understanding political processes and public administration in terms of the degree of change or stability. Critical junctures and path dependent processes limit future possibilities for (political) action and contribute to defining direction. For instance laws, rules and institutions can create strong barriers to change,

because so much is already invested in the existing ways of doing things (Pierson 2004). The importance of focusing on path dependency in public administration and public policy has been clearly stated: “It would be a small overstatement to say that every management and policy problem has a temporal dimension, and that a sensible solution to that problem is unlikely to be found unless both the influences of the past and the time taken to create things in the future are explicitly taken into analysis” (Pollitt 2008:xiii). History matters in the study of political processes and administrative reforms where political and administrative structures within a country are important for understanding the opportunities for transformation. Thus political and administrative reforms are dependent on the historical path (Kickert 2011) and public reforms must be understood in relation to the national historical institutional context (Christensen and Lægreid 2011).

Political and administrative reforms that do not fulfil expectations stated in goals, but create unintended effects suggest that there is not a clear relationship between the goals and means stated in public policies or public reform. Research in reform processes points to gaps in implementation for explaining lack of influence of reform goals and measures (Ongaro and Valotti 2008). Also, change in political and administrative processes can take place by different mechanisms of gradual change which are related to weaker forms of path dependency (Streeck and Thelen 2005). Some of these change mechanisms imply that there are shifts within the path or direction in policy rather than a total confrontation of the institutional structure. But these mechanisms can gradually lead to larger transformations of institutional structure. Largely this view rests on the idea that institutions are unstable and in constant change where there is room for interpretation by actors (political, administrative, organisational and sectoral) (Streeck and Thelen 2005, Greve 2012).

The historical institutionalist approach to the study of political processes, the study of public policies and public administration by focusing on history, time and context is represented in this dissertation. For instance the study of national funding policies involves a temporal dimension. Also the contributions in this dissertation can be considered as contextualized studies of political processes in the field of higher education. My different contributions

follow the idea that to understand the field of higher education and how it has been subject to steering and control there is a need to focus on its history and particular characteristics. The relationship between political institutions and actors suggested by historical institutionalism has also been important to understand how institutions influence actors in higher education. Political institutions influence actors' interests and behaviour, but in some circumstances where political openings exist this can be used by actors to achieve their goals and a push for institutional change (Streeck and Thelen 2005).

Chapter III:

Methodological considerations and data

The dissertation builds on various methodological considerations and data material. Different data sources in the articles have been used depending on which question they serve to address. The articles and respective research questions relate to different levels of analysis. A qualitative approach as basis for research design connects the different analyses. Questions concerning choice of research methodology, selection of data and level of analysis will be discussed in the next sections. The doctoral project is based on a study of funding higher education and research in Norway, but also in England and France. The dissertation represents different empirical ways of studying the research questions. The changes in governments' funding policies centers on the policy level or macro level. The transformation of academic work is studied at the organisation level of doctoral school and research centre (meso level). The shift in institutional logics is studied at research centre level and researcher level (meso and micro).

3.1 Case study method

The case study method has served as an overall research strategy in the dissertation which connects the different individual contributions. In two articles, cases are compared– either at national or at the organisational level – while one article deals with one single case. Case study research is often linked to qualitative studies although it has been argued that this only serves to increase the “perception that the different kinds of social science are irreconcilable” (Ragin and Becker 1992:4). This points to a need for clarifying the concept of “case”. The task of defining what is a case and what it is a case of needs to be handled carefully.

Preconceptions about what ones research is a case of can serve to hamper conceptual development. Rather the understanding develops gradually and is often not obvious before a later stage in the analysis (Ragin 1992). This has been an important strategy for the dissertation – to perceive the process of conceptualizing the cases as developing throughout the project.

The method of process tracing is useful for understanding how the cases in the dissertation can be considered in relation to theory. The advances in case study methods are particularly

related to an increasing interest in theory-oriented case studies. Process tracing method is a within-case analysis and attempts to trace the links between possible causes and observed outcomes (George and Bennett 2005, Collier 2011). The focus is on establishing the causal mechanism by examining the extent of fit of theory to the intervening causal steps. The implications for process tracing in practice is to examine a number of histories, archival documents, interview transcripts and other sources that are related to the case. Thus careful description is a main feature of process tracing that makes it possible to analyse trajectories of change and causation (Collier 2011). This is necessary to determine whether a proposed theoretical hypothesis occurs in the sequence of a case. The focus on theory-generated cases in process tracing method has implications for defining what the cases in this dissertation are cases of. Institutional theory, which is central for understanding institutional development and institutional change, is the overall theory applied in this dissertation. Historical institutionalism has been associated with restrictions against change as the tradition usually considers change induced by external shocks followed by a strong form of path dependency (Pierson 2000). In contrast more recent literature of historical institutionalism suggests that changes in institutional structure can emerge from incremental movements in institutional structure and therefore less restrictive in terms of the degree of path dependency (Streeck and Thelen 2005, Palier 2010). Thus the cases are cases of different forms of changes in funding of higher education and research that needs to be investigated. Also they are cases of change at different levels of analysis; policy level, organisational level and the level of the individual. Process tracing applied in cases that consist of a sequence of events, which exclude certain paths in the development and lead the outcome in other directions, are termed as path dependent processes. However “path dependency at early points in the development of a longitudinal case should not be assumed to determine the outcome” (George and Bennett 2005:213). Rather the method of process tracing can assess to what extent and how possible outcomes of the case were restricted by the choices made at decision points along the way. A related argument for using process tracing in the dissertation is, among others, the method as a tool for studying whether the phenomenon under scrutiny is characterized by equifinality (or multiple convergences) and that there are converging results in the cases. The phenomenon

which is studied in this dissertation is changes in funding of higher education and research, which is empirically investigated by analysing funding policies, policy instruments and funding arrangements. To a certain extent the changes can be termed as converging, as there are similarities in goals in funding policies, choice of policy instruments and funding models. Here process tracing becomes useful for identifying different paths to an outcome. For instance in the study of three countries, all had experienced a substantial change in government funding policies to universities but followed different paths in terms of the outcome for the state – university relationship.

In case study literature the number of cases being investigated and the amount of detailed information are considered as important dimensions of case studies. The fewer cases that are involved, the larger amount of information can be collected about the cases. In the dissertation the small number of cases that have been investigated has allowed gathering large amounts of data but on several dimensions. Thus the interpretation of “case study” in this dissertation has implied in depth study of cases (Hammersley, Gomm and Foster 2000).

The argument for choosing the case study method is closely related to the research questions and topic of study. In one article I wanted to study how knowledge production is influenced by a number of circumstances likely causing it to change. There is rich literature on traditional and new forms of knowledge production and how it has changed. But there are less empirical accounts of the researchers’ perceptions of the changes. Using a case study as a frame for studying the changes in knowledge production from the point of view of researchers or academics opened up the possibility for studying the research topic in its natural environment where processes and actors are present. A single case study also made possible an in depth study where thick descriptions evolve. This made it possible to collect a great deal of data; in terms of the historical backdrop, the processes, organisation and actors. By contrast a survey method for instance could not have made possible obtaining such a rich dataset and informants’ own descriptions and perceptions.

3.2 Comparative method

A comparative method has been important for the dissertation, in particular the article comparing government funding policies in three countries. The proposed strategy of the literature in social sciences for comparative research to identify similarities and differences remains an important approach in the dissertation for studying variation in different countries but also in different periods. The countries that are a part of the article comparing government funding policies are similar but also reflect variation (the specific similarities and variation is further discussed in a section below). The advantages of such a strategy have been that knowledge emerges, being important for understanding, explaining and interpreting historical outcomes and processes. The tendency in qualitative-oriented comparative studies paying interest to specific experiences and trajectories of different countries has been pursued in the dissertation. Following from this I hold an interest in the cases themselves (Ragin 1987). One of the implications following from this was that before conducting a comparative analysis of France, Norway and England a thorough investigation of each country's higher education system, their structure, main actors and central processes were important to undertake.

Literature of comparative methods directly related to the study of higher education has been important for the dissertation (Clark 1983, Goedegebuure and van Vught 1996, Altbach 1998, Teicler 1996, Paradeise et al 2009)¹⁰. Goedegebuure and van Vught's much cited article from 1996 elaborates the history and future for comparative policy studies and comparative approaches. One of Goedegebuure and van Vught's ambitions in the article is to assess the accomplishments of comparative higher education studies; what characterizes the field's

¹⁰ The candidate participated in a workshop on the topic of comparative studies in higher education research: ESF – EuroHESC workshop «Challenges in comparative higher education research – comparing higher education systems, organizations and individual academic behavior» in Helsinki, Finland 25-27 January 2012. Several of the references that are used for this section are based on ideas from the workshop.

conceptualization of comparing, its perception of data and method, as well as its ambition for addressing the question of causality. The authors conclude that some studies signal a step forward from the descriptive phase of comparative higher education to a phase where comparison is integrated into the major steps in a study (research design, case selection, questions). Another point made by the scholars is the importance of “applying frameworks developed outside of the direct ‘field’ of higher education research to the various phenomena that are part and parcel of higher education” (1996:390). The field of higher education needs to be linked to other fields and disciplinary theoretical traditions.

Today, the field of higher education is still small but has grown and new generations of researchers “better prepared than their predecessors are entering the field and the conceptual understanding and empirical knowledge is considerably more developed than it was 15-20 years ago” (Bleiklie 2014:4). From this follows improved conditions for comparative research in higher education moving from descriptive cases to an ambition of carrying out thematic comparison and perhaps identify causal regularities. The dissertation builds on these ideas; combining different theoretical frameworks from political science, public management and organisation theory; conducting thematic comparison of funding in higher education institutions, identifying mechanisms for change and variation, but also providing thick description of cases of countries to develop understanding (Bleiklie 2014).

A thematic cross-national research design has been important in the TRUE project for carrying out systematic comparison. Following from this is that the focus is organised around topics and questions such as quality, funding and evaluation (Page 1995) more than individual countries. The researchers from different countries have participated in data collection in different countries. The advantages of a thematic design compared to a collection of individual projects are that they pave the way for a thorough comparative process. A thematic research design enables the individual researcher to acquire knowledge about different countries’ higher education systems and may challenge bias.

The particular inspiration of comparative method in the article comparing government funding policies of universities in three countries is, among other things, reflected in the

process of selecting countries that originally started with a mapping of all eight countries participating in the TRUE project. Thus the initial selection was based on considerations related to the project. The different countries' funding reforms at the government level were mapped from the 1980s to 2010. This mapping represented a state of the art of reform initiatives, processes, actors and actor constellations. Three countries were carefully selected in order to make the writing of an in-depth article manageable and according to specific theoretical considerations. The data basis is constituted by policy documents, policy templates and secondary sources. The countries were selected based on being equal on some dimensions while unequal on others. The countries are equal in the sense that they represent modern, European, democratic nations. They are also equal in terms of being subject to a certain degree of change in the policy for funding higher education institutions. But the changes can be considered different in terms of comprehensiveness, initiation, timing and actors. The three countries represented variation also in relation to the role of the state in relation to the universities and the academic profession. Historically, universities in England were characterized by being autonomous higher education institutions facilitated by buffer agencies securing their self-governance. Traditionally French universities have been characterized by strong disciplinary groups that for a long period had a close relationship to the ministry in charge of education and research. The perception that Norwegian universities are characterized as autonomous institutions has historically been recognized by politicians and bureaucrats. This means on one hand that state authorities have been in charge of the basic framework for the universities but also that universities need considerable autonomy to function properly (Bleiklie, Høstaker, Vabø 2000).

These countries were also chosen due to their representation of different political-administrative regimes. In several dimensions such as executive government and administrative tradition there was variation. The question that emerged early when writing the article was how three apparently different countries can generate similar kind of change. By choosing these countries the most common categories of public administrative systems, Public interest and *Rechtstaat*, were represented (Pollitt and Bouckaert 2004). However the idea of the article was also aimed at challenging the most used typologies. In the article, I

applied a more nuanced version where four families of administrative traditions emerge: the Anglo-American, Napoleonic, Germanic / *Rechtstaat* and Scandinavian emerge (Painter and Peters 2010).

Also the country that often represent the gold-standard was deliberately selected for different purposes; to challenge UK's role as a benchmark and in doing so open up the possibility of different or modified mechanisms of change. Another important inspiration for selection of countries was the assumptions about Napoleonic countries. Increasingly literature in political administrative characteristic and in particular administrative tradition has attempted to modify dimensions of Napoleonic countries such as France and Italy. Studies or empirical analyses of Napoleonic countries have contributed to challenging the assumption of implementation gap, legalistic tradition and stickiness (Ongaro and Valotti 2008, Bezes 2010). Lastly the strategy of selecting countries has been important for avoiding bias to one's home country. In many cases one country, often one's home country, is used as a benchmark for the compared countries leading to an asymmetry in empirically explaining processes and mechanisms that are central to understanding.

3.3 Data basis and method for analysis

The dissertation is built on qualitative data ranging from public documents to semi-structured interviews with informants and secondary sources such as previous studies. Documents such as white papers, strategy documents, and reports are central sources of data. Document analysis has created opportunities for understanding complex processes at different levels. The articles rely on a larger set of data than reflected in the completed articles, as these have been tailored to fit journals interests, reviewers' comments and theoretical positions. For instance the initial idea of comparing two research centres within Norwegian universities was

left behind to the advantage of a focus on the relationship between levels and countries¹¹. The different articles have been subject to different data collection strategies. For instance in the study of government funding reforms, public documents have been substantial together with secondary data from previously published higher education analysis to provide a broad understanding of goals, mechanisms as well as actors and actor constellations. One obvious advantage of using documents as data sources is the opportunity to thoroughly read and reread a document. Another apparent advantage of documents as data sources is the accessibility of a vast amount of documents of different kinds. The documents play a slightly different role in each article. In the article analysing public reforms, documents are one of the main sources, while in the two other articles documents serve to support the interviews with key informants. Hence, the documents as sources of data can serve many functions such as providing data that cannot be access through other methods, validity check of data from different sources, and providing data to support a different level of analysis (Bryman 1989). The data was collected between 2008 and 2013.

A qualitative approach has made it possible to address the topics of the dissertation. Thus, it was important to collect data that can add to knowledge about specific dimension in higher education and at different levels. A qualitative approach reflected in the use of a varied set of public documents and data from informants has enabled this. The flexibility often related to the qualitative method has been important for the project. For instance the original research plan can be changed and data material supplemented as the projects progresses. During the project, adjustments have been made after making new discoveries of new ideas. This reflects the opportunities for adjusting the original research design.

¹¹ Data collection in a second research centre was carried out but since the idea of comparing cases of research centres was abandoned in the doctoral project the analysis was not completed.

The specific approaches in data collection and the application of data is described in the articles.

3.3.1 Document analysis

When analysing written sources it is recommended that the researcher follows a set of guidelines on how to treat sources (Kjelstadli 1992). First one may question which sources exist to address a specific phenomenon. This point is about finding sources that are complete and representative. Today access to public documents in the internet opens up availability of a vast number of written sources. In this dissertation this process has involved having clear research questions and empirical entry points as well as conducting a larger investigation of information such as documents that subsequently have been classified and organised according to their relevance. Some documents serve as background material for understanding the more general features of higher education and research. Other documents have served a more significant role and have been studied more thoroughly. Examples of this kind of document are those which are related to the reforms being studied and that are expressions of a specific policy. Other examples are documents that reveal the specific strategy and processes that are subject to analysis. These documents are analysed more systematically in order to capture the elements of public reform, elements in a strategy and processes in research. Documents allow access to informants' language and words that are in some way characteristic to a field. Documents have mainly been accessible online (white papers, annual reports and strategy documents) but some have been obtained upon request (Research Council of Norway documents).

A second point is what the sources are and which functions they originally had. A document has normally been written in a larger context and for a specific purpose. This is also about determining who the producers of the sources are. Judging the functions of the sources also involves determining when the source was created and building a kind of chronological order. In this dissertation public documents are treated as primary sources. A transparent approach regarding which documents that have been informative is expressed by consistently referring in articles and in references to the producer and function of a document. The internet

represents a valuable resource for acquiring documents but creates challenges concerning reliability. On the other hand downloading documents from public sources such as governments' webpages, research council documents and university strategic documents can improve reliability. The producer is known, the purpose is official and there is an opportunity for others to control the sources. The general increase in number of written sources online during the last decades has implications for transparency. Transparency has become an important value for governments and public organisation such as universities. This means that there is greater awareness of the public documents and the fact that they are probably of high quality.

A third point concerns what the sources tell and what content they have. This is the interpretative part. This is related to features of social science where a focus on unique and historical events needs to be subject to interpretation and analysis.

A last point is about what the sources can be used for; what relevance do they hold for the research question. Here one can question how reliable the sources are. By controlling one source against another, for instance public documents and secondary sources, the relevance and consistency have been assessed in the dissertation. There is a certain risk in taking the sources at face value. Such a control of sources will depend on the number of documents. When investigating few documents a more thorough investigation is made, while when investigating a large number of sources render possible the entirety of a phenomenon.

Table 1. List of types of documents

White paper
RCN Evaluations and reports
University strategies
Faculty documents
Annual plans and reports
Newspaper articles
Web based news articles

3.3.2 Secondary sources

Secondary sources such as previous studies have served as an additional source for data in one article¹². Comparative studies and country studies of European countries' higher education systems have been important for acquiring data on core features of the higher education system in the three countries, key reforms throughout the last three decades and more recent reform initiatives. As some of the reforms that are analysed took place in the past, the use of previous studies has contributed to a retrospective view.

3.3.3 Policy templates

Policy templates developed by researchers from the different TRUE countries is one of the main data sources for the article comparing three countries' funding policies. Policy templates are resumes of the higher education system in a country structured systematically and are based on interview data, public documents and available research. The advantages of leaving the data collection and writing of policy templates to each of the participating countries is that one can benefit from the knowledge natives have about their higher education system. One can also avoid the problem of lack of language skills when conducting interviews and reading public documents. The challenge is that information is taken for granted on some occasions by native researchers which could prove to be significant for researchers in the project without similar knowledge about important contextual features and social relations.

¹² Some examples of secondary sources are: Ferlie, E. and Andresani, G. (2009) United Kingdom from bureau professionalism to new public management? In (Bleiklie, I., Ferlie, E., Reale, E. and Paradeise, C. The 'steering' of higher education systems: a public management perspective., Bleiklie, I. (2009) Norway as higher education policy maker – from tortoise to eager beaver? In Bleiklie, I., Ferlie, E., Reale, E. and Paradeise, C. University Governance: Western European Comparative Perspectives., Musselin, C. (2004) The long march of the French universities., Kogan, M. and Hanney, S. (2000) Reforming higher education.

3.3.4 Patterns, shifts and continuity

A central goal in the dissertation is to identify changes related to the study of higher education. Change is a focus in the dissertation: change in funding policies, change in forms of knowledge production and change in academic work. My ambition is to identify patterns of change. Finding single patterns however, can be challenging as patterns often go in different directions (Kjelstadli 1992). Here we can distinguish between the long-term pattern and short term characteristics. This is also related to the question of change versus continuity; how can we identify changes during longer periods of stability? The articles cover a certain period but do not aim to represent a historical investigation. Both primary and secondary sources have been important for covering a certain timeframe of different countries' policies in higher education and in the study of transformation in university research and academic working practices.

