CHARLES UNIVERSITY IN PRAGUE

FACULTY OF SOCIAL SCIENCES

Institute of International Studies

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NEW TOOLS OF RESEARCH GOVERNANCE:
Cases of research policy implementation in the Czech Republic, Sweden, and the European Union

NOVE NÁSTROJE ŘÍZENÍ VÝZKUMU:
Případové studie implementace výzkumné politiky v České republice, Švédsku a Evropské unii

Doctoral Dissertation

Prague 2015

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Opponent:

To be presented on:

Evaluation:

Bibliographic Information:

YOUNG, Mitchell. *New Tools of Research Governance: Cases of research policy implementation in the Czech Republic, Sweden, and the European Union*. Prague, 2015. 194 pages. Doctoral dissertation (Ph.D.) Charles University in Prague, Faculty of Social Sciences, Institute of International Studies. Department of West European Studies. Supervisor Prof. PhDr. Lenka Rovná, CSc.

Abstract:

Research policy has become increasingly important for policymakers in Europe as it is considered to be a driving force behind the global knowledge-based economy. An array of new tools for the evaluation and funding of research have been implemented both by the European Union and its Member States; particularly distinctive are those that have been developed in the Czech Republic and Sweden. This dissertation, through four cases studies, investigates why these tools have appeared and what effects they have on the practice of research. Using a conceptual framework of public administration ideal-type narratives, the dissertation shows that these new tools can be considered as New Public Management type reforms. Further, the dissertation creates a theoretical model in which institutional theories are operationalized and used to reveal the politics behind the policy tools and the way that they affect individual behavior in the academic environment. The results demonstrate that strong influences are exerted by the rational choice logics embedded in New Public Management tools, which do distort the practice of research, yet these influences are also tempered by other historically and normatively-based logics within the complex system of research in higher education institutions.

Abstrakt:

Výzkumná politika je považována za hnací motor znalostní ekonomiky a jako taková se stává předmětem stále intenzívnějšího zájmu tvůrců evropské legislativy. Evropská unie i jednotlivé členské státy začaly vytvářet a zavádět celou řadu nových nástrojů pro evaluaci a financování výzkumu. Zvláště charakteristické nástroje potom vyvinulo Švédsko a Česká republika. Tato disertační práce prostřednictvím čtyř případových studií zkoumá, proč jsou používány právě dané nástroje hodnocení a financování výzkumu a jaký mají na výzkum dopad. Práce využívá konceptuální rámec ideálních typů pro kategorizaci veřejné správy a jeho prostřednictvím dokazuje, že tyto nové nástroje výzkumných politik mohou být zařazeny mezi reformy typu New Public Management. Tato disertační práce vytváří teoretický model, který operacionalizuje nové institucionální teorie. Tento model také umožňuje odhalení toho, jaká ideologie stojí za nástroji výzkumné politiky a odkrývá způsob, jakým ovlivňuje chování jedinců v akademickém prostředí. Výsledky prokazují, že silný zkreslující vliv na postup výzkumu má mechanismus institucionální teorie racionální volby, který je zakořeněný v nástrojích New Public Management. Tento vliv je nicméně zmírněn historickými a normativními faktory, jež komplexní systém vysokoškolského výzkumu rovněž ovlivňují.

Keywords:

research policy, research evaluation, research funding, policy tools, New Public Management, new institutionalism, European Union, Czech Republic, Sweden

Klíčová slova:

výzkumné politiky, hodnocení výzkumu, financování výzkumu, nástroje politiky, New Public Management, nový institucionalismus, Evropská unie, Česká republika, Švédsko

Declaration:

I hereby declare that this dissertation is my own work and that I have used only the sources and literatures indicated. The submitted material has not been previously used to obtain the same or any other academic degree. I hereby give my permission for this dissertation to be made available in the Charles University library, to be used for study and research purposes in line with the copyright law.

Prague, 23 March 2015,

Mitchell Young

Acknowledgements:

I would like express deep gratitude to my advisor Professor Lenka Rovná for her support, guidance and valuable comments throughout my doctoral studies.

I am indebted to colleagues and friends at Charles University who provided encouragement, helped me get my bearings within the Czech university system, and even at times took on translations. Additionally, I wish to thank those whom I have met at conferences and workshops whose feedback, questions, and discussion have moved my work along in a myriad of ways.

A great many thanks go to the academics and administrators at the university in Sweden where I conducted fieldwork for their candor and insightful self-reflection in discussing the process of research in the academic workplace. I would also like to acknowledge the Charles University Grant Agency [Grant No. 910988] whose funding made those research trips possible.

Finally, I would like to thank my family whose encouragement and love – from near and afar, in person and in memory – buoyed and inspired me through this long process.

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INTRODUCTION

Over the first decade of the 21st century, the politics of knowledge have undergone a fundamental change. Knowledge has become a central element in social and economic policy, particularly with the rise of the concept of the knowledge-based economy. For the European Union (EU), the defining moment in this process is found in the Lisbon strategy which has the objective of making the EU the "most competitive and dynamic knowledge-based economy in the world" (European Council 2000: 2). This short phrase encapsulates the current understanding of what knowledge governance offers society – competitiveness and a chance to be a leader in the globalized world economy. This opportunity has led to an increased focus on knowledge policy and the tools for implementing it, not only in the EU, but also at the national and subnational levels where competition for global positioning is also intense. Though the EU has been steadily escalating its activities, nation states remain the most powerful players, and the universities and research councils at the subnational level also need to be considered as key actors, due to their significantly increased autonomy. The result is a complex multi-level governance arrangement where both vertical and horizontal forces are steering and shaping policy.

The heightened interest of policymakers in research has built up pressures to improve its governance on all three levels. Research is now being framed in economic terms as an investment by the state, and investments demand returns. They demand an answer to the basic question: What has our investment in research bought us as a society? The attempt to answer this question leads research policy into the realm of evaluation – of determining the quality of research being undertaken. Policymakers need evidence to justify their investments and to account for the money spent. Evaluation of research results is thus directly connected with research policy and leads to the overarching research question in this dissertation:

What sorts of tools are being used for evaluation and funding in research policy and what can they tell us about the way in which society is governed?

How does the way in which research is funded and evaluated, steer the research itself?

These questions lead to the central hypothesis that holds together the case studies in this dissertation:

Policy tools that are implemented for evaluating and funding research will change, and in many cases distort, the practice of research.

This leads to two more specific sub-hypotheses:

The recent emergence of quantitative, performance based tools for evaluating and funding research is related to the New Public Management narrative of governance.

These new tools are subject to that narrative's politics, logics, biases and distortions.

The change in knowledge governance described above has coincided with a range of metric-based policy tools designed to steer knowledge production. This dissertation examines those tools in more detail to better understand the governance of the knowledge-based economy and how it steers but also distorts the practice of research. Two national policy tools stand out in Europe as indicative of this trend towards metrification and New Public Management, and those are found in the Czech Republic and Sweden.

The Czech Republic conducted its first study comparing its research system with a number of comparison countries in 1999 (Research and Development Council 1999). From that beginning, the Evaluation Methodology (popularly called the Coffee Grinder) was developed and implemented in 2004. The stated purpose of this tool was to obtain information for governance, i.e. to better understand Czech research's position in the world and in turn to find ways to improve it through more effective governance. By the year 2010, this originally comparative tool had gone through yearly modifications and was given the power to appropriate all of the Czech research funding according to the results of its metrics. At the

last moment, after strong concerns were raised over the potentially destructive effects that such a radical change could have, both the amount of funding which it influenced was reduced to 20% and its direct role in determining the allocation was changed to an indirect supporting role; it was to be used by the Research, Development and Innovation Council to assist in their allocation decisions. Despite this rolling back of its role, the tool remains an active and important part of the research governance system in the Czech Republic.

In the mid 2000's Swedish legislators discussed the implementation of a system that would reallocate half of Sweden's research funding to universities based on metric indicators and an system of peer review panels. This initiative, by the time it passed in the year 2006 as a piece of legislation called 'A boost to Research' (Ministry of Education and Research 2008), had been streamlined by cutting out the proposed peer review panels as well as several of the metric indicators. In its final version, the funding distribution was based on only two indicators (publication outputs and funding received for research project proposals) and was reduced to re-allocating only 10% of the overall research funding going directly to universities.