3.3.5 Qualitative interviews

Part of the project can be classified as a retrospective design as interviews carried out at one point in time have the role of revealing data about processes in the past (Jacobsen 2005:106). Such a retrospective starting point is based on interviewees' recollection and description of a longer period. Founding the study on the memory of interviewees can represent a weak point, especially as the study attempts to gather data for a longer time span. However, in light of the theme of study several other data sources emerge such as archive information on budgets, organisation (account, annual reports, research portfolio) and other public documents. Yet, face - to - face interviews have been considered as essential to obtain empirical data at meso and micro levels concerning central processes and actors. The development in historical research regarding the assessment of written and oral sources as equally important is relevant in this context. In circumstances where written sources are unavailable, non-existing or inadequate, the importance of oral sources for telling something that has not been written about before is emphasized (Andresen, Rosland, Ryymin and Skålevåg 2012). By comparing the different interviews and documents, certain patterns and regularities have been identified which can expose a course of events. Semi-structured interviews were carried out based on an interview protocol. Such interviews allowed me to structure the interview along a set of

questions that on one hand directed attention to the topic of interest but also allowed departures to happen when interesting topics emerged during interviews (Bryman 1989). Based on this interview strategy it was possible to grasp informants' perceptions of key questions and processes. This way of controlling the set of questions is one of the strengths of doing interviews (Creswell 2003). Determining who should be interviewed was based on which respondents were likely to provide relevant information. Examples of this are members of boards, administration, research organisations and senior researchers in or associated with the research centre and central leadership, central administration and persons involved with the management of the doctoral schools. An invitation letter was sent requesting informants to be interviewed. Approval from the Norwegian Social Science Data Services (NSD) for carrying out the interviews was collected. Interview data was the main source in two articles studying the implications of funding policies and funding arrangements for knowledge production and for academic work. Interviews with central actors opened up the chance to identify different institutional logics of knowledge production. In addition interviews made it possible to study potential transformation in academic work in cases of research centres and in doctoral schools.

Table 2. Overview of data collection

Article	Period for data collection	Data basis
“Between slow and comprehensive reformers. Comparing government funding policies of universities in three European countries”	2010-2013	Public documents, Policy templates Secondary sources
“Lost in transition? Shifting institutional logics within a research centre of climatology at a Norwegian university”	2007-2008	Informant interviews Strategy documents Annual reports
“New Organisational Structures and the Transformation of Academic Work”	2007-2008	Informant interviews Strategy documents Annual reports

Chapter IV:

4.1 Research findings

The dissertation consists of three articles which study funding of higher education and research. These articles are independent theoretical and empirical contributions but together serve to address the overall research questions stated in the introductory chapter. Viewed in combination, the articles contribute to the study of higher education in general and funding of higher education and research in particular.

4.1.1 Article 1

Article 1, “Between slow and comprehensive reformers - Comparing government funding policies of universities in three European countries”¹³, attends to the research questions 1,1a and 1b by using empirical data from the TRUE project on the level of higher education policies and the different countries’ political administrative characteristics. In particular, policy templates consisting of interview data, documents and available research developed by researchers in this research project is a central data source as well as secondary sources of higher education reform and funding policies. By using a comparative approach in the article I study the implications of political and administrative systems (Pollitt and Bouckaert 2004, Painter and Peters 2010) for government funding policies of universities in the contrasting cases of England, France and Norway since the 1980s. More precisely the analysis focuses on the changes that have taken place in these countries by focusing on path dependent mechanisms. Here I argue that although path dependency has been associated with stability, the critique of institutional change in historical institutionalism suggests that institutional change can come about by smaller movements in institutional structure (Streeck and Thelen 2005). By focusing on path dependent mechanisms the explanatory force of political

¹³ The article has been published in the International Journal of Public Administration.

administrative characteristics for higher education reform is assessed. The assumption that political-administrative regimes influence a country's reform capacity and reform trajectory is under scrutiny. The questions that are addressed are: what changes have the involved countries experienced in government funding policies of universities, and to what extent can changes be explained by the characteristics of the political-administrative system?

Empirically the focus in the chapter is on key reform initiatives: the Contractual Policy in France, the Research Assessment Exercise in England and the funding system that was introduced by the Quality Reform in Norway. The analysis shows that all three countries had experienced change in government funding policies of universities in the period studied and that change mechanisms such as displacement, layering, drift and conversion can explain how small or unintended modifications generated larger shifts. The findings in the *French case* are somewhat surprising due to the country's belonging to a politico-administrative system characterized by incrementalism. In terms of change mechanisms the French case reflects a process of displacement as the state – university relationship defined by faculties of deans as *primus inter pares* with tight connections the ministry of education and research was changed due to the introduction of four-year contracts of budgeting at universities. The implications of contractual policy for universities were a new logic of action where the university as a whole and the university president as the central university leader became the main target for the state – university relationship. Layering mechanisms can also explain the French case due to the fact that reform actors seem to have learned to work around unchangeable institutional elements. The findings in the *case of England* suggest that change was generated by layering mechanisms as new elements in government funding policies were added. The institutional structure characterized by university' autonomy and buffer agencies keeping government at arm's length from universities was, among other things, supplemented by the introduction of the Research Assessment Exercise which can on one hand be seen as greater interference in the universities but also as a process secured by academic control and a peer-reviewed system for assessment. The findings in the *Norwegian case* can be related to layering processes as new elements in government funding policies were introduced alongside older ones. Central funding policies for universities had increasingly focused on results but this changed

considerably with the introduction of the Quality Reform. The implications of change in the government funding policies of universities were a change in the relationship between the university and the ministry of education and research. The latter moved from representing a detailed regulator towards providing universities more financial autonomy.

These findings suggest that the relationship between political and administrative features and governmental university funding policies is a complex one. The fact that three fairly different political administrative regimes experienced a great deal of change implies that the expectations of change in these classifications are problematic. The political administrative characteristics associated with France, such as a Napoleonic administrative tradition, does not fit well with the degree of change that was generated by the introduction of contractual policy, but the fact that this new element was characterized by national traits more than NPM does match expectations. In the case of England the political administrative features can explain the radical changes that took place in government funding policies and the implications this had for universities. But the political administrative features are less useful for explaining the continuity in funding policies. The major transformations in the Norwegian case are not easily explained by the country's political administrative system. However the barriers against comprehensive reform in a consensual system can be balanced by a continuous policy and a low level of conflict that over time generate similar changes to that of a majoritarian government (Lijphart 2012). Overall the lack of explanatory force in political administrative structures suggests that the classification can be questioned. The "stereotyped" version of Napoleonic administrative traditions is often pictured as being unable to capture opportunities for change (Pollitt and Bouckaert 2004). The French case however shows that incremental change mechanisms can produce substantial change in institutional structure. In the case of England the continuity in government funding policies for universities and the persistent relationship between the state and universities can be explained by associating the system of government not only by abrupt shifts in public policies but also how policies continue to exist even under different ruling parties. The shortcomings in political administrative features for explanation can imply that the specific sector of higher education is important for explanation more than general political system characteristics.

4.1.2 Article 2

Article 2, “Lost in transition? Shifting institutional logics of knowledge production within a research centre of climatology” addresses research question 2 and is based on semi-structured interviews with key actors that had been part of the establishment process and that held central positions after the research centre was created, as well as relevant documents. On the basis of this case study of a university-based research centre within climatology, I analyse universities’ ability to generate problem choices based on internal scientific criteria compared to external demands. Knowledge production is considered both based on disciplines with substantial degree of autonomy, but also existing in a context where funders require disciplinary boundaries to be redefined. In the article I draw on one hand from the sociology of science in particular the work related to mode 1 and mode 2 forms of knowledge production and on the other hand from academic science and post academic science and contributions from the field of higher education and the study of disciplines. Whether researchers’ problem choices are influenced by external demands and the extent that this influence is accompanied by a change in researchers’ interests is emphasised. I argue that this can be studied by institutional logics (Friedland and Alford 1991, Thornton and Ocasio 2008) that exist or emerge in the context of making research priorities. The questions that are addressed are: to what extent do external definitions of problem choices influence internal definitions? Which institutional logics are enacted when researchers define their problem choices? To what extent is there a change in logics? Are these competing or co-existing logics?

The analysis of the research centre shows that there were different institutional logics shaping researchers’ problem choices in different phases. The logic of understanding was dominant in the early phase of the establishment of a research collaboration while in a second phase a new logic emerged – the competing logic of effects and adaptation. Thus a change in logics is confirmed. The shift in logics was largely spurred by changing premises in the environment and political intervention from central bureaucracy and the university. Based on theories of institutional logic there is a distinction between logics replacement where logics get lost in the transition from an old to a new logic and the existence of multiple and co-existing logics. The

shift in logics is explained by difficulties in maintaining support from powerful actors. Another explanation is that the creation of new logics was not exclusively related to authoritative or influential actors but rather incremental steps towards a goal.

The shift in institutional logics seems to mirror the change in knowledge production discussed in the article. The researchers' problem choices and research definitions shifted from being based in scientific disciplines (mode 1) towards taking place in a context of application (mode 2) (Gibbons et al. 1994). But the analysis does not necessarily support that the research centre moved to mode 2 or post academic science. New institutional logics framing the researchers were created and challenged past logics in science but co-existed as features from both logics were present.

4.1.3 Article 3

Article 3, "New organisational structures and the transformation of academic work" addresses the research questions 2, 2a, 2b. This contribution is based on more than 30 semi-structured interviews with central actors in the cases. The article analyses new organisational structures at universities that are partly a result of financial instruments such as competitive research funding and competitive funding for doctoral education and the implications for academic work in Norway. Often studies of academic work have revolved around a claim that academics' individual autonomy is being challenged and a declining position of the academic profession. Less attention has been given to the emerging division of work that seems to be spurred by the increasing differentiation of the academic profession which is the basis for this article. Based on case studies of a research centre and two doctoral schools, the article addresses to what extent academic work is subject to an increasing specialisation and collectivisation. Different forms of specialisation are elaborated but particularly important in this context is specialisation in terms of disciplines and specialisation of functions. The latter form of specialisation is closely connected to career position, contractual status and the expansion of so-called contingent staff. Collectivisation is understood as related to interdisciplinary organisation structure and to activities carried out in larger groups. We also address the relationship between organisational change and academic work and the

relationship between formal and informal structures which is assumed to be characterized by decoupled structures. However there are tendencies suggesting that universities are becoming less specific as an organisation and possess more general organisational characteristics among which formal hierarchy becomes increasingly important and interferes with traditional forms of organizing the university.

The findings in terms of specialisation of academic work in the research centre are less than expected. Regardless of the fact that researchers were employed as researchers only, informal practice seems to maintain a link between research and teaching. In spite of financial incentives to specialise in research activities, pure research staff gets informally involved in teaching activities. On the other hand the activities related to acquiring external funding did reveal a specialisation in terms of function. The findings in terms of specialisation of academic work in the doctoral schools suggest that there is not a movement to either teaching or research tasks. However doctoral schools seem to generate new tasks. Also one new specialised function can be identified: that of doctoral school administrator. Collectivisation of academic work was identified both in the case of a research centre and in the cases of doctoral schools. However collectivisation in the sense of interdisciplinary collaboration was less present than assumed but more visible in activities related to application for funding. In the cases of doctoral schools collectivisation as integrated disciplines was met by barriers. But collectivisation of academic tasks was reflected in a focus on multiple supervision and enlarged scientific exchange.

The article shows that the traditional structures that are important for controlling academic work are characterized by resilience. For instance in terms of the claim of increasing specialisation, formal structures which are supposed to promote functions of “pure researchers” was balanced by informal practices securing the relationship between research and teaching. The analysis seems to confirm a decoupling process of formal and informal organisational structures. Only partly influenced by new formal arrangements such as research centres and doctoral schools and financial incentives, the academic profession still decides quite autonomously on academic work. The claim that universities are becoming less

special and rather more similar to formal organisations does not hold as the analysis reflects an academic profession largely controlling academic work and serving as a buffer against externally induced change.

4.2 Conclusions and implications

In this dissertation I have studied changes in the funding of higher education and research and the implications of these changes for higher education institutions and academic behaviour.

The relationship between stated goals in higher education policies, policy instruments and implications for universities and academics is usually considered a complicated one.

University autonomy has often been considered as creating opportunities to resist public policies, although this has varied in different university traditions, countries and periods. In order to study whether this relationship has changed and whether higher education institutions and academics' behaviour have become more tightly linked to centrally formulated goals I have studied this at various levels, in different countries and by perceiving the relationship between institutions and actors as a dynamic one. The historical institutional understanding of the relationship between institutions and actors has been central in this dissertation (Hall and Taylor 1996). A core argument of this understanding is that institutions are both constraining and enabling social action. These theoretical reflections have been important for understanding how institutional structures in higher education influence actors, but also how actors at different levels of academia may shape institutional structure. The recent literature in historical institutionalism which originally grew out of a critique of historical institutionalism' bias towards stability and change largely resulting from external shocks has been crucial to understanding how less evident movements and processes lead to change without a fundamental transformation of the formal institutional structure (Streeck and Thelen 2005, Mahoney and Thelen 2010). Even though several of the reforms and policies I have studied can be traced back to comprehensive public reforms, some of the changes observed in the dissertation cannot merely be considered as resulting from external shocks but also as minor adjustments in institutional structure.

A *first* finding in this dissertation is that the changes that have taken place concerning funding of higher education and research in the last decades are related to variation in time and scope. Variation is connected to timing as changes occur in different periods in the different countries and to scope as the changes differ in degree of comprehensiveness. There are both similarities and differences across countries. This is reflected in funding policies introduced in

England, France and Norway which confirm that changes did occur but were related to variation in terms of the period changes took place and in terms of extensiveness of the funding policies that were introduced. Overall, the conclusion in all three articles confirms that changes have taken place and that the changes have been substantial. The specific changes that have been observed throughout this dissertation involve changes in government funding policies to universities, funding as a policy instrument, and changes fuelled by various funding arrangements. However the question of how the changes have been introduced can be seen in relation to different forms of institutional change and in particular in relation to incremental change processes which evolves from a more dynamic perception of change. The comparison of government funding policies in three countries has showed that countries associated with different expectations of change did experience reform in government funding policies of universities. This is explained by path dependent change mechanisms as funding reforms were largely considered as a technical adjustment or amendment but which proved to have consequences for institutional structure and especially the relationship between the state and universities. This can challenge the importance of political and administrative characteristics for the degree of changes in funding policies.

A *second* finding supports the idea that processes of change are complex. Change can come from different levels such as the policy level, but also from the level of actors in the higher education sector. The Research Assessment Exercise in England, Contractual Policy in France and funding policies resulting from the Quality Reform in Norway all involved changes in policies although to a different degree. This suggests that actors within the higher education community have opportunities to act within the frames of an institutional structure. For instance the introduction of the Research Assessment Exercise in England can be seen in relation to co-opted academic elites (Kogan and Hanney 2000) that secured continuity in a control system based on academic values. Contractual policies in France lead to a shift towards a focus on university presidents and central leadership at the university which can be considered as academic actors. Also the return to a disciplinary logic where the academic profession was a central actor in the relationship with the ministry can be understood in light of actors' ability to influence change.

A *third* finding is that implications of change for higher education institutions and for academic practice are present but less related to intentions behind the reforms. This is reflected in the article studying the influence of funding arrangements for knowledge production in a Norwegian university. The implications of competitive funding arrangements for the ability to set the research agenda within universities rooted in disciplinary autonomy was evident as the external context for universities and problem-focused research became increasingly important for defining researchers' problem-choices. However the conclusion does not confirm a uniform decline of disciplinary autonomy; university disciplines continued to be important together with an increased focus on interdisciplinarity. In the third article in this dissertation I conclude that new organisational structures introduced into a Norwegian university also had limited implications for academic practice and academic work. Despite an increasing differentiation of the academic profession and movements towards specialisation in either teaching or research functions, academic work seems to be resilient and continues to integrate teaching and research. This implies that the academic profession continues to control academic work. The claims of tighter couplings between formal and informal structure is not supported. Decoupled structures continue to exist in university organisations. Overall the implications of changes in higher education and research funding to universities and academics seem to be more a matter of changes in formal structures and less in terms of academic behaviour and academic practice. This is also supported by former studies finding that changes in formal structures caused by higher education reform are not necessarily paralleled by a change in academic behaviour (Henkel and Vabø 2000).

The above conclusions and a *fourth* finding can modify the initial claim of stronger central steering and organisational control. The article in this dissertation which studies the influence of funding arrangements for knowledge production supports the idea that governmental steering and organisational control of universities through funding means have been strengthened. However the article finds that there are other forms of control. The analysis in this article shows how the internal way of organising research funding within a university serves to challenge the university's formal hierarchy and modes of control related to the formal university structure. Even though the analysis showed that researchers' problem

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choices were influenced by shifts in the main funders' priorities in the research program for climate research, the fact that researchers on one hand actively created strong relationships with the university management in the process of becoming a CoE and on the other hand participated in various external bodies such as research council committees, national and international research committees for climate research and in general influenced the research agenda for climate research imply that there are other channels of academic influence. This seems to be related to a funding system which creates opportunities for other forms of academic influence and control which cross-cut formal hierarchy. This is supported by findings suggesting that access not only to formal decision making power is important but also to decisions made in a wide range of academic bodies (Bleiklie, Nyhagen, Enders and Lepori forthcoming). Thus if there is a decline in academics' opportunities to take part in decision making which revolves around the formal hierarchical structure of universities resulting from stronger central steering and organisational control this is balanced by academics' power and control within horizontal relationships and networks. These horizontal relationships and networks are represented in bodies in areas such as research funding, evaluation, quality control and promotion. This generates new sources of loose coupling which makes the question of increased central steering and organisational control an even more imprecise description. There is a complex dynamic between funding policies, funding instruments and funding arrangements in higher education and research and higher education institutions and academic behaviour. This signals that there is a complex relationship between institutions and action which is not easily changed by public reforms.

This is related to a *fifth* finding and to one of the main questions that has been guiding the dissertation: to what extent are universities becoming less specific organisations? I have already pointed to findings supporting evidence of changes in funding policies as well as the importance of funding as a policy instrument used for steering higher education institutions and creating stronger ties between policies, instruments and academic activities. Nonetheless, as discussed above it is not clear whether this result in creating a tighter coupling between centrally formulated higher education policies and universities and academic behaviour and whether universities are becoming less specific due to the changes we have witnessed. In this

dissertation we have learned that the extent of change varies between countries, periods and levels. This implies that there is not simply a convergent movement towards universities as less specific organisations due to changes in funding of higher education and research. When studying the extent of implications for higher education institutions and academics the result reflects a great deal of continuity and resilience. This shows that there are challenges in creating tighter coupling between public policies, policy instruments and its effects and making universities less specific organisations. In the analyses in this dissertation I show that although tighter couplings are created in some parts such as policy goals, policy instruments and formal organisation in the university, there are other forms of academic power or control that serve as barriers making it difficult for central authorities to steer and control organisational and individual behaviour. The literature of public management and especially new public management can be useful for understanding the implications for the university organisation. The distinction between reform ideas and models and their actual application made in literature of NPM studies opens up the potential for variation in how adoption is related to variation between countries and between sectors. On one hand the conclusion in this dissertation supports a process of convergence as changes in funding policies, funding as a policy instruments and funding arrangements create tighter couplings between policies and organisation. On the other hand divergence seems to be present in terms of implications of changes in funding of higher education and research as funding reforms seem to blend with countries' higher education systems. Thus there is a need to separate between levels of convergence emerging from changes in funding of higher education and research and differentiate between reforms and policies, policy instruments and practices or results. This suggests that features of higher education reform are filtered and modified in interplay between international trends in higher education reform, particular national structures, historical institutional contexts and institutional traditions. The implications for assessing whether universities are becoming less specific organisation are that this depends on the relationship between funding policies and funding arrangements in higher education and research and specific national higher education structures, historical institutional features and institutional traditions.