The following chapters examine more closely the Evaluation Methodology, the Boost to Research and the multi-level context in which they were created and implemented. They investigate: Why these instruments and why now? Are they fit for purpose? For the time being we should note that the Czech Republic and Sweden are unlikely cases for comparison. The historical backgrounds, political traditions, varieties of capitalism, and cultural context of the societies are very different. The levels of investment in research and development as well as the perceived success of each country's researchers and the prestige of its universities is also quite different. However, it is in these two countries that the idea of an entirely quantified system of research evaluation takes root in the middle of the first decade of the 2000s. Although coming from different starting points, a variety of pressures, trends,

institutional models, ideas and actors, led them to similar solutions to the problem of how to efficiently and effectively evaluate research and distribute funding. This dissertation will focus on those metric-based policy instruments, using them as a window into the politics of knowledge governance.

The dissertation is divided into two parts: first, a literature review covering the theoretical background and methodology, and second, a set of four empirical case studies, which apply and test the theoretical conceptions.

The literature review is divided over two chapters. Chapter one covers the governance of university-based research. It begins by examining the concept of governance itself, and then delves more deeply into what is called "interactive governance". This form of governance brings together two key theories that are used throughout the empirical studies, namely, multi-level governance and New Public Management. These two theories are characterized in the interactive governance literature as the vertical and horizontal decentering of state power. The chapter examines both theories in more detail and demonstrates the relevance of interactive governance theory for the study of knowledge governance in Europe.

Chapter two turns its attention to the tools for implementing university-based research policies. It reviews the major developments that implementation studies have undergone since the 1970s and shows how the concerns that had led to a decline in interest in the field can be overcome by more recent neo-institutionalist theories. The chapter builds a theory of policy instruments based on the policy instruments framework developed by Pierre Lascoumes and Patrick Le Gales (2007) and demonstrates how policy instruments can be used to understand implementation in the public policy discourse. It argues that policy instruments embed politics and therefore provide a window for scholars to uncover trends and make sense of policy change even when political actors are not overt about their

intentions. This is done by linking the policy instrument to a model of public management and a rationale that is operationalized using variations of new institutional theory. Particular attention is paid to the operational logic of the policy instrument and whether it corresponds to the logic of the institutionalized individual subject. It is hypothesized that without correspondence, implementation will not occur effectively. In those instances, we can expect to find different strategic responses (Oliver 1991) from the actors, which result in either a reshaping of the policy and/or the academic profession and its practices. Finally the chapter lays out a typology of policy mechanisms for the evaluation and funding of research and concludes by discussing their benefits and drawbacks.

The second part of the dissertation is comprised of four empirical case studies, which make up chapters three to six. Each of the case studies has been previously published as a peer reviewed journal article or book chapter, and each contains its own description of the methodology, techniques of analysis, and sources which were used. However, all four chapters share the use of a case study methodology to investigate the research questions being posed. The case study methodology was chosen as it is most appropriately fits the type of research question being asked, that is questions which seek an answer to why or how a particular phenomena has come about and/or how it fits or contradicts theoretical expectations. Case studies are considered the most appropriate method of inquiry when three conditions are met: one, the research question is in the form of why or how; two, the researcher cannot control the events he is researching; and three, the focus is on a current phenomenon rather than a historical one (Yin 2009). The four studies in this dissertation meet these criteria: one, they investigate ‘how’ steering research policy functions, 'why' particular policy tools have gained traction, and 'how' they affect the activity of research itself; two, the topic is not one which the investigator can control as it is a political process that is both complex and involves multiple levels of governance; and three, it is a current topic.

Small-*n* research is gaining legitimacy, particularly because as Peter Hall (2006: 26) argues: "recent theoretical developments in social science tend to specify a world whose causal structure is too complex to be tested effectively by conventional statistical methods". This means that the use of case studies can be more effective than large-*n* research when a certain type of knowledge is desired and the social conditions frustrate statistical methods. Public management and policymaking are areas of such complexity, which also engage a broad range of theories that often cannot be isolated in a manner that is statistically testable. This corresponds with an important rationale for using case studies: "case studies are especially well suited for taking into account a broader range of theories, because the diverse set of information necessary to test complex theories can very often be collected only for one case or a few cases" (Blatter and Haverland 2012: 7).

Case studies are not a monolithic methodology; Joachim Blatter and Markus Haverland (2012) identify three types of case studies: co-variational, causal-process tracing, and congruence. Each of these different types of case study varies in terms of precisely what sort of questions it attempts to answer and the methods and techniques it uses to go about doing so. The first type, co-variational, is modeled on positivist science and looks at the difference that a particular independent variable has on an outcome. Rather than using quantitative indicators it uses a scoring system that allows qualitative data to be used for that purpose (see King, Keohane and Verba 1994). The second type, causal-process tracing, is focused on understanding what makes a particular outcome possible. It investigates the causal conditions and mechanisms that lead to a particular result (see George and Bennett 2005, Hall 2006). The case on the Czech Evaluation Methodology (chapter five) can be seen as causal-process tracing. Finally, the third type, congruence analysis, compares different theories in an attempt to discover which provides the most insight or explanatory power over an observed

phenomena (see George and Bennett 2005). The cases studies in chapters three, four, and six of this dissertation are of the congruence analysis type.

The congruence analysis type of case study is put into practice by creating expectations that are based on the various theories of interest and are tailored to the selected case; they are tested by whether or not they are observed in the empirical data. In this way the theories are used to create something like ideal types (Doty and Glick 1994, Collier, Laporte, Seawright 2009) with concretized observable features. In the case study on Horizon 2020, the creation of three public management narratives by which to observe the framework programme is an example (chapter four), as is the use of the three variants of institutional theory in the case study on Swedish researchers (chapter six). The study of EU research policy (chapter three), also uses a variation on this type of case study by exploring whether steering is done through institution building or policymaking. It refines this further by looking at three types of tool by which that can be done: informational, financial, and legal.

All of the cases studies are based on a broad set of data in the form of primary source documents and interviews. Interviews were transcribed and analyzed using a basic freeware qualitative data analysis program (WEFT-QDA) that allowed for a variety of attribute, structural, and deductive coding techniques based on the hypotheses developed (Saldana 2013). Each case study describes the data collected and how it was analyzed in more detail.

The chapters in the second part of the dissertation all address the common subject of European research policy and governance from multiple perspectives and levels. Bringing them together are three theoretical links. One, multi-level governance, the theory of which is used to demonstrate that policy in this area cannot be seen from only one level but rather is developed and implemented at all three. Two, governance and public policy, in which the case studies' primary focus is on the tools created to govern and steer research and how those

are affected by neoliberal (New Public Management) type reforms which prioritize quantification, rankings, and benchmarking of outputs over other types of evaluative and distributive systems. Three, neo-institutionalism, which provides a theoretical means for explaining these policy changes and how they affect the way research is undertaken at the university level. This is done by operationalizing the logics of decision-making in the three main variants of neo-institutional theory and then examining how those relate to different governance tools and policy ideas. Using case studies on the European Union, Czech Republic, and Sweden based on primary document analysis and interviews, these four case studies taken together provide an explanation of the shifts in policy approaches to research since the turn of the century.

Chapter three, *Governing research in the EU: steering and institution building* (Young 2012), maps the steering mechanisms which the EU uses in the area of research policy. It does so using a multi-level governance framework to analyze the multiple policies, tools and objectives by which the EU promotes multi-level change in knowledge policies. The chapter asks: what is the EU's role in university-based research policy? With what types of tools and instruments does it act to achieve its policy aims? How does it combine institution building on a supranational level with its objectives on the national and subnational levels? The chapter argues that the EU has a distinct role as a supranational actor, which is unique and cannot be reduced to simply echoing global trends or pushing a policy agenda down to the national or subnational level. Instead it strives to construct a complex and heterogeneous ecosystem, but one with a distinct governance architecture. This architecture, as theorized in chapter one, combines both ideational and organizational elements, and serves as a framework for developing the tools of university-based research policy.