If universities still can be considered as specific organisations then the public responsibility of funding higher education activities and higher education institutions is maintained (Rhoten and Calhoun 2011), although it is interpreted differently depending on national variation and variation in university traditions.

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Chapter V: Between slow and comprehensive reformers. Comparing Government Funding Policies of Universities in Three European Countries.

5.1 Introduction

This article will analyse the implications of political and administrative systems for public reforms in funding of higher education. The article will focus on path-dependent mechanisms with the ability to spur change in public policies. Such a focus may at first glance be considered as a paradox, as path dependency is usually associated with stability and restrictions on change. However there are ample reasons for associating path dependency with substantial change which is nevertheless generated by smaller movements in an institutional structure. A national comparison of government funding policies of universities in contrasting cases such as France, Norway, and England since the 1980s serves as the basis for analysis.¹⁴ These countries have been variously labelled as reformers of higher education. French university reforms are often characterized by national reform traits and academics resisting public reforms (Musselin and Paradeise 2009), while Norway has been named a slow reformer in the context of higher education (Paradeise, Reale and Gostallec 2009). The example of England is often termed as the extreme case with early introduction of reforms, high pace and continuity in the reform agenda (Ferlie and Andresani 2009).

Paying attention to the timing of reform is important for several reasons. Timing of a particular reform is assumed to matter for the scope and degree of change. But although there are good examples of countries combining early reform with comprehensive reform, there are

¹⁴ Three of eight countries in the TRUE (Transforming Universities in Europe) project. Funded by the European Science Foundation.

equally good examples of countries known as late reformers but that have been introduced to radical change.¹⁵ A second reason is found in the literature of public management reform, where frequently early and comprehensive reformers become the benchmark of what characterizes a reform and the mechanisms involved. A third reason is related to the recently developed focus on temporality in public policy (Pollitt 2008). Christopher Pollitt argues for such a turn: “*Time, policy, management* is an attempt to plug the gap – to restore the temporal dimension to a central role in our thinking about public administration and policy” (Pollitt 2008:xii–xiii). The idea is to bring the fields of public policy and public management together to see how they can benefit from each other.

The main questions that will structure this article are, *first: what changes have the selected countries experienced in government funding policies of universities; and second: to what extent can changes be explained by characteristics of the politico-administrative system?*

Under the first question I am interested in whether changes in a nation’s policies for university funding demand explanations which address the relevance of historical trajectories for institutional structures (Mahoney and Rueschmeyer 2003). Most interest in historical institutionalism has been towards critical junctures and path dependencies (Thelen 1999), an emphasis that has been critiqued by scholars of historical institutionalism (Streeck and Thelen 2005; Mahoney and Thelen 2010). The critique addresses the claim that the extent of change is understated by referring to path dependent explanations; and that change is usually contingent on an exogenous shock. The paper will build on Streeck and Thelen (2005), considering processes of change that are not necessarily driven by extensive legislative reforms but are rather less evident movements within an institutional structure (Hacker 2005).

¹⁵ See for instance Olsen, J. P. (1996), Norway: Slow Learner – or Another Triumph of the Tortoise?

For the latter question the article will use literature that makes use of the concept of politico-administrative systems and shows how structural characteristics can explain reform trajectories, results or outputs (Politt and Bouckaert 2004). Despite the consequences this has for a top-down approach to understanding policy processes as compared to a bottom-up approach, the limited attention to the relationship between structural characteristics and public policies is given priority. Thus in this article we seek to assess relations between politico-administrative systems and public reform. One alternative is that of a great deal of coherence between a country's politico-administrative regime and reform activity. But there is a common understanding that countries are characterized by specific policies, institutional setups and structures, although to varying degrees, as "they remain lodged in different setups, norms and traditions of governance" (Peters 2010; Lodge 2010 in Bleiklie and Michelsen 2012:20). Public reforms are also transferred through political processes often particularly related to a specific sector (Yesilkagit 2010). This means that the relationship between politico-administrative regimes and public reform involves a need to focus on actors, opportunities for action, and reform processes.

Questions that will organise the empirical analysis in the paper are: 1) *What are the key reforms in government funding of universities in the three countries during this period?* 2) *When did reform take place in the different countries?* 3) *To what extent can reform be explained by features such as state structure, nature of executive government or administrative traditions?* 4) *To what extent can path dependent mechanisms explain change in funding reform?*

The key reform initiatives that will be addressed are: the development of *contractual policy* in France, the launch of *Research Assessment Exercise* in England and the funding system

followed by the *Quality Reform* in Norway. These specific reform initiatives illustrate how universities in all three countries have been subject to public reform in funding policies that proved to have significant implications.¹⁶ The comparability and selection of cases is largely related to belonging to different political administrative systems and less due to representing similar cases of funding policies. The fact that three quite different politico-administrative regimes have the capacity to produce substantial change may imply a need to study reform initiatives from different perspectives.

5.2 Data sources and methodology

This article is based on data from the TRUE (Transforming Universities in Europe) project which studies transformations in higher education in England, France, Germany, Italy, the Netherlands, Norway, Portugal and Switzerland. In this article, the focus is on data on the level of higher education policy and the countries' politico-administrative characteristics, which have been developed into policy templates by researchers in the project.¹⁷ In addition, secondary literature studying higher education reforms, and particularly the various countries' national funding policies, has been used.

5.2.1 Comparative approach

There is a body of literature on comparison that specifically concerns the study of higher education (Clark 1983; Goedegebuure and van Vught 1996; Altbach 1998; Teicler 1996;

¹⁶ Other funding reforms have taken place in the various countries. In the UK, a reform was accepted by the new coalition government based on the recommendation of the Browne Committee in 2010, suggesting that in the future most teaching in English universities should be funded through the tuition fee. In France, the LOLF Act (Loi Organique relative aux Lois de Finance), introduced in 2006, aimed at reforming the public budget procedures as budgets increasingly were linked to assessable indicators. These reforms will not be dealt with in this article.

¹⁷ Policy templates have been developed by researchers from the different True countries. They are resumes of the higher education system in a country structured systematically and based on interview data, documents and available research.

Paradeise et al. 2009). Goedegebuure and van Vught address the importance of “applying frameworks developed outside of the direct ‘field’ of higher education research to the various phenomena that are part and parcel of higher education” (1996:390). Thus there is a need to disentangle the field of higher education and create meeting points between disciplinary theoretical traditions in order to bring in different perspectives.

For a more specific classification of the comparative approach in this paper, the work of Page (1995) is useful. Page distinguishes between comparison by single country studies, juxtapositions, thematic comparison and causal explanation. This paper falls under thematic comparison as it is a “systematic presentation of evidence which allows common questions about different political systems to be answered” (1995:132). The systematic organizing of countries in the paper paves the way for an assessment of the higher education system through a set of questions.

5.3 Theoretical frameworks

In this section, the theoretical frameworks that will be used to analyse the reforms in government funding policies will be elaborated. A focus on politico-administrative characteristics remains largely an underdeveloped perspective in the study of higher education reform. When countries’ higher education policies are studied, references to the characteristics of the political system are often made unsystematically. The argument for bridging the literature on public management reform and innovations in historical institutionalism is the opportunity to stimulate a more dynamic picture of political regimes.

5.3.1 Politico-administrative regimes

The literature of politico-administrative regimes assumes that structural characteristics influence reform capacity and reform trajectories (Pollitt and Bouckaert 2004). Certain political systems and practices create possibilities for actors to influence policy more than others, while some political systems generate restrictions on influence and rather afford scope for actors to block policy change (veto-points), for instance by adapting reform goals or delaying decisions on the implementation processes. In this article, dimensions of politico-administrative systems elaborated by Pollitt and Bouckaert 2004 such as *state structure*,

nature of executive government and *administrative culture* or *traditions* are assumed to influence public policies. Accordingly, reform will spread and develop differently in the political context of a federal state than in a unitary state, and in governmental regimes consisting of a two-party, as opposed to a multi-party, system; and in administrative systems with a tradition of career civil servants, versus civil servants that are appointed politically; and in countries possessing features from the *Rechtstaat* versus a public interest culture (Yesilkagit 2010).

The *state structure* dimension distinguishes between vertical dispersion (extent to which authority is spread between levels of government) and horizontal coordination (degree of coordination or fragmentation at the central government level). Vertical dispersion is often, but not necessarily, largest in decentralized or federal systems and less in centralized and unitary states. Consequences for public reforms are that reforms within decentralized systems are largely more prone “to be less broad in scope and less uniform in practice than in centralized states” (Pollitt and Bouckaert 2004:51). On the other hand, centralized states are inclined to have a more narrow focus on service delivery outputs and results. Horizontal coordination – the ability of one or two ministries or units to serve as an integrating force, “is a difficult variable to estimate, because it tends to be more a matter of convention” (Pollitt and Bouckaert 2004:53).

The *nature of executive government* is a second feature of politico-administrative systems. The majoritarian model concentrates political power in the hands of a bare majority (Lijphardt 2012) and provides the executive with much power, compared to a consensus-based system “where the importance of accommodating electoral minorities through negotiation and compromise are emphasized” (Bleiklie and Michelsen 2012:118). In terms of the character of reform, it seems as if comprehensive change becomes less probable the further one moves away from majoritarian forms of executive government.

The dimensions *state structure* and *nature of executive government* together constitute a significant influence on the speed and scope of reform. This result in two assumptions: first, deep and rapid structural reforms of the administrative apparatus tend to be less difficult in

majoritarian regimes than in consensual ones. This is explained by the fact that majoritarian systems are assumed to produce 'winners' and 'losers'. Thus consensual regimes are less inclined to carry out radical reform. The second claim is that centralized countries have better capacity for carrying out sweeping reforms than more decentralized countries. In between, there are countries falling into an intermediary category, where the main categories do not fit, or where different elements are combined.

Administrative traditions assume the existence of a characteristic set of values in central bureaucracy. In this article I will follow Painter and Peters' (2010) distinction between four families of administrative traditions; the Anglo-American, Napoleonic, Germanic / Rechtstaat and Scandinavian.

In the Rechtstaat model, the role of the state is to be a central integrating force within society (Pollitt and Bouckaert 2004). The main concern of the state is preparation, promulgation, and enforcement of laws. A consequence is that senior civil servants are mainly trained in the field of law and the organisational separation of a large body of administrative law. Implications for public reform are among others that a Rechtstaat-based state is assumed to be 'stickier' or slower to reform than government by public interests. Change in public policy in a Rechtstaat-oriented state would require modifications in law as well as in administrative culture, as senior civil servants specialised in law would presumably be more resistant than generalists to introducing a 'managerial' or 'performance' perspective.

In the Anglo-American tradition¹⁸ there is a firm contractual element in relation to state formation where the state is considered a product of a (tacit or explicit) agreement within society. Much focus is on the limits of this contract, which can be challenged and even dissolved in circumstances of misconduct. Borders between state and society are blurry, and the market and civil society play important roles. Historically there has been a clear separation between politics and administration. The legal tradition of the common law system implies an “inductive and procedural approach through the accumulation of case law, as distinct from the Roman law tradition with its deductive and substantive philosophy and detailed codification” (Painter and Peters 2010:21). Accountability mechanisms within this tradition call attention to political more than legal approaches. The most common public administrative ‘profession’ belongs to management and policy, and not law.

The Napoleonic tradition is in line with the *Rechtstaat* model in its interpretation of law as a state instrument for intervening in society rather than serving as a means of conflict resolution. One typical feature is the interrelation between civil service and political careers. The role of societal actors and networks is limited and interest group participation is largely perceived as illegitimate. Instead, the state autonomy is crucial within this administrative tradition. The problem of the implementation gap is often associated with countries belonging to this tradition, which can be described as on the one hand the distance between what is prescribed by reform legislation and actual existence of management tools, and on the other hand the distance between the mere presence and actual utilization of management tools (Ongaro and Valotti 2008).

¹⁸ See Peters “Civil service systems in Anglo-American countries” in Halligan, J. (2003) for a discussion of the application of the term “Anglo-American” in what can be considered as two different political contexts; the Westminster of the UK and the presidential form of government of the United States.

The Scandinavian or Nordic tradition is usually described by features from several traditions. The étatist focus and organicist view of state-society relations as well as a strong commitment to state welfare are main features. The strong focus on state welfare is based on a ‘social compact’ emerging from extensive democratic and communitarian traditions. Norway favours collectivistic and egalitarian values, appreciates consensus, has a low level of conflict and a comprehensive corporatist system (Lægreid et al. 2006:237). Several features of the Norwegian administrative system are argued to appreciate incrementalism, such as the political leadership’s close relation to administrative leadership, characterized by mutual trust (Christensen and Lægreid 1999).

Table 1

Countries distributed according to the dimensions of political administrative regimes

	State structure	Executive government	Administrative traditions
France	Unitary Centralized Coordinated	Intermediate	Napoleonic
England	Unitary Centralized Coordinated	Majoritarian	Anglo-American
Norway	Unitary Centralized Coordinated	Consensual	Scandinavian Consensual

Table based on Pollitt and Bouckaert (2004); Painter and Peters (2010); Ongaro and Valotti (2008); Bleiklie and Michelsen (2012).

5.3.2 How to explain reform policy by historical institutionalism and path-dependent mechanisms

For a long period, most interest in historical institutionalism was towards critical junctures and path dependencies with the former implying that formative moments come to shape

institutional forms (Thelen 1999) and the latter meaning that once established patterns, institutional rules, and ways of thinking will create self-reinforcing dynamics (Pierson and Skocpol 2002). This leads to the importance of the order of events where timing (when) of a sequence or event is crucial to understand the nature (how) of the event (Pierson 2000, Orren and Skowronek 1994). For instance the context, situation, constellations and conflicts in place when institutions emerge can be critical to understanding what they have become (Thelen 1999).

The emphasis on path dependency has come to be critiqued by more recent literature in historical institutionalism (Streeck and Thelen 2005). The strong focus on stability and the fact that change is usually considered as resulting from an exogenous shock, is a central part of the critique. Palier argues that the recent literature “has departed from ‘institutional determinism’ and been able to combine appreciation of the impact of institutions on policy development, with the possibility for substantial and transformative policy change, as a cumulative effect of successive smaller reforms” (2010:21). In this paper we will elaborate concepts borrowed by Streeck and Thelen (2005) in order to explain whether processes of change are taking place in the form of *displacement*, *layering*, *drift* or *conversion*.

The first concept refers to processes of *displacement*. The emphasis in this paper is placed on the assumption that some institutional frameworks produce a dominant logic of action, although these seem to coexist with other systems entailing different and sometimes conflicting or opposing logics. Some scholars place their focus on “enterprising actors” who embody competing interests within the dominant institutions and practices (Deeg 2005) – or “innovative actors” who are able to influence rulemakers to change the formal institutions.

Change according to processes of *layering* involves the growth of new elements into institutional structure, so-called differential growth, that live side by side with the established institutional forms. Newly created layers do not pose a threat to the institution and therefore do not produce opposition. Still over time, layers can serve to challenge old institutions when the new layers expand, and can change the entire institution (Streeck and Thelen 2005).

The concept of *drift* takes as the point of departure that institutions are not self-driven or self-reproducing, but in need of constant confirmation. Stability may be the picture remaining on the surface but under the facade, key institutional elements are slowly replaced by new ones (Streeck and Thelen 2005). Potential causes of drift are explicit intentional manoeuvres, drift caused by an opening in rules, or drift caused by changes in the actors' conditions.

Conversion suggests that institutions are provided with new goals, functions and purposes. This process of redirecting the institution can come about through new environmental challenges or changes in power relations. The old transformed institutions are meant to “serve new goals or fit the interests of new actors” (Streeck and Thelen 2005:26).

These processes of change are assumed to offer a more dynamic picture of the case countries as reformers, through the study of reforms in funding of higher education. Path dependency and punctuated equilibrium are not neglected in this article but are rather built into the above concepts. These mechanisms are not mutually exclusive. During a given period, a country may experience a switch from one mechanism to another.

5.4 Politico-administrative features and governments' funding policies in three countries

France:

Politico-administrative characteristics

State structure in France has been termed as unitary, centralized and coordinated (Pollitt and Bouckaert 2004). Decentralization reforms since the 1980s may weaken this claim. A centralized system creates expectations about the opportunity of large and uniform reforms. In terms of horizontal coordination, the *grands corps* unifies a fragmented system. France is an example of an intermediate or mixed system when it comes to executive government. This makes it somewhat difficult to suggest assumptions about the speed and scope of reforms. The mixed multiparty system, with a strong executive president, is important for understanding opportunities for reform. In situations when the president represents the major party, the characteristics of the majoritarian system prevail, while in situations where the president and prime minister belong to different parties (cohabitation) it becomes more difficult to make

assumptions about the success that executive governance may have in pulling through reform. The Napoleonic administrative tradition, under which France falls (Peters 2008), is closely associated with the *Rechtstaat* model (Painter and Peters 2010). One implication is that implementation of public policies often means developing a new legal framework. The Napoleonic tradition is often associated with an implementation gap, creating assumptions of stability, as reforms largely remain unimplemented beyond new legal modifications (Ongaro and Valotti 2008).

Between disciplinary logics and the logic of contractual policy

One important backdrop for characterizing the state-university relationship in France is the character of the academic profession and its role in decision-making in national higher education policy. The historical backdrop was the absence of universities before 1968, due to a system with faculties led by powerful deans with close linkages to the ministry in charge of higher education and research (Musselin and Paradeise 2009). For a period lasting over 160 years, four faculties (letters, sciences, law, and medicine), independent of each other in terms of organisation, characterized French university education (Musselin 2004). The Faure Act (1968) aimed at changing this relationship by undermining the system of powerful faculties, and rather promoting multidisciplinary universities managed by an elected president from the academic community.

One specifically interesting feature in the French case is the extensive transformation of the university system generated by a minor adjustment in the central government's budget policies. A reform was launched in 1988 promoting four-year contracts, where small parts of the university budget were to be allocated through negotiation between the individual

university and the Ministry.¹⁹ Until 1988, budgets had been linked to output of students, which took into consideration variation of disciplines in terms of costs (Musselin 2000). In the new reform, only a minor part of the budget was tied to development of a contract but it was still considered as the first step to introducing budget contracts as a policy instrument. The reform was met with little resistance among other reasons because it was interpreted as a technical budget procedure (Musselin and Paradeise 2009). The four-year contract was to be based on universities' strategic plans and negotiations with the ministry and around five to ten per cent of a university budget (salaries exempted) were linked to the contract, while the rest of the budget was linked to student numbers and performance criteria.