Chapter four, *Horizon 2020 and European governance narratives* (Young 2015a), provides a case study on the EU's Horizon 2020 framework for funding research. The chapter examines

the type of policy ideas and narratives that have shaped this distributive framework and how they affect the construction and resulting geography of the so called Europe of Knowledge. The study orients itself on the Commission's claim that Horizon 2020 represents a break in policy continuity from earlier framework programmes. It argues that in order to evaluate and make sense of that claim, there is a need to recognize that the framework programmes play a discursive and regulatory role even though they are technically just distributive mechanisms. To capture the multiple elements at play, the chapter creates an analytical framework based on three narratives of public management and administration – New Public Management, Network Governance, and Neo-Weberian Bureaucracy. These are treated as ideal types which embody particular elements of governance: the underlying means by which governance operates, the key facilitating mechanisms and steering techniques; understandings of the strengths of the approach; and two more specific aspects relevant to the framework programmes: the distribution mechanisms which each type prefers and an understanding of how quality is maintained.

The chapter employs this framework in the analysis of two cases. The first examines the internal and external factors which could justify the claim for a governance break. The research finds that there is evidence supporting the argument for a break, but not in the same terms as the Commission suggests; rather, the break (better described as a shift) is in the public management narrative which prevails, i.e. a shift towards New Public Management. The second case examines the concept of excellence and how it is used by different actors in the development of the most recent framework programme. By studying contributions to the public consultation process on Horizon 2020, the chapter builds a picture of what excellence means to different actors and how it is used in different discourses. A typology is created by differentiating the concept of excellence along two dimensions: one, its discursive use in regards to either quality or distribution, and two, its character, which can be distinguished as

either threshold or zero-sum. This typology is then examined according to the three ideal-type models of public management narrative. The conclusion is that EU policy is following a particular approach which again is most closely aligned with New Public Management; however, within the Member States there are distinct groupings some of which see excellence in other ways. Pulling together the ideas of both New Public Management and the theory of differentiated integration, the chapter concludes by suggesting that these changes in narrative are likely to lead to a more divided Europe of Knowledge.

Chapter five, *Czech research governance: tracing the Evaluation Methodology* (Young 2014a), is a case study on the Evaluation Methodology, which as described earlier, is a policy instrument that was developed and implemented in the Czech Republic beginning in the year 2004. It sees this tool as both a unique development, but also one that is strongly influenced by both European and global conceptions of knowledge governance. Foremost among those influences is the reform doctrine of New Public Management, which is used as the theoretical basis of the chapter. The chapter discusses this theory in detail before going on to examine how it helps to explain the creation of the Evaluation Methodology and its development over time. In order to understand these changes, the chapter traces the development of this policy tool and then uses these findings to offer some critiques of New Public Management.

The results demonstrate some of the distortions created by New Public Management tools, particularly as a result of their overemphasis on a single policy objective, the unmitigated translation of abstract policy tools from a global template, and the importation of corporate management techniques. The chapter concludes that the unintended consequences arising from the radical implementation of new tools such as this one, can undermine the solutions intended by policymakers.

Chapter six, *Swedish research governance: quasimarkets and researchers* (Young 2015c), provides a complementary case study to the one in chapter five. It also explores national policy tools but turns its attention to the level of the subnational actors, looking at the effects of policy implementation on the research environment in the university and the rationales of the researchers themselves in dealing with the quasimarkets in the Swedish system of research funding and evaluation. Even though the main focus is on the subnational level, the chapter also ties the Swedish system into broader EU proposals for the way research is promoted, funded and evaluated. In this way the Swedish case is used to test the effects that European policy ideas found in the university modernization agenda might have on the academic workplace.

The Swedish system presents a puzzle, which is that while on the one hand it has very high levels of GDP investment in research and also ranks highly on various global and European indexes and scorecards ranks, on the other hand, it has been found to be losing its edge in what is called groundbreaking research (Oquist and Benner 2012). This chapter explores this puzzle by examining researchers' logics of decision-making at a large university in Sweden. The primary sources in this study are a set of interviews which were conducted at a major research university in Sweden with central administrators and researchers in a number of departments. The results of those interviews were analyzed through a conceptual framework made by operationalizing neo-institutional theory, and using it to identify and categorize several logics by which academics act and then relating those to the logics embedded in the quasimarket tools of the Swedish system. The results suggest that, despite the expectations posited by a neoliberal logic of governance, a highly fragmented and competitive system can reach a breaking point at which a conservatism that undermines efforts to foster groundbreaking research will appear.