The new contractual policy was spurred by central actors within or related to the ministry.²⁰ Later a special advisor²¹ in the ministry followed up the idea and served more or less as an (policy) entrepreneur within the institutional framework. Following up on contractual policy, the central agency DPDU (*Direction de la programmation et du développement universitaire*) was set up in 1989 in charge of administering contracts and for creating standards for developing contracts (Musselin 1997). This decision to reorganise central administration by creation of the DPDU implied that several of the tasks of the present agency DESUP (*Direction des enseignements supérieurs*) were transferred. In addition to the traditional responsibility of budget: university premises construction and *carte universitaire*, the new agency was in charge of completely new tasks such as the university plan 2000 and ministry-university contracts. DESUP seems to have lost its central role to the advantage of the DPDU. The tension between the new agency and the traditional agency were that the latter had

¹⁹ Contractual policy was already introduced in 1983 but had limited effect due to its centralized and discipline-based character (Musselin and Paradeise 2009).

²⁰ Among others the minister of education Lionel Jospin.

²¹ Claude Allegre.

focused on discipline-based accreditation (approval for study programs and courses) and the former on university contracts (developing the idea of the contract as an instrument for ministry-university relation).

Consequences of the reform for universities were first, that it challenged the dominant system based on “discipline-based assessment and procedures within the central administration” (Musselin and Paradeise 2009:25), by focusing on the university institution as such; and second, that it caused the Ministry to shift its orientation towards university presidents at the cost of the representatives from the disciplines. In a way, the previous Act of 1968 intended to recognize universities was picked up and eventually restored, resulting from the introduction of contracts between university and Ministry.

An interesting turn in this development was that the new agency eventually lost its position and was shut down in 1993. The decline of its role was related to the past conflict with the traditional ministerial agency and to changes in directors in both agencies, which involved a change in tasks and responsibilities. The DESUP regained some of its former responsibilities (some budgets and pedagogical choices). Eventually the DPDU was replaced by a service for universities with less power and responsibilities, part of the new DGES (*Direction Générale des Enseignement Supérieurs*). The implications were that once again heads of university departments could get access to the ministry, and that disciplinary logics again became important.

Contractual policy was more and more contested due to financial constraints. As a result of pressure from the ministry of finance it was decided that contracts should no longer involve a four year agreement, and that only 5 per cent of the budget should be subject to negotiation. However contractual policy did not disappear but came to integrate the previous conflict between disciplinary logic related to accreditation and university logic related to contracts. Interestingly, the degree of the contract part of budget was increased to 15 per cent.

The expectations following from state structure imply opportunity for comprehensive and uniform reform. However, in the period when the reform was launched there was a

government of cohabitation, which generates assumptions that coherent reform is less likely. The administrative tradition presupposes stickiness and stability of public policies. In spite of the expectations, the case of France did not come about as a result of comprehensive and uniform reform efforts but rather as a small adjustment in the funding policy of universities.

England:

Politico-administrative characteristics

Traditionally the UK²² public administrative system has been associated with opportunities for change and radical shifts in policy-making. Until recently, the UK was termed as unitary and possessing a centralized state structure, creating assumptions of comprehensive and uniform reforms. A majoritarian model of executive government suggests concentration of power as compared to fragmentation. However changes in state structure as well as in government structure have occurred. The UK is now less unitary due to devolution processes, and today a coalition government is in place. The UK, classified as a public interest model of administrative tradition, is characterized by an expectation that reform processes will have a high pace compared to countries where reforms are connected to changes in legal framework. Compared to a Rechtstaat model, reforms tend to be less sticky and less slow in the public interest tradition (Pollitt and Bouckaert 2004). Generalists are assumed to switch more easily to managerial or performance principles.

Continuity in the government funding policies

The case of England combines transformation and continuity in funding policies of higher education. Higher education policy has rarely been characterized by ideological division between the major political parties, as Labour have commonly continued and carried out the

²² The term UK political administrative system and its characteristics are used to refer to the political features of England.

policy of the Conservatives (Shattock 2012). But this does not imply that radical reform has not taken place.

The autonomy of British universities has usually been secured by buffer agencies. The UGC (University Grants Committee) formerly served as an agency between universities and the Department of Education, obstructing a more detailed kind of control “and under the effective control of elite academics” (Henkel 2011:68). This relationship can be described as that of co-opted academic elites (Kogan and Hanney 2000). The UGC was dominated by academics under the aegis of the Treasury, and for a short period by the Department of Education and Science.²³ It has been claimed that “the creation of the University Grants Committee in 1919 marks the beginning of a close relationship between the state and higher education in Britain” (Tapper 2007:147). It has been claimed that the success of the UGC “in representing university needs and government needs, prevented the emergence of a stronger agency” (Throw 1988:87). Later the UGC and its successor, the University Funding Council (UFC) was replaced by the Higher Education Funding Council (HEFC but renamed HEFCE) with the latter in charge of decisions relating to the number of undergraduate students permitted at HEI.

The British funding system of universities had been reformed in several steps, and in 1985 the UGC made its first attempts towards establishing a national system for the evaluation of research in universities (Henkel 1999). The reasons that served as basis for this decision was among others substantial cuts starting in the 1980ies in the allocation for universities through UGC annual grant and financial pressured research councils (Høstaker 2000, Throw 1988).

²³ Policy template UK 2013.

The reform carried out in 1986 rooted in the research selectivity policy, had consequences for the funding of universities (Brown and Carasso 2013). At this point, the UGC separated institutional funding for teaching and research through the establishment of the Research Assessment Exercise (RAE),²⁴ a policy instrument for assessing universities' performance in research.²⁵ Subject areas were to be assessed by a peer review-based panel consisting of mainly academics specialised in the subject area (Morgan 2004). Research outputs that were assessed were academic publications, research environment, research income, research structure, staffing policy, research strategy and esteem indicators. The RAE resulted in a ranking of basic units in hierarchical categories exposing both high and low performers (Bleiklie 2000). Resulting from this was that academics were formally excluded from the RAE category "research active", a label that was to stick as their teaching and administration load was increased (Henkel 1999). This represented a shift to quality-related research funding. Early on the RAE was met by criticism concerning among other things the assessment method for selecting staff and the selection of performance indicators, as well as the assumed deterioration of academic research (Williams 1998). By 2008, 65 per cent of the total research component of infrastructure funding was allocated on the basis of RAE. Only research assessed as falling into the top three grades was included in the allocation.²⁶ The RAE is claimed to have restructured the relationship between higher education institutions and the state from the 1980s and 1990s (Henkel 1999). However, it is interesting that one of the most powerful instruments for change in universities was based on peer review. The RAE maintained academic values and academic control, while on the other hand it represented a growing attitude of interference in academic matters (Henkel *ibid*). Today financial allocation

²⁴ The Research Excellence Framework will replace the RAE in 2014.

²⁵ Conducted in 1986, 1989, 1992, 1996, 2001 and 2008.

²⁶ Policy template UK 2013.

to universities by the funding councils for research is to a great extent dependent on the RAE assessment of departments.²⁷ The introduction of the RAE can be seen as a new element entering the established institutional framework characterized by autonomous universities on one hand and the buffer agencies in charge of implementing the ministry's policy on the other.

Altogether key features of the political system, such as state structure, type of government and administrative tradition support the picture of England as an enabler of comprehensive, radical and fast reform. But the specific reform process of the RAE reflects mechanisms maintaining a certain degree of continuity in the state-university relationship characterized by a substantial level of academic control. This means that there were veto-points representing a limitation for the scope of reforms.

Norway:

Politico-administrative characteristics

Norwegian state structure has been termed as unitary and centralized. However, Norway has also been called strongly decentralized: characterized by delegation of power from ministries to agencies, and by the important role played by local government. A decentralized system would suggest that reforms are less broad and less uniform. The Norwegian system of government is consensual and majority coalitions have been in power since 2005. Such political circumstances make extensive changes more difficult and less likely to take place, as they are assumed to generate a system integrating diverse interest. Alternatively, reforms which are generated by a consensus-based system may experience that surviving the implementation process is more probable. Additionally, it has been argued that Norway is

²⁷ Policy template UK 2013.

gradually moving in the direction of a majoritarian system (Baldersheim and Rose 2010). Norway belongs to the Scandinavian administrative tradition with a social democratic and consensual influence. It merges the *Rechtstaat* orientation towards law with a strong welfare orientation. The Scandinavian tradition implies a state-centred and organicist perspective on state-society relations, in which interest groups are able to articulate their views, and where politics is a matter of negotiation. The role of state welfare expressed in the ‘social compact’ is based on democratic and communitarian traditions. Collectivistic and egalitarian values and a consensus-based system where political solutions are often a matter of negotiation suggest that changes take place in smaller steps more than in radical shifts.

From slow to comprehensive reformer

For a long period, the government only regulated the general framework of Norwegian universities. The relationship between the state and the universities relied upon a common understanding that universities were to be given a great deal of autonomy to serve their purposes (Bleiklie et al. 2000). This view was generally accepted both in the central state administration and within the political parties.

The fact that the new funding policies presented in the Norwegian case had major implications for the relationship between the state and universities is somewhat surprising, due to the previous picture of Norway as a slow reformer. The Bologna process which was the basis of the reform is claimed to have “opened a political window” which both carried old policy ideas through parliament but also problems and solutions added to the Bologna components (Michelsen 2006). Thus the reform cannot mainly be considered as national implementation of the Bologna declaration but primarily as an attempt to address national challenges (Michelsen and Aamodt 2007). Up to the late 1980s, Norwegian universities’ budgets relied on the number of academic positions at hand and were therefore related to historical volume. During these years, the model of estimation was based on student enrolment (Frølich 2006). Thus, the government made decisions about the overall number of students, whose subsequent funding was strongly controlled (Frølich et al. 2008). The Hernes

Commission (1988) represented a return to policy where priority was given to universities and graduate education. Increasing student numbers were not enough to increase funding but the production of graduates was to be equally important (Bleiklie et al. 2000). The number of students who were admitted and subsequent financial rewards were matters negotiated annually between the ministry and the higher education institutions. A consequence of this system was a bargaining process between higher education institutions and the government.

In a Parliament Report launched in 1999,²⁸ keywords were quality in research. It was recommended that basic allocations to universities should increasingly be calculated on the basis of research strategies. This suggested a new model for university funding based on a lump sum split into a teaching and a research component. The ideas were picked up in a later reform initiative – the national Quality Reform of higher education, and a new funding system based on results was introduced.²⁹ Reforming the funding model for the government's allocation to universities was however only one of several reform components and perhaps not the part that received most attention from the academic community. A restructuring of the funding model for universities was considered as a tool for successful implementation of the more central reform elements, such as the degree structure and the internal governance systems of higher education institutions. Financial allocation based on results was not completely new, as parts of the government's funding to universities were based on credits, and can be seen as an element that was added. The new dimension in the funding model was that the share of incentive-based funding increased and that research activities became a part of the model.

²⁸ St.meld.nr.39 (1998-1999): Forskning ved et tidsskille.

²⁹ Policy template Norway 2013.

The Quality Reform had two major implications, first for understanding Norway as a reformer of the public sector, and second in terms of the relationship between the state or central bureaucracy and universities. This reform was in clear contrast to previous descriptions of policy change where Norwegian higher education had been termed as a “slow reformer characterized by localism and incrementalism” (Bleiklie 2009:127). Comprehensive higher education reforms, in which the speed of reform activity has increased and in which Norway represents an “eager and rapid implementer of comprehensive reforms” (Bleiklie 2009:127) are now the case. The ministry has redefined its role vis-à-vis the universities. It has moved from being a detailed regulator and a party when negotiating funding to becoming less detailed in its regulation. At the same time the new funding model signals a stronger steering of the activity of universities. Although one of the arguments behind the new model was the provision of greater financial autonomy for leaders, the fact that large parts of the university budget is tied up leaves little room for manoeuvring in higher education management.

Features such as a state structure classified as unitary and centralized support assumptions of pulling through comprehensive public reforms. However, features of executive government such as its consensus basis and tendency for majority coalitions, as well as a Scandinavian administrative tradition, are usually related to negotiation of solutions and incremental change. The case of Norway is a contrast to this picture, as comprehensive reform took place without substantial disagreement on the new funding model.

5.5 Analysis of mechanisms of change in the three countries according to displacement, layering, drift and conversion

5.5.1 France – Reform without doctrine and path breaking change

An immediate paradox of the French case is the large scope in terms of implications of reform in a politico-administrative system usually characterized by incrementalism. Napoleonic administrative traditions are linked to a resilient environment for the emergence of NPM models and mechanisms. The French case mirrors a process of displacement, as the institutional structure consisting of faculties headed by powerful deans with close relations to the central administration was transformed, particularly by the introduction of four-year

contracting of budgeting at universities. The policy instrument of budgeting contracts spurred the creation of a new logic of action, with the university as a whole and the central university leader becoming the main target for the state – university relationship. This can be understood as path-breaking change. But there is also a coexistence of logics, as several of the features of the established institutional structure remained active, such as the role of the disciplines, faculties and the academic profession. A layering process can also be an appropriate description, as reform actors at the central administrative bureaucracy appear to have learned to work around unchangeable institutional elements. The unexpected introduction of reform through a budgetary instrument, and the technical dimension of such an instrument, seem to have caused little opposition. Technical measures have the ability to spur unexpected pathways to change (Bleiklie and Michelsen 2012).

The Napoleonic administrative tradition is often linked to an implementation gap, but such a gap is not confirmed, as a financial policy instrument was used and the contractual policy was implemented. Bezes' (2010) study of French public budget reform concludes that the common perception of French Napoleonic reform can be modified, as path-breaking change has taken place. In his example, change was spurred by a slow but continuous ideological conversion of several top civil servants to NPM ideology and principles for reform in some areas. However the presence of NPM policies and instruments in higher education is more ambiguous, and reforms in this connection have been characterized more by national traits (Musselin 2004). To some extent, the French case confirms the claim of reform without doctrine (Rouban 2008), where reformers, driving forces and intentionality are difficult to grasp. This conclusion is somewhat unexpected, particularly due to France belonging to a Napoleonic administrative tradition. This can be due to a problem of the classification of the Napoleonic tradition being over-general and based on a stereotyped version of such countries as unable to capture opportunities for change.

5.5.2 England – Reform leader and coexistence of logics

The reform introduced in 1986 can be explained as change driven forward by a layering mechanism as new elements are added. The institutional structure was historically

characterized by universities' autonomy and self-governance on one hand and the more distant role of the state reflected in the role of buffer agencies on the other. To a great extent, funding of universities was the responsibility of the funding councils, keeping the government at arm's length. Another important feature was the introduction of market-based (performance-based) reforms already in the early 1980s, which seem to have been a part of a continuous policy. However the introduction of the Research Assessment Exercise can be seen as a new element which breaks with the previous institutional structure, as it represents a shift in institutional structure towards greater interference in the universities. However, the RAE process organised by HEFCE secured academic control and a peer review-based system for assessment. Overall, the outcome of new policies and regulation seems to be that of differential growth. Following from this, institutional structure was characterized by state steering through buffer agencies and self-governing universities, but also by the increasing focus on performance through a process of assessment with the ability to challenge the previous state-university relationship.

Concerning the expectations contingent on the position within the political administrative system, it is confirmed that the 'Winner takes all' feature of parliamentarism is likely to produce dramatic changes. However, the example of England illustrates that even the case which implied great expectations of change displayed a more complex picture of transformation. For instance, the contrast to the radical reforms of early 1980s is the great extent of continuity in the government funding policies for universities, and the relationship between state and universities. One explanation, related to the nature of executive government, can be a different interpretation of the consequences of a majoritarian system. Often such a system of government is associated with abrupt shifts in public policies, but the case of England to a large extent presents a situation where reform elements are subject to continuation even under different ruling parties. Lodge (2010) modifies the picture of the UK and suggests that layering processes can also describe administrative legacy. When studying the traditional public service bargain, Lodge finds that the traditional Whitehall civil servant model coexists with more recent models and patterns of civil service (partly competing and partly complementary logics). Recently features of the political administrative system have

been changing: England is not completely unitary; recent elections have resulted in a minority government coalition. But the main period that this study covers has been characterized by majoritarian regimes represented by both the Conservative Party and Labour Party.

5.5.3 Norway - From slow reformer to comprehensive reformer

The Norwegian case can also be interpreted by processes of layering, as new policy elements are introduced alongside more established practices. The institutional structure of Norwegian universities was for a long period characterized by an agreement between the state and the university, with the latter being provided a great deal of autonomy. Nevertheless, the state for a long time controlled university funding as it was related to the number of positions and the number of students. Gradually a focus on results had been emerging in the government funding policies, but the focus on incentives intensified with the launch of the Quality Reform as the share of budget linked to results increased and also came to include research activities. To some extent there has been a shift in the relationship between the universities and the ministries formally in charge of the sector, in which the latter left the role of detailed regulator to provide universities with more financial autonomy. However, the idea that university management would be in charge of the organisation's budget was diluted by fixed commitments in budgets and priorities reflected in the budget model. Differential growth seems to be a plausible claim, as new policies, for instance in the government funding model of universities, are largely added to an already established institutional structure.

To some extent the major transformations brought about by a country often termed as a slow reformer are a paradox. The assumed barriers to comprehensive reform in a consensual system can be outweighed by the advantages of continuous policy and a low level of conflict, that over time can create change similar to that of majoritarian governments (the triumph of the tortoise). Also the incremental character of the administrative tradition having the ability to maintain a continuous focus on some reform questions can have resulted in more comprehensive reforms. It seems that the assumption made in the introduction, of change being induced by less evident movements in the institutional structure, becomes useful.

5. 6 Conclusion

One of the questions raised in the introduction dealt with the implications of timing public reforms. The analysis shows that all three countries experienced substantial change in funding policies, although in different periods. The timing of the French reform was the late 1980s. England started its reform trajectory early in the 1980s but the timing of the particular reform in this article was the mid-eighties. The peak of Norwegian reform was early 2000s. Thus the claim presented in the introduction is supported – early and late reformer meets each other in terms of the level of reform activity. This calls for new questions, such as how three different political systems usually related to different assumptions of pace and ability to develop reform initiatives can produce a similar outcome. The three countries belong to different administrative traditions, although Norway and France share a focus on *Rechtstaat* principles. Thus administrative traditions alone cannot explain reform outcomes. One common feature is the countries' unitary state structure. The case countries belong to different forms of executive government: England as majoritarian, France as intermediary and Norway as consensual. However France on some occasions possesses the features of a majoritarian system with a strong president, and Norway has been claimed to be moving in the direction of a majoritarian system (Baldersheim and Rose 2010). This implies that there is no clear relationship between politico-administrative structures and reform activity. Even though structural features may contribute to explanations for policy outcomes, they must be interpreted in a much more complex way, looking at specific policy processes and actors.