The dissertation concludes with a overarching summary that draws together the key findings from the four empirical case studies and provides some final thoughts on the direction and future of metric-based tools in the policy area of knowledge governance.

PART I

Literature Review

CHAPTER 1.

GOVERNING UNIVERSITY-BASED RESEARCH

1.1. The theory of interactive governance

The concept of governance is grounded in the observation that national governments no longer appear to have a monopoly in the policy process. Using the term governance rather than government connotates this challenge to traditional government power. Rod Rhodes (1996) describes the "hollowing out" of the state and focuses on the rise of networks. Jon Pierre and Guy Peters (1998) also refer to "governance without government" to describe an increased influence of networks, shift from control to influence, blending of public and private resources, and use of multiple instruments in governing. Multi-level governance theorists Gary Marks and Liesbet Hooghe claim that control has "slipped away" from the central states to supranational and subnational actors (Marks, Hooghe and Blank 1996, Hooghe and Marks 2001); they describe a "reallocation of authority upward, downward, and sideways from central states" (Marks and Hooghe 2003: 233). The use of the concept of governance has become widespread to the point that the Journal of Common Market Studies published a review article on "The 'Governance Turn' in EU Studies" (Kohler-Koch and Rittberger 2006). The growing interest in governance is also part of a shift away from rationalistic interest-based theories of political science, towards ones which concentrate on organizations and institutions (Torfling et al 2012). Precise definitions of governance tend to run into the difficulty of either being too narrow and hence reductionist or too broadly stretched so as to be nearly all encompassing. Jacob Torfling, B. Guy Peters, Jon Pierre and Eva Sørensen, suggest that defining governance as "the process of steering society and the economy through collective action and in accordance with some common objectives" (Torfling et al 2012: 14) is an appropriate middle ground. It is broad enough to leave

governance open to a variety of different institutional forms (i.e. the state, market, networks), but at the same time delimits it by insisting on common objectives, collective action, and the distinction that governance refers to steering rather than rowing. This metaphor for the functional use of authority comes from Osborne and Gaebler's (1992) book *Reinventing Government*, in which the authors argued that governments should be engaged in *steering* (policy creation, leadership, guiding) but not *rowing* (service provision). This also captures the gist of the impulses behind New Public Management reforms and the shift to regulatory capitalism (Levi-Faur 2005, Braithwaite 2000).

While the term interactive governance might seem to just continue in the line of governance studies in which proponents have added adjectives, for example, network governance, multi-level governance, good governance, in fact, interactive governance is something more like a comprehensive framework which brings together many of these different governance variants. The authors define interactive governance as "the complex process through which a plurality of social and political actors with diverging interests interact in order to formulate, promote, and achieve common objectives by means of mobilizing, exchanging, and deploying a range of ideas, rules, and resources" (Torfling et al 2012: 14). There are three keys to understanding this definition: complexity, common objectives, and what the authors call decentering. The first key is that governance it is a complex process, which not only differentiates it from being a simple process, i.e. one having only a few parts whose interactions can be easily understood, but also differentiates it from a complicated process, which may have many parts but ultimately can be fully understood and made predictable. The difference between complexity and complicatedness is well demonstrated in the example of sending a rocket to the moon (complicated) and raising a child (complex) (Glouberman and Zimmerman 2004). The problem of sending a rocket to the moon can be solved but raising a child is not something which can be fully controlled. Complex problems defy predictable

cause and effect relationships. This is because "the whole (the system) is more than the sum of the parts (the individual agents), while, at the same time, developments of the whole stem from the (interaction of the) parts" (Klijn 2008: 301). This paradoxical gap between the whole and its parts distinguishes complexity from theories that focus on drawing linear connections between formal structures and institutions and the outputs those create. The lack of linear dynamics between the parts and the whole means that complex systems "display emergent properties which cannot be traced to the behavior of the individual agents alone" (Klijn 2008: 302). While complex processes can be influenced and steered, they cannot be controlled in a comprehensive and coercive manner. Thus the concept of complexity which comes out of the natural sciences and biology, is relevant in the social sciences, particularly in governance which exhibits the characteristics of a complex system.

Recent research on the development of knowledge governance in the EU makes this clear. The editors of an important collective monograph argue the European Research Area is an "experimental site of mixed modes of governance" which "has witnessed processes of coevolution between intergovernmental, transnational and supranational logics" (Chou and Gornitzka 2014: 22). While neither the editors or chapter authors directly deal with complexity theory, their texts are studded with references to it. The idea of co-evolution is a central concept in complexity theory. As is emergence, which is a ongoing theme throughout the book (Young 2015b). A pair of chapters which trace the development of the European Institute of Technology and the European Research Council are an excellence case in point. These two institutions were developed at about the same time and with very similar actor constellations, and yet the processes and outcomes are unique (Gornitzka and Metz 2014a, Gornitzka and Metz 2014b). In other words, the complexity of the policy process prevents us from being able to predict the outcome, even in two similar cases of institution building.

The second key to interactive governance is the existence of common objectives, that is to say that despite the divergent interests, behaviors and motivations of actors, there is still a drive to produce public value. In the area of knowledge governance within the EU, the Lisbon strategy has enshrined 'competitiveness' as the overarching objective. The importance of the Lisbon strategy should not be underestimated:

> One can think of the Single Market and Lisbon as two moments in which the EU tried to define its own distinctive approach to competitiveness without, however, settling the ambiguities and differences implicit in the persistence of different models of capitalism. Whereas the Single European Market focused on economies of scale and unleashing market forces across national borders, the Lisbon Strategy has paid more attention to institutional framework conditions (Borrás and Radaelli 2011: 474).

To take the argument even one step further, the intellectual mobilization which the Lisbon strategy pursued, effected the understanding of the EU's purpose: "In a sense, the competitiveness focus of the agenda has been conceptualized as the *raison d'être* of the EU" (Borrás and Radaelli 2011: 466).

The Lisbon strategy has been understudied, perhaps in part due to a lack of categories in which to put it. Susan Borrás and Claudio Radaelli (2011: 464) analyze it as a governance architecture; they define governance architectures as "strategic and long-term political initiatives of international organizations on cross-cutting policy issues locked in commitments about targets and processes". A governance architecture, if considered on a scale of abstractness, falls somewhere between multi-level governance, which deals with generic problems of a polity, and a policy program, which deals with a single policy area. It has three unique features: "it addresses complex problems in a strategic, holistic long-term perspective; it sets substantive output-oriented goals; and it is implemented through combinations of old and new organizational structures within the international organization in question" (Borrás and Radaelli 2011: 468). The study of governance architectures thus

engages both ideational and organizational elements which include institutions and policy instruments.

Competitiveness, the collective goal of the Lisbon strategy, has famously been called a "dangerous obsession" (Krugman 1994) as it conflates very different things: countries and businesses. Krugman argues that nations do not compete for market share in the zero-sum manner that companies do, and hence characterizing their competition in a similar way leads to poor policymaking. Colin Hay (2007) by studying the EU's approach to both the Doha round of World Trade Organization negotiations and the Services Directive, argues that there is another danger in the way the EU approaches competitiveness, that is, it treats competitiveness as "cost competition" which is based on an economic model that best fits cheap consumer goods subject to high price demand elasticity. He also argues that this is not fit for the purpose of national policymaking and that it leads to unintended consequences as dangerous as the ones Krugman identifies. Nevertheless competitiveness has remained a powerful concept in policymaking, and its staying power in the EU is shown by Vivian Schmidt and Mark Thatcher (2014) in their study on the "resilience" of neoliberal ideas in Europe. A similar conflation of countries and businesses is also at the heart of the New Public Management reforms that will be examined more closely later in this chapter.

Finally, the third key to understanding interactive governance is that the process is decentered, that is it lacks a "privileged center" in favor of competing actors and arenas which all engage with and effect the outcomes (Torfling et al 2012: 15). Decentering occurs in two dimensions: vertical and horizontal. Vertical decentering, here referred to as blurring, reflects the loss of the national government to fully control the policy process: "it blurs distinctions that traditional approaches in intergovernmental relationships consider important, like jurisdiction, subordination, and control. (Torfling et al 2012: 93). Horizontal decentering reflects the "distinction between policymakers and policy targets" (Torfling et al 2012: 100),