Such a conclusion leads us back to the problems of public management literature raised in the introduction, where on one hand radical reformers represent the benchmark and on the other hand, the classifications are questioned. This challenges both the stereotypes of “reform leaders” (Lodge 2005) and the classification of political administrative systems. This also involves a questioning of the classification of Napoleonic political administrative systems, in which countries are usually associated with legalistic values and administrative tradition, implementation gaps and an incremental character of change. Several studies of continental and Scandinavian political administrative systems have highlighted the opportunity for change (Bezes 2010; Ongaro and Valotti 2008). The analysis in this article confirms the

advantages of bridging politico-administrative dimensions with mechanisms related to path dependency; the dynamics of three fairly different political administrative regimes are underlined when explaining opportunities for public reform.

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Chapter VI:

Lost in transition? Shifting institutional logics within a research centre of climatology at a Norwegian university.

6.1 Introduction

Universities are challenged as they increasingly have to respond to external demands. Today universities have to defend their usefulness, comply with national research priorities and targeted research programmes. One possible problem arising from this development is universities' ability to generate problem choices based on internal scientific criteria compared to external demands (Mathisen 1994). Knowledge production is still considered to be based on disciplines with a substantial degree of autonomy, but is also taking place in a context where funders such as the state or research councils articulate their own priorities, political or economic goals that require disciplinary boundaries to be redefined (Weingart 2010). Within this context disciplines engage in problem focused research i.e. research based on a recognized societal problem (Klein 2000). Universities' relevance has been questioned before. Yet, the contemporary challenge differ from those in former periods as most western universities have integrated funding arrangements with a diversified funding base (Clark 1998) and with externally funded research along with the more traditional funding sources (Leisyte and Enders 2011). In this article the above issues are studied within climate research where they are particularly evident. Climate challenges calls for closer integration of disciplines and climate research often depend on funding from external funding sources.

Two branches of literature dealing with knowledge production or knowledge forms will be of interests in my study. The first is related to the tradition of sociology of science. The position that has spurred a great deal of debate is related to Mode 1 and Mode 2 forms of knowledge production (Gibbons et al. 1994). The general argument is that while knowledge production traditionally has been taking place within scientific institutions and organised around scientific disciplines, its locations, practices and principles have become more heterogeneous. Mode 2 knowledge production is produced in the 'context of application' by transdisciplinary collaborations. Another distinction is between (traditional) academic science and post

academic science (Ziman 2000). Knowledge production in post-academic science refers to a “radical, irreversible, worldwide transformation in the way science is organised, managed and performed” (Ziman 2000:67). One central feature of post-academic science is that scientist engages in fundamental problems where transdisciplinary collaboration is essential. The second branch of literature is related to the field of higher education and the study of university disciplines. This tradition tends to reflect stability in forms of knowledge production. Although the changing conditions for knowledge production are recognized, so is the adaptability and resilience of disciplines (Becher 1989, Becher and Parry 2005, Clark 1983).

The literature within new knowledge production has been critiqued for being unclear in the question of whether a transition from mode 1 to mode 2 implies leaving behind the former (Weingart 1997). This critique will inspire this article. The analysis will deal with whether forms of knowledge production exist independently or are co-existing. The critique of the literature of higher education and university disciplines on the other hand has involved a limited focus on change and conditions for disciplines to be formed by circumstances outside the university. Due to an observation of current changes in the conditions for knowledge production the author will challenge the bias towards stability. A next ambition in the article is to address the critique towards literature in the new knowledge production of scarce empirical support by substantiating the arguments with an empirically based analysis of a case study. Analysing the case opens up for questioning whether there is a clear distinction between these positions. In particular the *researchers' perceptions of change in forms of knowledge production* are emphasized in this article.

Whether researchers' problem choices are influenced by external demands through funding agencies' research programmes and users in society (both public and private), needs to be studied. The extent that this influence is accompanied by change in researchers' interests is an additional focus. I will argue that this can be studied by institutional logics that exist or emerge in the context of making research priorities. The idea is that institutional logics make it possible to capture stable guidelines for action but also opportunities for change. The

questions that will be addressed are: *To what extent do external definitions of problem choices influence internal definitions? Which institutional logics are enacted when researchers define their problem choices? To what extent is there a change in logics? Are these competing or co-existing logics?*

The empirical focus in this article is a research centre located at the University of Bergen, focusing its research on natural science climatology mainly involving disciplines such as geophysics, oceanography, earth science, mathematics and biology. It was approved a Centre of Excellence (CoE) in 2002, a status and following funding which ran out in 2012. The research centre is heavily influenced by its relationship with university departments, core disciplines and basic research. The research area of climate research can also be termed problem-focused which usually transcends the traditional disciplines (Weingart 2010). The research centre relies to a great extent on external project grants from national and international funding agencies. The research centre has been labelled as highly successful as CoE, in terms of acquiring funding, in getting political attention as well as maintaining a strong core of fundamental research. Nevertheless, the research centre entered a period described in this article where shifts in the environment resulted in a more challenged position. This shift is also associated with different institutional logics.

6.2 Conflicting values and practices - research centres as empirical focus

The basic principle for organizing the research university has been scientific disciplines (Clark 1983, Henkel 2005, Weingart 2010). However, the argument for a study on research centres is that these units rely heavily on project funding from competitive funding arrangements outside the university, and seem to have a built in conflict between traditional disciplinary structures and the constant need for external funding linking the possibilities for financial resources to outside societal and political actors (Weingart and Stehr 2000).

6.2.1 The different principles are followed by different ways of organizing research.

In some instances research centres as an organisational structure might be seen as loosely coupled to the disciplines. In this context it might be argued that in cross-disciplinary fields “the concern is less about the unity of the cognitive base and more about united conceptions

of practice” (Becher and Parry 2005:136). Thus, within cross-disciplinary units the disciplines seem to be subordinate to the thematic research base which makes it likely to assume that if thematic orientation changes for instance due to priorities in research programs, the composition of disciplines is likely to change. This often signals an increasing relevance of societal and political actors in university research (Bleiklie and Powell 2005). Thus concentration of research within specific organisational units, separating it from the basic units at the university that are involved in teaching and study missions is a frequently used approach (Clark 1991). In other cases research centres are largely for organisational purposes usually in research fields with high costs and are therefore limited to labs or centres. Research centres can also be legitimated by an argument for concentration of research which goes hand in hand with supporting the “champions” in science (excellence) moving research away from the “academic heartland of the university i.e. discipline based departments (Clark 1998). In a final instance research centres can be understood as highly dependent on the basic disciplines. Sub disciplines or fractions of disciplines may themselves form the basis for cross-disciplinarity (Becher 1989). The extent one or several of these arguments behind establishment of research centres are evident in the analysis of the case will be discussed in the conclusion.

Since research centres are likely to represent a challenge for traditional disciplines, in the analysis of the case it is important to look at disciplinary structures, the development of sub-disciplines and degree of interdisciplinarity. Here one can distinguish between forms of interdisciplinarity such as “true interdisciplinarity” with a high degree of integration of different disciplines or only interdisciplinarity as an organisational principle which is not necessarily equivalent to scientific innovation (Weingart 2000). The distinction between narrow and broad interdisciplinarity can be used to assess the degree of disciplinary integration. Narrow interdisciplinarity takes place between disciplines with a certain kinship such as compatible methods, paradigms and epistemologies. Broad or wide interdisciplinarity is followed by more complexity as it occurs between disciplines with little or no compatibility. In the latter form of interdisciplinarity there are different paradigms or methods and more disciplines and social sectors can be involved (Newell 1998 in Klein 2010).

6.2.2 Climate science – consensus, politicization and an anthropocentric view

Some features of climate science will serve as an important backdrop for and in the analysis of the case. The first is the *consensus* between natural scientists on climate change that exist today, and a partial agreement on the severity of the climate challenges as well as dangers and risks (Dryzek et al 2011:4). But the scientific consensus has not resulted in scientific knowledge serving as the basis for policy. Instead climate science often risk to enter a spiral of *politicization* where scientist willingly or not become political actors (Dryzek et al 2011:5). It has also been argued that science and policy has become closer intertwined but still remains separate spheres (Weart 2011).

A second backdrop is drawn from the literature on the history of climate science which argues that perspectives in the climate have shifted during different periods. An *anthropocentric view* where climate “was considered part of human environment” and the human influence on climate was recognized was largely present in the nineteenth century (Stehr et al. 2011). In this period the global climate was seen as constituted by the sum of regional climates and the method was keeping track of weather statistics. At the turn of the nineteenth and twentieth centuries, climate became to be considered as a physical system (Friedman 1998) where meteorology and oceanography³⁰ became the main fields on the expense of geography (Storch et al 2011, Stehr and van Storch 2010). The anthropocentric view however has returned in the last decades but in a transformed mode (Stehr and van Storch 2010). It departed from climate determinism towards perceiving climate not only as externally given but possible of being changed and manipulated by humans (climate conditions human societies) (Storch et al 2011, Stehr and Storch 2010). The circularity of perspectives in climate is apparent; from an

³⁰ Meteorology and oceanography became the ‘physics of the atmosphere’ and the ‘physics of the ocean’ (Peixoto and Oort 1992).

anthropocentric view, to a physical view, and returning to an anthropocentric view (Storch 2011).

6.3 Methodology and data

A qualitative approach has been used to study the research centre and the researchers. Data collection was carried out by conducting interviews and based on documents. Before embarking the process of selecting informants a thorough investigation of background material was made in order to grasp the background for the establishment, organisational structure and actors. Documents such as public reports and evaluations from the Research Council of Norway (RCN), university documents, internal strategy documents and annual reports of the research centre have been analysed. The target group of informants was actors that had been part of the establishment of the research centre and actors that held central positions after the research centre was created. Informants' positions usually combined administrative and research based tasks. In total 11 semi-structured interviews, lasting averagely from 1-2 hours, were conducted in two steps in 2007 and in 2008 with informants, i.e. mainly key actors and that were part of the internal research structure³¹. This made it possible to observe a potential shift in actors' perceptions. The analysis of data material was based on capturing key actors and motives in the establishment and operation of the research centre. Parts of the analysis are made by referring to quotes from the interviewees. The purpose of illustrating the analysis by quotes is that they are suitable for reflecting central issues in the case as well as making the actors visible in the key phases. The selected case is a single-case study (Yin 1994). The argument for a single-case study is that the chosen case is a unique case compared to the population of similar cases. A second argument for a single-case study is the possibility to investigate the same case in different periods. The case has been

³¹ See appendix

selected strategically in order to “achieve the greatest possible amount of information on a given problem or phenomenon” (Flyvbjerg 2006:229). Following from this is that an atypical or extreme case is considered as appropriate for understanding a specific phenomenon that may not be representative for similar cases but is likely to generate substantial knowledge about a specific (new) development.

6.4 Theoretical framework

One central ambition in the article is to identify institutional logics that are enacted when researchers define their problem choices. Thornton and Ocasio define institutional logics as “the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organise time and space, and provide meaning to their social reality” (1999:804). Based on the literature of institutional logics we can expect that the researchers in the research centre will be influenced by taken-for granted rules and a broader belief system that shape cognition and behaviour. Actors in the case will be influenced by values, beliefs and practices in the organisational field of higher education and research. Following from this theoretical framework is also the assumption that the actors in the case are active in shaping institutional logics. In the case we are also interested in identifying a potential shift in institutional logics. The likeliness for change to take place is linked to the influence of exogenous forces, change in the institutional environment but also movements characterized by incrementalism.

6.4.1 Institutional logics

New institutionalism is a central theoretical background in this article. In particular the literature of institutional logics will serve as basis for carrying out the analysis of the case study. This paper is particularly inspired by the work of Friedland and Alford 1991, Thornton and Ocasio 1999 and Scott et al. 2000. Although belonging to the theoretical tradition of new institutional theory the literature of institutional logics diverges from institutional processes related to isomorphic pressure (Powell and Dimaggio 1991). In contrast the focus is on “the effects of differentiated institutional logics on individuals and organisations in a larger variety of contexts, including markets, industries and populations of organisational forms” (Thornton and Ocasio 2008:100). A focus on institutional logics in shaping rational behaviour is also a

step away from sociological institutionalism usually associated with isomorphism. Individual and organisational actors are active in shaping institutional logics (Thornton and Ocasio 2008) and institutional logics represent organizing principles for a field (Friedland and Alford 1991). Such logics are the key locus for taken-for granted rules influencing behaviour of field-level actors by referring to the belief-systems and practices considered as essential in an organisational field (Scott et al. 2000). An important function of institutional logics is to serve as theoretical constructs making clear “connections that create sense of common purpose and unity within an organizational field” (Reay and Hinings 2009:629). Institutional logics are claimed to tie institutions and action together and are central for understanding organisational fields (Friedland and Alford 1991). The institutional logics approach presuppose a main meta-theory i.e. in order to “understand individual and organisational behaviour, it must be located in a social and institutional context, and this institutional context both regularizes behaviour and provides opportunity for agency and change” (Thornton and Ocasio 2008:102).

A central question is *how change comes about* according to theories of institutional logics (Reay and Hinings 2009). Here distinctions can be made between those who consider dominant *institutional logics being replaced* by another, and those who assume the existence of *multiple and co-existent logics*. Change in institutional logics is often linked to exogenous forces bringing in a new dominant logic and thereby assuming a shift from one relatively stable period of beliefs from another (Scott et al 2000)³². Dunn and Jones (2010) argue that concentrating on one dominant logic for instance within a profession stresses social actor’s attention to this logic and consensus among professionals. However institutional

³² Markers or indicators for change are for instance a shift in the content of professional journals, circulation of popular magazines, how funding is organised (Scott et al. 2000).

environments can be perceived as conflicting and spurring the creation of multiple logics which makes agreement more problematic. In terms of changing logics, co-existing logics have usually been understood as a temporary phenomenon, in between shifting logics, that is resolved through competition. Institutional logics that are able to keep up support from powerful actors are likely to continue status quo. While establishing a new logic into a set field is likely to cause rivalry among key actors as challenger actors represent a new logic. Following from this, conflicting logics co-exist in a period of transition until a winning dominant logic emerges or develop into hybrid version of several logics. For instance change in an institutional structure can come about of processes of layering. Several non-competing institutional logics exist and do not pose a threat to each other but over time a new logic can challenge the first dominant logic (Streeck and Thelen 2005). One answer to the question of portraying institutional logics as being replaced or multiple and thus maybe competing is to emphasize the actions of micro-level actors and how they deal with competing logics (Reay and Hinings 2009). It has been argued that there has been a lack of interest in the impact of institutional logics on actors within a field (Reay and Hinings 2009). Behind this claim is a suggestion to not only focus on field level actors but micro-level actors. This suggests that the creation of a new logic does not necessarily involve authoritative or influential actors but rather incremental steps towards a goal. Here institutional logics developed “under the radar” that eventually emerged into new institutional logics (Battilana 2006). A different approach acknowledges the creation of a new logic through processes of rivalry but argues for opportunities for the old logic to exist (Townley 2002).

6.4.2 Institutional logics in the case

Before entering a discussion of which institutional logics that seem to be present in the case, examples of institutional logics drawn from literature on institutional theory is pointed out as well as the status of logics. Classical examples of institutions in society that serve as a basis for emerging logics are the capitalist market, the bureaucratic state, families, democracy, and religion (Friedland and Alford 1991). Studies have also focused on logics that are closer to an organisational field or empirical setting such as the logic of science/the logics of care (Dunn and Jones 2010) professional/federal/corporate/market logics (Scott et al. 2000) and the logic

of economic rationality within universities and colleges (Gumport 2000). The statuses of logics are as cognitive constructions that build on empirical observations but do not exist in its pure form in the field it operates in. Institutional logics are ideal types that can be used as tool for analysis; “while often derived from empirical observation, the ideal types are not for describing an organizational field, but instead theoretical models for comparing the effects of various meanings in a location with a definable boundary” (Thornton and Occasion 2008:110).

Two institutional logics are identified in the empirical data in this article; the *logic of understanding* and the *logic of effects and adaptation*. These are cognitive constructions and not directly applicable to the real world. Thus the distinction between logics is for analytical purposes.

These logics are supported by literature on the shifting perspectives in climate research. Both logics are related to conceptualizing climate from an *anthropocentric view describing the changing relationship between humanity and the environment as human driven* (Steffen 2011, Stehr and van Storch 2010:1)³³ but diverge in the way of responding to climate change. The dominant perspective of climate research is largely related to that of *understanding*. Research on climate change for a long period focused almost exclusively on understanding of climate system dynamics (Biesbroek et al. 2010). Here, the reports of the IPPC (Intergovernmental

33 The concept of the new geological era of the anthropocene is highly related to the work of Paul Crutzen Nobel Laureate. A quote reflects the meaning of the anthropocene: “It is only a few years since terms like “Anthropozoikum” and “Anthropocene” has come into existence – or, at least, has attracted the attention of a broader academic public. Embedded into the discussions around climate change and/or the many facets of Global Change, “Anthropozoikum” and Anthropocene” are considered to be scientific terminologies that may be suited to stand for the beginning of a potentially new geological era: an era dominated by the increasingly stronger and obviously lasting imprint of mankind on nature” Ehlers, E. and Krafft, T. (2006:5).

panel on climate change) reflect the constant need for updating the ‘gold standard’ of climate research and a continuously increased understanding of climate change. But it can also be seen as an expression of a science-based consensus of the climate challenges, in particular the third IPCC report in 2001 established the consensus on science (Wearth 2011). In this context mitigation³⁴ evolves as a response concentrating on limitation and reduction of greenhouse gas emissions. The *adaptation* perspective comes from studies of the impact of climate change and aims at reducing damages particularly in vulnerable public and private sector of society (Mendelsohn 2011). Consequently, the *effects* of climate change are emphasized. However, as the influence of climate change is largely differentiated due to the experienced degree of climate change differing depending on geographical and economic variables, also the need for adaptation varies. Adapting to climate change is therefore a local and regional matter where local and provincial jurisdiction prevails (Steffen 2011). Thus adaptation measures usually take place in a local context while mitigation is largely national or international orientated. In previous IPCC reports it was stated that adaptation was to be considered as a complement to mitigation efforts (Pielke 1998). Nonetheless it becomes clearer that the increasing focus on adaptation pushes the focus on mitigation and reduction of emission in the background. This is parallel with a reduced focus in climate research on understanding climate change. The two perspectives differ in terms of the context for knowledge production as understanding climate challenges is shaped by scientific disciplines while adaptation strategies are formed in the co-production of scientific knowledge between natural and social scientist, policy makers and societal actors (Biesbroek et al. 2009). Thus they differ in terms of actors that are involved: “mitigative measures can take place varying

³⁴ Even though the relationship between understanding climate challenges and mitigation is important in these references, mitigation is not empirically clearly expressed in the case and will not be addressed explicitly in the analysis.

from the individual to the international level, whilst adaptation is predominantly the responsibility for interest groups, local and regional government (Biesbroek et al. 2009:233). A move from mitigation (and understanding) perspective to adaptation is also likely to involve a shift in the focus of funding sources; from largely (inter-)national governmental sources to shared funding between (inter-)national sectoral and regional sources (Biesbroek et al. 2010). These shifting perspectives in climate research and responses will be used to define institutional logics in the case. The understanding/mitigation – effects/adaptation divide and how this is related to the differences in knowledge production, actors and funding sources will be applied to investigate the case.

6.5 The case of climate research at the University of Bergen.

Background

The period in which the research centre is studied, is assumed to be a great importance in terms of understanding its formation as well as transformation. Later the research centre has undergone significant changes in terms of organisation and financial situation. In this article, two phases have been chosen for analysing the research centre. *Firstly*, as a collaboration between affiliated institutions, but with small consequences for funding and for formal organisation. In the same period, the research centre was awarded the status as Centre of Excellence in 2002 from the RCN, a status that created great commitments for funding and for expanding into a more formal organisation. A *second* phase is related to the research centre coming under pressure due to the fact that the funding period of CoE is running out and shifts in the RCN's priorities for climate research. In this period the research centre seem to reorient to new and different areas concerning climate research where funding is more likely.

The CoE status was in this period awarded thirteen research environments (RCN 2006). The background for the arrangement was among other evaluations carried out by the RCN in 1998 in the Earth Sciences research where research groups at the UoB were found of high quality³⁵. One informant addressed the importance of this recognition in the evaluation:

“Centres of Excellence did not exist in Norway in this period but in other countries. [So] the expression research excellence was used and the research group of the [director], the research group in paleoclimatology got such a label” (Informant A4).

Still, it was to take some years before the CoE program was realized but the idea was explored by the RCN and suggested in the government report to the parliament³⁶. The CoE would report yearly to the RCN and the progress was evaluated by international experts after three and a half year. The evaluation constituted the basis for decision to continue the activity up to ten years the most. In the RCN webpages it is clearly stated that this CoE was primarily to be based on *basic research and less with effects of climate changes*³⁷.

The launch of the CoE strategy was met by critique in the public and in the academic world. One of the critical arguments was based on the CoE's as an undermining force for universities

³⁵ Research Council of Norway (1998) Earth Sciences Research at Norwegian Universities and Colleges. A Review. Volume I: Assessments, recommendations and conclusions prepared by the Review Committee.

³⁶ St.meld. nr.39 (1998-1999) Forskning ved et tidskille

³⁷ Faktaark SFF 2002 (Forskningsrådet).

and basic research by concentrating large resources in temporary research infrastructures. The second line of critique was not necessarily a critique of the CoE arrangement but of the process that was said to have been characterized by secrecy and taking place behind closed doors. A third critique was based on the disapproval of the awarded centres in 2002 which were said to have been chosen on the basis of geographical, political and economic measures more than on the basis of academic quality (Apollon 2002, Morgenbladet 2007, Klassekampen 2009).

Key figures

The research centre was a relatively large unit and consisted of 58 senior scientists, 23 Postdocs, and 24 PhDs from collaborating institutions in the period it was studied. In 2007 the total funding for the research centre was approximately 9,5 mill Euros. The portion of funding derived from the status as CoE was about 2,1 mill Euros annually for a ten year period. The time frame of ten years of stable funding was also considered as extraordinary in the Norwegian context and provided the centre with an opportunity to make plans on a long-term basis. When the research centre became a CoE as part of a university institution, a similar portion of funds was generated from the university. The third most important funding source was from projects funded by the RCN. The European Commission was increasingly becoming an important source for funding.

6.5.1 Logic of understanding and the establishment of a climate centre of research

The logic of understanding was present in the interviews with informants in several ways; in the institutional affiliation of key actors in the establishment process and in the disciplinary basis and specialisation that had developed within the university.

Institutional and disciplinary basis of the research collaboration

The research centre was initially built upon the collaboration between three key institutions; the university represented by two departments (Geophysics and Earth Sciences) from the faculty of Mathematics and Natural Science, and two research institutes, the Nansen Environmental and Remote Sensing Center (NERSC) and the Institute of Marine Research

(IMR). The key disciplines deriving from the university were Geophysics and Earth Science (or Geology as it was named in the initial phase). The research that came to constitute the basis for the BCCR was climatology as well as elements from meteorology. In climatology, the sub disciplines were and largely still are Paleoclimate (based in the department for Earth Science) and Oceanography (based in the department of Geophysics) which was already established in Bergen, and came to found the basis for the research that was carried out at the Bjerknes Centre of Climate Research (BCCR). Additionally mathematics, chemistry and biology were included. The role of *paleoclimate research was considered by central informants as crucial for future scientific advance*. Possibilities for predicting future climate depended on the understanding of the interplay between human made changes and natural processes. To be able to understand natural differences in climate variation it was considered as necessary to explore nature in periods where human influence was absent.³⁸

From researcher's collaboration to institutional approval

The first steps of the research collaboration had been taken at an earlier stage. In the late 1990ies a research group in Bergen working with the challenges generated by climate challenges had been formed. In areas such as climate modelling, research related to aquaculture, the ocean's role in climate change, past climate variability, the role of vegetation in climate change there were preconditions for what later became a research collaboration. Informants argued that research was dispersed among several institutions, either inside the university departments but also outside the university. The collaboration between these key research groups was informal and several attempts were made to establish a comprehensive

³⁸ Klimaets historie rekonstrueres. UiB Magasin Nr. 4/97

collaboration. Despite of the many efforts it took some years to succeed in the fourth attempt which is expressed in a quote by one of the key actors:

“To describe the situation we can go back to how it was in Bergen in late 1990ies. At that time there were three actors who all had a certain activity within climate research, the IMR, different departments at the university and here at NERSC. And the collaboration was not particularly good. We tried in the 1990ies to gather these persons, researchers, students... We tried three times but did not succeed, it became too difficult. The fourth time we succeeded and there were three persons behind it.” (Informant A3).

In 1998 a committee consisting of key persons from the research institutions that later formed the basis for the collaboration, was established to develop the idea of cooperation. The specific process is described like this:

“We sat down and wrote a small document where we outlined the advantages of joining as well as the need for uniting in order to be able to address the rapid challenges we are confronted with concerning human made climate changes.” (Informant A3).

One important drive for the collaboration was that key researchers at departments (Geophysics and Earth Science) in the university had competence on *weather forecasting models at a global scale*, but the second partner brought into the collaboration an extensive competence for creating *global climate models*, a research area and a tool that was strengthened as a consequence of the collaboration. The third partner and central actor was the research institute heavily funded and formally administrated by the Ministry of Fisheries and Coastal Affairs and possessing a long tradition in *knowledge on marine research*. Thus, the initial discussions of establishing a centre for climate research was constituted by the relevant research environments and individual researchers within and around the university while in the closing stages the director level of all partner institutions became involved making the research collaboration part of an institutional strategy. The name *Bergen Climate Model* came to refer to the research tradition that gradually had developed in the city. This was the first

steps to what was named the Bjerknes Collaboration, an agreement for expanding the research on climate in terms of joint research applications and research projects as well as funding positions.

Between university leadership support and faculty and department resistance

An important element for making the collaboration possible was the support from the university leadership in the initial phase. This is stressed by a central informant:

“...[the research centre director] had conversations with the university leadership, both rector and [university] director and perhaps largely the [university] director, the highest administrative level high up in the university” (Informant A1).

Formally, the application of becoming a CoE had to be filtered and made by the host institution, which in this case was a university. Implicit in the support were also commitments financially, professionally, and in the supply of infrastructure. The initiative from individual researchers was taken to the highest level at the university institution (especially the university director was important), surpassing the faculty level and to some extent the department level. This move is vividly described:

“So that process started by leapfrogging over the faculty and going directly to the university leadership which made the process speed up but at the same time lead to some friction between the faculty and the research centre” (Informant A1).

Thus, altogether this strategy caused some friction between the initiators and the faculty, and between the initiators and some departments fearing a situation with overload and tapping of resources (teaching and research equipment) from the departments. In 2007 the Faculty of Mathematics and Natural Science hosted three CoE³⁹. The tension between the research centre and the departments are expressed by another central informant:

“We must relate to the department of geophysics ...the department of earth science and the department of biology. ...One needs to nurture a certain relationship and talk and make clarifications and we are honestly struggling with the department level in terms of our ambitions and their ambitions” (Informant A1).

Another informant confirms a tense relationship between the research centre and departments:

“Some departments were more positive than others and I think it was a more positive response at higher levels such as faculty level compared to the departments. Since it implied taking resources and change organisation and take people out from the departments and not everybody were positive towards doing that” (Informant A7).

Thus, one explanation for taking the ideas straight to the top level seems to have been the degree of resistance and competition from for instance the department level. The threat was obvious at the department and faculty level both in terms of being excluded from important decisions and the risk of loss of resources.

³⁹ Two CoE was set up in 2002 (BCCR and CIPR) and one in 2007 (Center for geobiology).

Climate challenges, interdisciplinarity and opportunities for funding

The arguments that are offered for why the climate centre was created are several and interrelated. An *interdisciplinary approach* to climate challenges was considered as crucial producing a need for collaboration between the research environments under the organisational framework of an interdisciplinary research centre. This is clearly expressed in several quotes:

“...the climate system is really interdisciplinary and we need to have people ... within meteorology, the atmosphere, sea ice, snow, ice on land, the ocean and vegetation, and this brings in chemistry... and biology. It is impossible for a single person sitting in an office to have adequate knowledge and breadth to manage these different things” (Informant A3).

A second quote emphasises the need for interdisciplinary research:

“To be stronger in our own disciplines we need to take the step towards interdisciplinarity. You might see it as a development – we had different languages ...and [it was necessary] to get respect for research areas and persons and together build new knowledge. The climate research we do today is truly different compared to what we did five-six years ago – it has been an enormous development and we are much less oriented towards disciplines...”

(Informant A6).

A third informant highlights climate challenges generating the need for collaboration:

“I would say that the main reason was to deal with the question of climate challenges, [and concerning] human beings role in climate change it demands an interinstitutional collaboration... So it was our motivation that the challenges were so great that we had to unite in order to increase our knowledge in the problems... I cannot claim that the establishment of BCCR was based on an argument for strengthening academic basic research” (Informant A3).

Again it was pointed out that the main argument was generated by the research problem and not in basic research. The quote below further explains the need for advance in methods and techniques:

“One of the central issues in climate research is climate modelling and to build a climate model that is state-of-the-art... and NERSC together with some researchers at geophysics had come far in building a climate model. ...In the beginning building climate models is a science of technique of engineers and mathematical knowledge. But asking the proper questions to climate models as well as improving climate models is an interdisciplinary problem where those who are more oriented to processes and dynamics [become more important] (Informant A1).

It was also clearly stated by central actors in interviews that such a research and organisational framework would also improve the positioning for revenues by funding agencies and allowing an expansion in fields that were thought of as essential for understanding the scope of climate variation but also for being better prepared for the priorities to come in climate research. Another inspiration for the development of the Bjerknes Collaboration was initiatives and communication with the Research Council of Norway (RCN). Early key persons at the Bjerknes collaboration were informed that in the near future an announcement of program concerning the selection of Centres of Excellence was to be realized. The motivation for creating a strong collaboration for positioning to future announcements in the RCN was important. Therefore, the idea for the Bjerknes Collaboration was well received and came to be the basis for an application in the program of CoE.

Consequently, the group was awarded the prestigious and hard attainable status as a Centre of Excellence. The status and the grants that followed over a ten year period gave several opportunities. Officially, it was in this period the collaboration was transformed into a more formalized structure of a centre. The grant for more than two million euros every year for the next ten years, served as a buffer for the centre. Initially the money provided the centre with the opportunity for expanding in terms of research facilities and equipment, but also the

opportunity to fund doctorates and post doctorates in specific areas of research that one understood were important to develop knowledge on climate issues.

6.5.2 Logic of adaptation and transformation of climate research

At a later stage a shift in institutional logic largely spurred by changes in the environment emerged. This involved a set of changed premises in the environment related to funding sources, research priorities in the RCN's climate programs, national higher education reform, new rules by the Ministry of Education and Research as well as internal processes at the university. This had implications for a shift of focus in terms of research area, specialisation and key disciplines. Also the entrance of new actors was an expression for a shift in logic.

An insecure funding environment

Thus, in this second phase, the research centre gradually came under pressure due to the fact that the period of CoE grants was running out and the altered premises at the research council of Norway's climate programs. The RCN's program that was usually targeted by researchers in the research centre seemed to change direction by becoming more involved with *adaptation and effects in climate research*. This is illustrated by the quote below:

“...what we see now is that the part of research funds which is based on the pure understanding of climate system, the natural science part of the climate system, ...is becoming smaller and smaller. ...the part that goes to research on effects is becoming bigger and bigger. It means that we have to change focus from the pure understanding of climate systems to a [focus] of climate scenarios, a bit more towards other fields/disciplines” (Informant A2).

The implication for the centre was that they had to reorient their research towards other subjects that generally were in their periphery. The researchers expressed a clear opinion of what can be called a politically governed climate research. The former emphasis of understanding climate variations by conducting research on past climate variation was marginalized as a priority in the research programme as it was assumed that there now exist sufficient understanding and knowledge on these matters. This critique towards this development is expressed in the following quote:

“...it is not certain that that there will be a call from the RCN at all... we know that climate change is coming and now its only adaptation. ...[however] everybody knows that there is [still] much that we don't understand about nature and the climate system. ...[In particular] after the last IPCC report was published... ...there were an agreement that one now should do research on what is related to adaptation... (Informant A5).

Again the frustration towards this development was expressed:

“Among many there is resistance to change focus from basic research to effect research, but that's how it is being a research centre without [basic] funding, you have no choice” (Informant A2).

Notably, the changed premises for climate research influenced the composition of researchers in terms of their disciplinary background. In the key discipline that addressed past climate variation, earth science, staffs was reduced in the period 2003 to 2008. The research centre tried to adapt to the new environment by recruiting researchers from disciplines in climate research that largely corresponded with the new program's profiles. This led to a shift in climate research but still the old funding sources remained essential for continuity in the logic of understanding.

Shift in research interests and reorientation in funding

Accompanying the shift in research interest was a reorientation regarding the general funding situation. Partly new sources were addressed in addition to new users such as the *local government, industry, and private sector*. Local government needs were different from the former users' needs in the sense that concerning climate challenges they were interested in the consequences for the regional and the local, the implications for the different sectors such as insurance, contractors, the city's infrastructure and demanded research that would make them better prepared for how to adapt to future climate problems. This is expressed by one informant:

“[I] use pretty much of my time now to hold presentations at board meetings, general meetings and so on for private sector [and] on the level of municipalities and counties because there is a huge need for knowledge on what the future will bring” (Informant A3).

More specifically the informant provided examples of sectors and firms where researchers had presented research such as car producers, law firms, tourism business, quota trading, and the energy sector. Thus, the research centre turned its attention from a global focus on climate challenges and global models towards climate research focusing on the effects and downscaled models aimed at the local society. Local government did not however enter the role as central funding source.

“...increasingly it will be a greater need to transfer the activity we have to applied research to approach new user groups. If one is dealing with changes in the physical climate system, then it will influence almost all sectors, and the different sectors have different needs for knowledge. ...So then we will move further away from traditional basic research in all disciplines” (Informant A3).

The new environment created a need for a reorientation within the research centre towards new research fields, new actors and new users that in a next phase influenced the research centre's goals and ambitions. This is in line with Scott et al. (2000) claiming that both external and internal forces influence an organisational field. The external forces can be seen as spurring the creation of a new logic. Still some features were stable and preserved such as the focus on research on past climate variation although on a smaller scale, funding sources and partner institutions.

A new political environment for the research centre

A comprehensive reform in higher education changed the context for externally funded research at universities. The Quality Reform largely implemented in 2003, represented substantial reform elements, including changing universities' financial model (effectuated in

2005). Post reform, the university budget partly depended on results such as the degree of attaining external funding in which case the university was awarded extra funds⁴⁰. The immediate consequences for a university were that the revenues obtained by research centres from national and European funding agencies became a potential growth for the university's budget. Norwegian universities chose to adopt some of the reform elements at the level of institutional budget. At the University of Bergen, some of the elements were put on hold but eventually implemented.

In 2008, the Ministry of Education and Research launched new rules prescribing that research activity funded outside the university budget should be organised within the universities' structural framework⁴¹. Earlier in 2007 a university appointed committee at UoB, decided to reorganise the regulation and control of externally funded research⁴². To better draw advantage from the resources that were generated from such research the university decided that research projects conducted by university academics should be administered within the institutional framework of the university. In the work of the same committee, dissatisfaction with the organisation of CoE was expressed. Consequences for the research centre were that the CoE came to be transferred to the university.

This process was taking place parallel with the contract of the final period of the CoE was signed by the research centre. Grants that followed the CoE was transferred to the university yet the whole research centre came to be divided into two sections – one that remained outside the university and within the foundation organizing externally funded research and the

⁴⁰ St.meld. nr. 27 (2000-2001) Gjør din plikt - Krev din rett. Kvalitetsreform av høyere utdanning.

⁴¹ Rundskriv F-20-7. Kunnskapsdepartementet 2007. Reglement om statlige universiteters og høyskoler forpliktende samarbeid og erverv av aksjer.

⁴² Faglig helhet – organisatorisk mangfold. Om forskningsorganisering ved Universitetet i Bergen 2007. Innstilling fra utvalg nedsatt at Universitetsstyret høsten 2006.

second within the university, each part with its own board and leader. The university part that now held the CoE funds, was also put in place to repair the tense relationship between the centre and the faculty of mathematical and natural science as well as between the involved departments. The implications of this change were criticized by one informant:

“It means that concerning projects, things will be more formal. ... I have to look out more when I am at (NERSC / partner institutions’ name) when entering projects and I can imagine that the UoB part and the Unifob part in BCCR will be very [clear] on getting what is theirs” (Informant A5).

The reorganisation was considered as a step backwards for the research centre moving towards more formalized collaboration where the researcher institutional affiliation was increasingly important and not integrated research collaboration.

6.6 Lost in transition - replacement of institutional logics or multiple institutional logics?

Based on analysing the research centre we can argue that there were different institutional logics shaping researchers’ problem choices in different phases. The *logic of understanding* was the dominant logic in the early phase where first initiatives were made to create more integrated research collaboration and in the formation of a more formal structure of a research centre. Within the logic of understanding several features prevailed. *Firstly* was that researcher’s interest and problem choices were based on the perspective of understanding present and future climate variations and systems by studying past variations. This perspective had specific implications for which disciplines and sub-disciplines that were involved. On one hand there was a close relationship to basic disciplines at the university that had been essential for developing climatology research. This supports the claim that climate research as understanding and as system has been related to a specific context for knowledge production, i.e. the contribution of scientific disciplines. What has been termed the academic heartland was highly important for making the research centre possible. On the other hand it is clear from the research centre that the research organisation that usually is associated with disciplines was insufficient to improve climate research and even a barrier. Similarly, the

main argument for a closer collaboration and creating a more integrated research centre was not based on strengthening basic research but on a need for interdisciplinary research collaboration to create advancement in climate research.

Secondly a narrow integration of disciplines where already closely related disciplines were involved characterized the research centre (mainly natural science disciplines) in this phase. An interdisciplinary approach was a key component in this logic as it was argued to be essential for developing research within this area. It was necessary for acquiring funding that in a second step could make possible expansion in the number of researchers, a key element for making the research area to develop. The approach also influenced the particular areas of research interest. Within this logic climate research was considered strongly a global matter in terms of research perspectives and methods.

Thirdly the logic of understanding was also important for the process leading to the establishment of the research centre where a bottom up initiative and collaboration was established by key research institutions that were assumed to generate development in climate research within this specific area. The priorities in the research programmes were to a great extent matching the internal research priorities in the research centre. Actors outside the university that were involved in the collaboration were included due to being important for research and related to research interest.

One of the research questions addresses whether there had been a change in institutional logics. Drawn from theories of institutional logics we can separate between logic replacement where logics get lost in the transition from an old to a new and the existence of multiple logics. The *competing logic of effects and adaptation is particularly connected with the second phase* of the research centre and largely spurred by changing premises in the environment and political intervention, from central bureaucracy and the university. These changes in premises lead to strains financially and strains in terms of research focus. This is in line with questions related to funding being considered as a marker of shift in logics (Scott et

al. 2000). However, the changes related to funding are not related to a change in funding sources. The funding sources that had been important before continued to be important, it was rather the shift in priorities that generated shifting logics. The research goals of understanding the climate system together with the constellation of disciplines that had been essential in the formation of the research centre were contested. Institutional logics literature suggest that when new logics are created the logics that direct, motivate, and legitimate the behaviour of actors in the field are changed (Scott et al. 2000:27). On the other hand the logic of effects and adaptation are taken for granted and basis for legitimacy (Dunn and Jones 2010).

The shift in institutional logics clearly involved a change in research interest and basis for researcher's problem choices. It also influenced the structure of disciplines and specialisation in the research centre where new disciplines were integrated and which suggests a wide integration of disciplines (Newell 1998 in Klein 2010). Knowledge production is contextualized broader as users in society and politics influence science. New actors also reflect this shift in logics; researchers paid a stronger interest into local government and industry and the implications if climate change for different public and private sectors. But the new actors did not become important for funding research. Compared to other countries Norway is associated with relatively few external funding sources and little private funding of public research which might limit the opportunities for new financial revenues. The institutional environment surrounding the research centre seems to represent conflicting logics and being the source for new institutional logics to emerge. Based on assumptions related to institutional logics the research centre seemed to experience *difficulties of maintaining support from powerful actors* such as the RCN.

The shift in institutional logics clearly reflects a shift in the relation between actors and institution. By focusing on micro-level actors and not only in field-level actors we can understand how initially competing logics was able to co-exist (Reay and Hinings 2009). Following from this is that the creation of a new logic is not exclusively related to authoritative or influential actors but rather *incremental steps towards a goal*. Instead a focus

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on micro-level actors considers institutional logics as developed “under the radar” that eventually emerged into new institutional logics (Battilana 2006). Accordingly, the commitments that followed from being a research centre with a substantial part of funding depending on external sources spurred the shift in logic. Although the research centre initially was not supposed to address climate research as effects and adaptation but rather as understanding, the premises of being a research centre largely depending on external funding sources paved way for a change in logics.

The initial set of actors changed as these gradually came to include different kinds of users such as local government, industry and private sector. *The shift does not seem to be generated merely by authoritative or influential actors but rather being caused by smaller steps towards one direction.* This illustrates that actors themselves play an active role in shaping institutional logics but that this is also limited for instance when support from powerful actors are declining. This is line with the understanding in literature of institutional logics: “Decisions and outcomes are a result of the interplay between individual agency and institutional structure” (Thornton and Ocasio 2008:103). On one hand individual and organisational actors have an interest in gaining power, status, and economic advantages. But on the other hand the means and ends of these actors are enabled and constrained by existing institutional logics.

6.7 Conclusion

The article has addressed internal and external definitions of problem choices and how different forms of knowledge production influences researchers interest. The shift in institutional logics by far echoes the change in knowledge production discussed earlier. The researcher’s problem choices and research definitions shifted from being based in scientific disciplines towards scientific choices taking place in a context of application. The case shows that science is produced in a broader context and in more heterogeneous locations. But this does not necessarily mean that the case is an example of mode 2 and post academic science. The analysis of the research centre and researchers’ perceptions show that there is coexistence or stability of forms of knowledge production. To a great extent the advantage of drawing on

several kinds of literature such as sociology of science and higher education opens up for perceiving changes in forms and locations of knowledge production but also the features that are kept stable. In line with this institutional logics demonstrate that one form of knowledge production does not exclude elements of another. New institutional logics surrounding the researchers are created and challenge past logics in science but they co-exist in the sense that features from both logics exist. From this we can draw conclusions about the relationship between actors and institutions. The case has showed how institutions shape actors but also that actors have a capacity to adapt to new circumstances and to influence actors within the university and research policy.

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6.9 Appendix

Table describing features of informants

Label in interviews	Specialisation	Formal role in the research centre	Other important roles or positions
A1	Geophysics Paleoclimatology	Research group leader and representative of Leader forum	Senior researcher
A2	Geophysics Physical oceanography	Vice director, leader of research group	Assistant professor, leader Research School
A3	Geophysics Climate modelling	Research group leader	Professor
A4	Geophysics Meteorology Climate dynamics	Participant in the establishment process, referee in IPCC Reports	Professor
A5	Applied mathematics Dynamic oceanography	Research group leader	Researcher
A6	Earth Science Marine Geology and Geophysics	Deputy research group leader	Researcher
A7	Earth Science Palaeoclimate		Researcher 20% position assistant professor
A8	Geophysics Chemical Oceanography	Deputy research group leader	Researcher
A9	Biology Paleoecology		Researcher
A10	Geophysics Palaeoclimate	Deputy research group leader	Researcher

Chapter VII: New Organisational Structures and the Transformation of Academic Work⁴³

7.1 Introduction

In the last three decades, higher education institutions⁴⁴ (HEIs) in Western Europe have been subject to governmental policy reforms. The implications of the reforms vary among countries and not least among institutions (Paradeise et. al 2009). This article will particularly focus on Norway and the consequences for *academic work*. Frequently in studies of academic work, focus has been on academics' individual autonomy and to what extent the latter is challenged (Altbach 1980, Shattock 2001). The argument of a declining state of the academic profession has existed for a long time and large parts of the academic work literature circle around a claim of an end of a golden age (Halsey 1992) and one-sided negative interpretation of change (Readings 1996). One of the shortcomings in literature dealing with academic workplace is

⁴³ The authors would like to thank Christine Musselin and Ivar Bleiklie for comments. We would also like to thank the project "Steering of Universities" (PRIME - Network of Excellence / VI EU Framework Program) for inspiring to our doctoral projects.

⁴⁴ The term Higher education institutions is used in the article due to an assumption that changes are taking place across different kinds of institutions such as universities, colleges and polytechnics.

lack of attention paid to the emerging division of work generated by an increasing differentiation of the academic profession (Musselin 2011). In order to better address complexities and dynamics that surround academic work, the article will in particular examine whether academic work is subject to an increasing *specialisation* and *collectivisation*, naturally taking into consideration disciplinary variation. If stronger collaboration of individual scholars within collective structures is observed, the general trend identified in science studies seems to be confirmed, whereas the empirical observation of increasing specialisation in either teaching or research activities in our data would challenge the traditional teaching-research nexus.

In our attempt to observe changes in the practices of academic work, particular interest is given to “how the organization of an academic enterprise affects academic work” (Blau 1994:8). Inspired by organisational theorists such as Brunsson and Olsen (1997) we also want to attend to the relations between organisational change and academic work. Here we address the relationship between *formal* organisation and *informal* organisation which is likely to develop as *decoupled structures* – one adapted to institutionalised norms of society and the other for co-ordinating activities. In this article, this would imply that new organisational structures at the university are created on the basis of demands from society more than internal institutionalized norms such as professional or disciplinary. Likelihood for decoupling to take place within the university increases when academic norms and values diverge with underlying goals of reform. Decoupling addresses limitations within the perception of organisation as rational and assumptions of hierarchy creating tight couplings between formal and informal practices. However, there are tendencies suggesting that universities are becoming less specific as an organisation (Musselin 2007) where they converge to more general organisational characteristics by constructing dimensions such as identity, hierarchy and rationality (Brunsson and Sahlin-Andersson 2000). In this article we are mainly interested in how hierarchy is constructed enabling coordination by an “authoritative centre” (Brunsson and Sahlin-Andersson 2000:726) and how it interferes with traditional forms of organising the university. This calls for a concern to whether the specificity of academic work, built of the

mainly individual exercise of a large diversity of tasks, remains a key characteristic for organising academic activities at universities. Other literature has paid attention to the convergence between academic organisations and industrial organisations such as Gibbons et al. (1994) and their ideas of the new knowledge production. The organisational integration of the production of knowledge is emphasised – it takes place not only at universities but also in research centres, research institutes and within industrial organisations. This literature will not constitute the basis of the paper.

Empirically this article studies changes in academic work regarding new patterns in organizing research funding and doctoral education in Norway that emerged in the last decade. Like in other European countries, new policies for research funding and doctoral education have led to the creation of new organisational structures within Norwegian HEIs, namely *research centres* and *doctoral schools*. Both structures often have an *interdisciplinary and inter-institutional character* and may challenge traditional academic structures like HEIs' faculties, which are built around similar disciplines and organise teaching and research. Thus, since “the academic enterprise” seems to be partially re-organised through these new structures, we examine to what extent academic work is affected particularly focusing on teaching and research.

This question is addressed since traditionally most European HEIs have carried out both missions while recent reforms may favour rather one *or* the other. Academic work is particularly well suited to observe such changes, since it constitutes concrete activities of individual academics that push the pendulum in one direction or the other. The hypothesis of a collectivisation process is also particularly intriguing for instance because a career of an academic largely depends on individual performance. However, new organisational structures, like research centres and doctoral schools, imply, *a priori*, a strong collective dimension and stimulate working in a collective manner. As mentioned, the empirical examination of the hypotheses of specialisation and collectivisation will pay attention to formal as well as informal practices.

Our article is divided in four sections: after this introduction, the first section reviews literature that focuses on the concepts of *specialisation* and *collectivisation* in the context of academic work as well as recent changes in academic work more generally. Section two deals with the *Norwegian context* and change in academic work. The third section is *an empirical analysis of formal and informal changes in academic work* within one research centre and two doctoral schools within a Norwegian university. Data from the authors' individual PhD studies is based on more than 30 semi-structured interviews with central actors, such as doctoral students, professors, institutional leaders (deans, rectors) and administrators. Finally, in the fourth section we summarize empirical results and offer conclusions about implications for HEIs' missions and for academic work.

7.2 Recent changes in academic work

The concept of specialisation has been defined in different kinds of literature such as the sociology of professions, where it is related to the "internal stratification of professions" (Abbott 1988:81). In the sociology of work, the concept relates to division of labour and occupational differentiation processes (Caplow 1978). Also the literature on interdisciplinary science addresses specialisation, for instance when defining disciplines (Turner 2000). Further, the concept of specialisation is also present in higher education literature where it has been addressed as fragmentation within disciplines (Clark 1987). One of the key scholars within philosophy of science and science studies, John Ziman, suggests a similar argument: specialisation has been one of the corner stones of organizing academic activities into subfields and disciplines (1994, 1996). However, specialisation is also related to forms of knowledge such as Bechers' classification of hard pure knowledge (Becher 1989). In addition, it can also be seen in terms of functions and job specialisation (Segal-Horn 1998), such as teaching at undergraduate level only, doctoral students and postdocs assigned exclusively for research, professors in charge of getting additional funds, creating contracts and writing project proposals (Musselin 2007), which means that tasks are distributed according to career position. Furthermore, specialisation is related to contractual status and the expansion of so-

called contingent staff (also called the temporal-legal dimension in Schuster and Finkelstein 2008: 325). Thus, specialisation takes place according to disciplines and functions. One can ask whether there are links between these two understandings of specialisation. For instance, would a de-specialisation of disciplines (interdisciplinarity) generate a second form for specialisation, that of functions?

The term collectivisation, among others frequently applied in science studies, is addressed as a process which involves that academic workers become part of a larger scientific collective (Ziman 1994). Some state that there is an “overall trend from individual to collective modes of work” and transformation of research into a “collective enterprise” (Ziman 1994:64). Collectivisation can be described as the organisational structure of research centres (Etzkowitz and Kemelgor 1998) but also as practice and activities carried out in larger groups (Ziman 1994) often with an applied and transdisciplinary character (Gibbons 1994). Within universities, collectivisation practices can take the shape of publishing with several authors or an increasing focus on networking. Such developments have been reported in France (Barrier and Musselin 2009). What has been called “little science” (Ravetz 1996) – research fields that traditionally were characterized by moderate size – is considered as being less adequate in today’s research environment, though this does not apply to all scientific fields. A concentration mantra calling for organizing researchers into teams is becoming more common, and a collective ethos supporting large and highly differentiated research units has evolved (Ziman 1994) that often cross organisational and sectoral boundaries (Barrier 2008). Still the relationship between different forms of collectivisation is unclear. For instance, does collectivisation understood as organizing research into research centres necessarily promote collective research practices?

Higher education literature on academic work and academic staff in transition circles around changes in work tasks, working and employment conditions according to rank (Enders and Teichler 1997; Shuster and Finkelstein 2008; Gappa, Austin, Trice 2007). The literature stresses the increasing specialisation in the academic profession followed by changes in

working and employment conditions (Enders and Musselin 2008). Yet, it differs in its description of the current situation and in the interpretation of the implications for the academic worker. On one hand, the transformation of academic work is described as a move from the integration of teaching and research duties of the scholar towards the concentration on one principal task (Musselin 2007), that is either teaching or research (Schuster and Finkelstein 2008). A related consequence consists in new forms of control such as management of employment regulation at the central university level, which promote the university as an institution rather than the performances of individual academics. Hierarchical structure becomes increasingly important for regulating academic work interfering with traditional academic activities. Still, the conclusion is not unilateral loss of control at the expense of the academic profession. Rather, new forms of control exist in parallel to academic regulation. Other branches in higher education literature perceive the transformation of academic work due to neoliberal forces, market forces and commercialization (Currie and Vidovich 2009, Bok 2003). On the other hand, there is literature that addresses specialisation indirectly such as authors associated with the concept of academic capitalism (Slaughter and Leslie 1997, Rhoades and Slaughter 2004). In line with this literature changes are largely forced forward by decreasing university funding claimed to influence academic work and resulting in the splitting up of academic activities. The conclusion is that this change involved a loss of control over academic work. Next section will provide a short historical backdrop and address transformations in academic work generally in Norwegian universities.

7.2.1 Signals of changes in academic work at Norwegian universities?

Historically, the Norwegian academic profession has been linked to the continental model characterized by state institutions with the intention to educate civil servants (Aubert et al. 1960). Academic work was largely “regulated by ordinances concerning the institutions, the degree structure and exams and the general legislation concerning civil servants” (Høstaker 2006:133). The relationship between the state regulation and universities has been characterized by autonomy and self-regulation (Høstaker 2006). From the 1950ies, the Norwegian academic profession experienced what has been called a “process of

homogenization and equalization of status and working conditions” (ibid 2006:106). In this phase, the middle group of the positional hierarchy underwent a process of expansion of rights and responsibilities by greater involvement in research. Eventually in the 1960ies, there was a growing tendency of homogenisation of working conditions and practicing of the rule of a 50/50 time separation of research and teaching became a general rule (Høstaker 2006). These changes influenced the professoriate level. The homogenization process gradually diluted the difference between the middle tier level and the professoriate. In 1991, a professorship became feasible for middle-tier staff as the professor title became attainable through promotions based on formal qualifications (Bleiklie et al. 2000). More recent reforms have also influenced the academic profession and academic work. University reforms of the 1990ies have been described by “Quality and systemic integration” (Bleiklie 2009: 136), a period where reforms are characterized with a greater focus on quality in the sense of efficiency and production. Financial allocation became more result based as for instance the number of students and their performance were increasingly linked to the funding of universities. The reform in 2003 of the government’s budget model of universities signalled a stronger division between teaching and research as it, in addition to the 60% general grant, separated between performance based allocation related to student production, research funding from external sources and research publications. Financial incentives for PhD production was also integrated into the university’s budget model. Thus, the more a faculty awards PhD degrees the more it gets funding which is distributed to the department hosting the doctorate.

Today, there are significant signs of change among academic workers in Norway. Moving from an academic profession largely represented by permanent academic staff funded by a university’s budget to a growing share of temporary academic staff and a growing number of externally funded employees is particularly evident within universities (Michelsen et al. 2006). Furthermore, in the report on the Norwegian Quality Reform in higher education, academics expressed that administrative tasks had grown, especially related to teaching duties and exams within universities, as well as quality assurance work such as learning outcome

processes and reporting on productivity (Frølich and Waagene 2008). Besides general working conditions and increased administrative tasks, the example of Norway confirms some of the changes in the academic profession. One of the changes is moving from the idea that having an academic position at the university in the 1970ies was an expression of the built in nexus of research and teaching, to more recent periods where the transformation in division of labour has come in the shape of a greater differentiation of academic positional categories with more specialised tasks (Nilsen 2005).

7.3 Changes in academic work in university based research centres and doctoral schools

In this section, questions of specialisation and collectivisation are examined through case studies of one research centre and two doctoral schools situated within the University of Bergen (UoB). It is one of the old research universities with a geographical location in the westcoast and is the third largest university of Norway.

The cases serve as critical cases (Flyvbjerg 2006) which may illustrate a specific development emerging in the margins of an institutional structure. Flyvbjerg (2006) suggests that critical cases “can be defined as having strategic importance in relation to the general problem” (2006: 229). Thus, the case of the research centre belonging to the harder disciplines and faculties, has a bias for project funding and project research where new positional categories have been integrated for a longer period. The case is one of the university’s flagships as Centre of Excellence and has been successful in terms of academic quality but also financially. The cases of doctoral schools can also be termed critical cases as in this period doctoral schools were beginning to emerge within Norwegian HEI.

Besides the case studies’ partly interdisciplinary and interinstitutional character, another argument for using research centres and doctoral schools as empirical entry points is that we consider both as legitimized with reference to a critique of disciplines’ inabilities and problems: organizing research and doctoral training based on disciplinary structures is related with resistance to change (Weingart and Stehr 2000), a limited capacity to address societal

and political questions from a cross-disciplinary angle and ineffectiveness in the graduating process of doctoral students. This is clearly reflected in the Norwegian government's policies behind the creation of research centres and doctoral schools, as will be shown in the next sections.

7.3.1 Research centres in Norway and the case study at University of Bergen

In an early phase⁴⁵, research centres were characterized by their modest (organisational and financial) size and based on researchers' initiative. More recently, they represent larger organisational structures with research profiles, increasingly stable and sizable financial support from public and external funders and are integrated into university's third mission strategy as well as in accordance with national research strategies. Today's research centres seem to be part of a broader acknowledgement of the need for strategic instruments for universities to position themselves as appropriate players in the battle for resources (Henkel 2005). Qualities such as interdisciplinarity as well as the ability to respond to targeted questions in research programs and to organise research only staff is some of the benefits that emerges from literature on research centres. The flexible structure that centres represent are seen as "particularly adapted to responding to needs and requirements of research patrons" (Stahler et al. 1994: 542) and have been one of the main arguments for their creation as well as their compatibility to interdisciplinarity.

The research centre selected for this study, Bjerknes Centre for Climate Research (BCCR), established in 2002, represents a cross-disciplinary collaboration within natural science climate research. It is a university based research centre with close overlaps in staff and

⁴⁵ In the Norwegian context, this phase takes place in the late 1970ies and early 1980ies.

activities with the university. It has the status as Centre of Excellence (CoE) – an innovation in Norwegian research policy established with the intention to improve the quality of research by concentrating financial and academic resources.

The CoE status is followed by long-term funding⁴⁶ from the Research Council of Norway (RCN) which serves as approximately one third of total income. Further projects' funding from the RCN and the EU are other main financial sources. The research centre employs a great number of research only staff who formally are employed within a unit organizing externally funded research. It varies where a position is formally placed - within a department or the research centre. In addition, academics from the university have played a central role in building the collaboration and are themselves compensated with an extra 20% position at the centre.

Several formal and informal factors influenced the organisational structure of the research centre. Until a recent reorganisation of project funded research within the University of Bergen there was a formal agreement by the university board⁴⁷ stating that all climate research at the university should be concentrated at the centre. Since parts of the centre organisation belonged to the unit organizing large share of externally funded research it seemed natural to continue this path. This can be interpreted as the university management's ambition to improve concentration of research and a collectivisation of research. However, the division between the department and the research centre structure seemed relatively weak in the period it was studied. The research conducted in the department and within the research

³ Up to ten years.

⁴⁷ The university board consists of members from the academic community as well as external members such as local politicians and from private sector.

centre cannot easily be differentiated due to the close overlap in academic staff and the long tradition within this particular faculty for project funded research. Largely, this relationship was characterized by negotiations and *ad hoc* solutions. For instance concerning the question where positions should be situated, access to labs and equipment was a motive superior to strategic reasons promoting collectivisation and specialisation. The internal reorganisation within the University of Bergen in 2008 demanding that university employed academics' research projects should be organised within the departments, can be considered as an expression of a need for clearer division between the two structures (departments and research centre). Prior to the reorganisation, a faculty based committee appointed by university leaders was established with the mandate to evaluate the university's allocation model, adjusting it to government's policies for financial distribution which now included a clear set of parameters in education and research. In addition the committee's mandate included a revision of the model for organizing externally funded activities which also needed to be more in accordance with the government's model for funding which now was related to third-part funding. Another factor pushing forward the reorganisation was the national budget model for universities launched in 2003 (modified in 2005) as part of the Quality Reform, which meant that universities' budgets were linked to performance in third-party research funding. Project funding from external sources such as the RCN and the EU Framework Program would eventually profit the university's budget. However, at that time internal organisation and division between a university structure and a separate organisation dealing with research funding also meant separate budgets. The success of research centres in acquiring external research funding did not benefit the university's budget directly. Thus, in general, decisions related to the organisation of the research centre and its relation to the university seem to be characterized by a continuous struggle of balance between the university management's ambitions to support collectivisation in research on one hand and daily pragmatism where finding adequate solutions to daily management were more important on the other hand. Conflicts at several levels often occurred due to the ambivalent organisation of research centres: professors attached to a research centre were in a squeeze between teaching and research obligations in department and one's research interest in research centre, departments

feared losing infrastructural and academic resources, the research centre's location in the university organisation was not promoting interdisciplinary research, and researchers felt too far organisationally from the central management and central decisions.

7.3.2 Doctoral Schools in Norway and the case studies at University of Bergen

In Norway, the idea of doctoral schools was launched in an evaluation report of Norwegian doctoral education in 2002.⁴⁸ Their establishment has been one of a series of measures which should remedy problems of too few doctoral students, too few candidates who finish their doctorate and too old doctoral graduates (Kyvik 2002). Since then, some HEIs or parts of their constituting Faculties and other units reacted by encouraging their academic staff to build doctoral schools. In some cases, these encouragements have been underlined with financial incentives, whereas in others, they took place on a purely rhetoric level. With the integration of the third (doctoral) cycle into the Bologna process, a new funding instrument within the Norwegian Research Council encouraging Norwegian HEIs to create network doctoral schools was introduced in 2008.

The cases cover two interdisciplinary doctoral schools, one in humanities and another in molecular and computational biology. The National Research School⁴⁹ „Text, Image, Sound and Space“ (*Nasjonalt forskerskole tekst, bilde, lyd og rom – TBLR*) can be considered as Norway's first national doctoral school in the field of humanities. It has been managed by a network of academics coming from the Faculty of humanities at four Norwegian universities, the Universities of Agder, Bergen, Tromsø and the Norwegian University of Science and

⁴⁸ Doctoral schools were already suggested in 1988 by the government appointed Hernes Commission.

⁴⁹ In Norway, doctoral schools are mainly called research schools (*forskerskoler*).

Technology (NTNU). Created as a pilot project for the period 2004-2008, TBLR Research School continues to exist. It focuses on scientific fields related to aesthetics. Based on number of participating doctoral students, each of the four involved HEIs makes a financial contribution. In the case of the UoB, this contribution is carried out by the Faculty of Humanities. Among the reasons for TBLR Research School's creation, several interviewees first underline the problem and the need for action regarding drop-out of doctoral students and the long duration of doctoral studies. These problems identified in the evaluation report about Norwegian doctoral education (see Kyvik 2002) have been confirmed by a more detailed report about the University of Bergen (Tvede and Hovdhaugen 2002), in particular in humanities. A second contextual element relates to the curricular component. Doctoral courses, especially in humanities, are perceived by doctoral students as poorly developed (Kyvik and Olsen 2007). The initiative of establishment of TBLR Research School came from its main coordinator at NTNU in Trondheim. Confronted by the national evaluation of Norwegian doctoral education, the coordinator felt the necessity to act and contacted people at the Faculties of humanities of the other Norwegian universities in order to put into place a national research school. The contact person of the University of Bergen was pleased about the invitation to participate since he considered that there was a need to become active and "it [the idea of research schools] was in the air". However, several colleagues of the Research Schools' initiators were sceptical towards the idea of research schools and it was a difficult process convincing for personal involvement. They considered that their activity as supervisors of doctoral students was limited to reading and commenting the doctoral students' papers. Since there was no formal obligation to collaborate, the Research School has been driven by voluntary staff only. All interviewees underlined that TBLR is the result of a bottom-up initiative. An administrator at central university level remarked that TBLR indeed corresponded to what the university board and the central research board were wishing to happen. However, he also emphasised that those bodies would never have imposed the establishment of research schools in one or another scientific field.

The second case study, the Molecular and Computational Biology (MCB) Research School was founded in 2006. Its founding bodies are the Department of Molecular Biology, the Department of Informatics – both situated at the Faculty of Mathematics and Natural Sciences of University of Bergen –, the Computational Biology Unit at the Bergen Center for Computational Science and the Sars International Centre for Marine Molecular Biology. One further unit, the Department of Biomedicine at the Faculty of Medicine and Dentistry has joined MCB Research School in 2007.⁵⁰ All composing bodies are situated in Bergen. At the study's time, about 60 doctoral students were following MCB Research School activities and an equal amount of funding has been provided by each involved partner. The reasons cited by the interviewees for the establishment of a Research School were the same as in the previous case study. However, compared to the other scientific disciplines, the Faculty of Mathematics and Natural Sciences did significantly better with respect to completion rates, overall duration and age of doctoral graduates. Since the establishment of research schools has been recommended as a sort of “medicine” to the problems experienced by the other disciplines several supervisors first did not feel urged to implement a research school. In addition, initial hopes that the creation of a research school would generate additional money from the national level had to be quickly abandoned (at least in a first phase). According to the involved supervisors' statements, they then realised that a research school may nevertheless be a possibility to improve certain aspects of doctoral education like the Faculty's course offer at doctoral level which was also considered being insufficient and not well adapted to the doctoral students' needs. Interviewed supervisors also argued that MCB Research School represented an opportunity for increased collaboration between the different participating research units, not only among doctoral students but also supervisors themselves. They

⁵⁰ Source: www.mcb.uib.no; downloaded in September 2009.

expressed hoping that such collaboration would lead to new interdisciplinary research. A final argument has been seen in connection with a broader national research policy issue, namely the recognition of certain research units as centre of excellence. A research school might be an added value which favours such achievements. The initiating actors who saw to the creation of MCB Research School are somehow contested. The interviewed professors involved into MCB Research School perceived it rather as a top-down initiative. They claimed having been strongly recommended by the vice-rector and Faculty to establish a research school. Interviewees at central university and Faculty levels spoke about a bottom-up initiative. They argued that their recommendation was of general nature and did not impose the establishment of research schools in particular scientific fields. That said the actors of the next steps on the way towards MCB Research School's establishment are uncontested. The posterior head of MCB Research School contacted the various heads of the partner units involved into MCB Research School and agreed with them on the research school's perimeter in terms of scientific disciplines, its types of activities and funding.

7.3.3 Organisational structure and the specialisation of academic work

The empirical analysis observes some specialisation of academic work, yet to a lesser extent than expected. This especially applies to the research centre which represented concentration of research within an organisational structure and rendered possible expansion and employment of pure research staff. Even in this critical case where we expected that changes actually had occurred, there seems to be a disposition to "act" as a university organisation where research and teaching are highly integrated. A major part of the researchers associated with the centre is employed as *researchers only*. Thus, the university would keep project funding at a distance and temporary researchers at an arm's length. But informal practice in the research centre was evolving and in addition to professors associated with the research centre having teaching duties as part of ones position at the university, researchers at the research centre was considered as a pool of teaching resources, particularly when there was shortage for teaching staff. Thus, the picture of an organisational division between university departments and the research centre was not so obvious when it comes to teaching.

Supervision of students (Master and PhD level) was also a common task for researchers at the centre. However, there seemed to be a distinction between formal and informal practices as formally, only permanent staff at university can serve as main supervisors, whereas staff employed at the research centre can only be *co*-supervisor. The informal practice that evolved due to work overload for parts of the university staff resulted in a practice where on the paper the correct routines were followed and permanent staff was signing contracts for supervision but in reality, another person, usually a co-supervisor carried the main responsibility for PhD student's supervision. Thus, in spite of financial incentives to specialise in research activities, pure research staff also gets informally involved in teaching and supervising activities. If in the case of the research centre no specialisation of practice could be noticed regarding academic activities related to teaching or research, the work related to acquiring funding did. The importance of EU funding for the research centre was crucial and, in some cases, international researchers were employed because they possessed key experience with the EU funding system and EU applications as well as representing a research field that the research centre considered strategically important to expand. Another important source of external research funding, the Research Council of Norway, also incited some researchers and central management actors of the research centre to specialise in fund raising. The RCN was a more manageable contact point for them, which is reflected in their involvement in program committees and the government's strategy for climate challenges, which has been important in setting the diagnosis for climate research and later resulted in substantial funding for the same research centre.

In the case of doctoral schools, the general picture in terms of specialisation resembles the one of the research centre. If there is no clear movement to either teaching or research tasks, one specialised function has nevertheless emerged. Even though no unique definition of doctoral schools exists in Norwegian higher education, the cases allowed for the identification of three main activities, which simultaneously provoke new work tasks. The first activity consists in the offer of a curricular component at doctoral level, the second activity in collective forms of supervision and, the third activity, in enlarged scientific exchange. Permanent senior staff

plays an important role in the exercise of these new tasks. Doctoral courses concern their teaching mission, enlarged scientific exchange rather focuses on research whereas multiple supervision activities can probably be situated somewhere in between. According to the task they assume, they either slightly move towards more teaching or research, or accomplish new tasks which are related to both of them. Since these activities are not formally regulated, it can be said that the degree of specialisation, which is already quite weak, is informally decided by the academic staff itself. Doctoral students' role has been re-oriented towards teaching, yet, not as active teacher but rather as students who attend courses. Thus, their role has been enlarged rather than specialised. In addition, since they are obliged to follow doctoral courses – though not necessarily the ones of the research school –, this enlargement can be considered as formally imposed.

In spite of this relatively weak specialisation process, one new specialised function can be identified. Doctoral school administrators represent this new type of specialists. They can be seen as a way to disburden academic staff from additional administrative work. For instance, they inform doctoral students about new doctoral courses, conferences and other activities specifically dedicated to doctoral students. However, this new function did not always lead to the creation of a new job position. Often, those additional administrative tasks were informally taken care of by existing academic and administrative staff.

7.3.4 Organisational structure and the collectivisation of academic work

The analysis of empirical data shows that collectivisation of academic work has been ambiguous in the case of the research centre and strong in the case of doctoral schools. Researchers of the observed research centre emphasized that according to the different stages of their work this would sometimes require working on one's own but in other cases working in larger groups. For instance, application for funding was associated with a need of collective forms of collaboration. Yet, ambiguity was visible regarding the goal of working in a cross-disciplinary manner, another requirement for funding which is particularly present in the EU framework research programs. This challenge resulted in several reorganisations, first towards

more interdisciplinary research groups and back again to a more disciplinary based structure of research. Researchers experienced that they were more attached to their home discipline and found it difficult to overcome disciplinary borders and to take advantage of potential synergy. Still, the element of size and a collective dimension of projects were expressed by senior professors as a distinction between the former system where one professor carried out a project together with a doctoral student compared to today's scope of projects involving a substantially larger group of people and resources. Working in larger research projects seems to be a catalyst for collective forms of collaboration in research and in fundraising issues. But there are signals of conflicts with this goal such as the commitments to one's discipline and the frequent reorganisations according to discipline or to interdisciplinarity.

Like in the case of research centres, inter-institutional and inter-disciplinary network approaches were often also favoured in doctoral schools, rhetorically but also by making them a condition for funding. Yet, like in the case of an interdisciplinary doctoral program analysed by Holley (2009), the emphasis of respective disciplines and the degree of difficulty of individual courses represented great challenges. For instance, biologists had problems in understanding informatics courses and vice versa. Thus, the barrier for collectivisation seems again to be particularly high in the case of interdisciplinarity. In addition, due to the doctoral schools' inter-institutional character, administrative challenges, for instance regarding accountancy, emerged. In the case of the TBLR Research School, one interviewee also argued that the funding issue was partly responsible for a later focus on rather local than national research school activities. As mentioned, a second type of activity which was often, but not exclusively carried out in the name of doctoral schools, consisted in multiple supervision. Thus, in opposite to the traditional apprenticeship model, doctoral students were not only advised by one only but several – mostly two or three – supervisors. Through this new model of supervision, supervisors are much more forced to interact, which results in a new collective activity in the framework of doctoral education. In the same vein, enlarged scientific exchange – which we define as new practices of interaction focusing on doctoral students' research and training and which go beyond usual exchange between doctoral student and his

or hers supervisor(s) or, in the case of laboratory based sciences, the research group – also implies a strong collective dimension. This included interactions within a group of doctoral students, mostly enlarged by local and invited external scholars. Such interactions involve conferences specifically organised for doctoral students as well as retreats. As a result, doctoral students carry out their doctoral education in a less isolated manner. Finally, it is crucial to underline that these tasks largely have an informal character. Participation in these different activities is mostly voluntary or informally regulated, especially for permanent senior academics. Formal recognition of such tasks as being part of their overall work charge is weak or inexistent. However, the collectivisation process in doctoral education has been taking place in spite or rather because of the informal organisation of research schools. Involved academic staff acted not because of any financial incentive but, first, because they were convinced of the necessity to establish more collective practices in doctoral education and, second, because they could decide themselves what and how to do it. What separates involved academics from non-involved ones is most often positive personal experience within or knowledge about similar doctoral schools in other countries like Germany, Denmark or the United States of America.

7.4 Changes in Academic Work?

In the article it is confirmed that new organisational structures impact academic work, yet, the impact's intensity varies. If one considers the claim of increasing specialisation of academic work made in the introduction, we find that traditional structures represent a certain amount of resilience. In spite of formal structures which supposed to promote functions of “pure researchers”, academics working within research centres – sometimes informally – assume tasks related to both, research and teaching. In other words, the relationship between basic missions is maintained. Daily management and pragmatic solutions serve as superior rationale for organisation and co-ordinating activities compared to central university regulation.

Doctoral schools even contribute to enlarge the content of this nexus at the doctoral level. If supervisors' task has traditionally been limited to advise doctoral students in terms of research, they now teach them in addition to specific doctoral courses. However, not only

specialisation in terms of teaching and research has been weak, de-specialisation in terms of disciplines – interdisciplinarity - did not take place to a strong extent either. Both research centres and doctoral schools have been confronted by difficulties in terms of implementation of interdisciplinarity which can be a signal of conflicting goals. Consequently, they have been forced to reorganise their structures and, more importantly, their concrete activities. Thus, the importance of teaching and research as well as the HEI's disciplinary profile does not seem to have changed fundamentally as a consequence of the creation of new organisational forms. If the pendulum between teaching and research did not clearly swing to one or the other direction, some specialisation effects could nevertheless be noticed in academic work. Academics with high skills in project writing have been employed especially for this task, which underlines the importance of such new responsibilities related to fundraising within the research centre. In addition, doctoral schools did not provoke specialisation in practice among permanent academic staff like an exclusive focus on activities at doctoral level. Academic tasks related to doctoral schools are often carried out on an informal basis in addition to ordinary tasks. The emergence of doctoral school administrators is the only sign of specialisation.

Collectivisation could also be observed in both cases. The policies behind doctoral schools and research centres are defined by collectivisation objectives. In the case of research centres and researchers' practice, collectivisation is mainly associated with fundraising activities. Research centres as a form of collectivisation did not necessarily generate interdisciplinary collective research practice, as disciplinary ties remain strong. Conversely, collectivisation seems to be present in all kinds of changes brought by doctoral schools. Multiple supervision and enlarged scientific exchange illustrate especially well this new collective dimension of academic work.

Finally, one can ask why research centres and doctoral schools do not have stronger effects in terms of specialisation and collectivisation. Recalling the initial claim made in the article about the relationship between formal organisation and academic work, our analysis seems largely to confirm a decoupling process of formal and informal organisational structures. Only

partly influenced by new formal arrangements and financial incentives, the academic profession still decides quite autonomously how far it wants to push specialisation and collectivisation of its work. In line with the argument of decoupling, activities are delegated to professionals and informal practices. Following from this, academics in the case studies still define their activities within the research – teaching mission. Benefits of such a decoupling can be that it enabled the university to address demands from the environment on organisational structure, processes and ideologies concerning doctoral education and research funding. Decoupling seemed to be a way of avoiding conflicts and disputes between the basic level of the university and the central level of the organisation. It seems to have served as a mechanism for mobilizing support from a broad set of external constituents being actors within higher education and research policy, societal actors and actors from private sector. In addition, strong academic norms within the university organisation are likely to persist when there is a distance towards the new environmental norms, leaving comprehensive implementation difficult. Therefore, disciplinary specialisation as basis for organising remains central while even though functional specialisation is more apparent it does not challenge the teaching – research nexus. Moreover, even though collectivisation in terms of research centers is more widespread, collectivisation of research practice takes place only to a limited extent. In contrast, if doctoral education is going through a strong collectivisation process, this is only possible when the observed academics consider it as pertinent. In other words, the claim of universities becoming more similar to ordinary organisations does not hold in the two cases, as the academic profession largely controls academic work serving as a buffer for outside induced change.

7.5 References

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