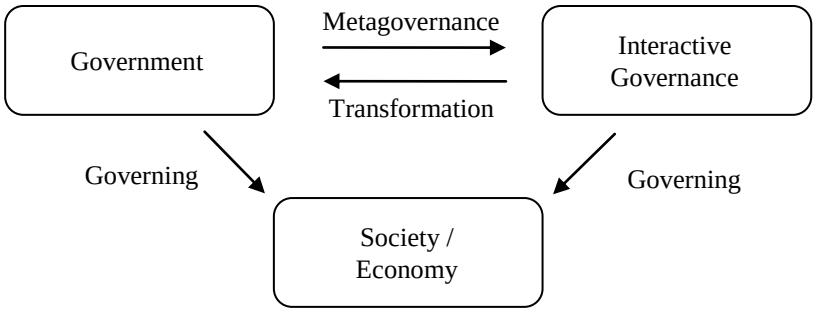
which can no longer be depicted in simple linear terms of implementation, politics and administration, nor in terms of public and private. According to Torfling et al. two theories capture these sorts of decentering: The theory of multi-level governance captures the vertical dimension and the theory of New Public Management captures the horizontal one. In the following sections we will examine both theories in more detail.

An important caveat is due here. That is, government itself should not be dismissed as irrelevant nor diminished as something that is disappearing. Government retains importance; it is not supplanted but supplemented by interactive governance. In the literature on multi-level governance, there are a number of hypotheses relating to what advantage governments might gain from allowing power to move to other levels (Hooge and Marks 2001). Stephan George (2004: 113-114) highlights three: it could increase their leverage in multinational negotiations, tie the hands of their successors, and/or allow for unpopular decisions to be made without their having to take responsibility for them. The existence of these possibilities demonstrate that theoretically there could be a rational argument made for governments giving up power, but alternatively, it can be argued on the same basis that governments are not actually giving up power, but only adjusting the form of power that they are using. In the interactive governance literature, government and interactive governance co-exist and independently exert governing forces on society and the economy (see figure 1.1). They are connected by the concept of metagovernance, which at its most basic can be thought of as the "governance of governance"; through metagovernance, governments play an important role in shaping, facilitating and managing interactive governance (Jessop 2004). Governments can do this in a direct way, for example by including government representatives in governance networks, or indirect way, by shaping conditions, institutional designs, and goals (Torfling et al. 2012). To use a different metaphor, metagovernance works by structuring the rules of the game (or the environment of the action) rather than engaging it as a player. Metagovernance

in the EU can be seen as working through the previously discussed governance architectures, both the Lisbon strategy and also the ERA and EHEA, as well as the Open Method of Coordination (OMC), which is an intergovernmental tool for coordinating national actions in areas that the EU does not have jurisdiction to regulate directly or through directives. The OMC is a soft power tool that works through negotiated agreement with the Member States on policy goals; the progress towards those is measured, benchmarked, and regularly monitored and made public.

The model from Torfling et al. shows both government and interactive governance having a role in governing society and the economy. It depicts a two way relationship in which government influences interactive governance through metagovernance, and in which interactive governance affects government through the reverse process of transformation.

Figure 1.1. Linkages among forms of governance



(from Torfling et al. 2012: 5)

A question worth asking is whether knowledge governance in the EU can be seen as an example of interactive governance? Before we address that question, the following sections will engage more directly the two primary dimensions of decentering in interactive governance, the vertical, through the theory of multi-level governance and the horizontal through New Public Management.

1.2. Multi-level governance as vertical decentering

Multi-level governance is a useful classificatory theory; it allows us to more clearly view and structure our understanding of the vertical dimension of governance, particularly within the European Union, the structural policy of which was the initial inspiration for the theory's development in the early 1990s (Marks 1992). Multi-level governance depends on the fragmentation of the unitary power of the nation state as described in the previous section. As stated by the initial proponents of the theory: "Centralized authority has given way to new forms of governing. Formal authority has been dispersed from central states both up to supranational institutions and down to regional and local governments" (Hooghe and Marks 2004: 15). This dispersion of power leads to a reconceptualization of the polity and its governance mechanisms both on and between three levels: supranational, national and subnational. In other words, "when one asserts that the state no longer monopolizes European-level policy making or the aggregation of domestic interests, a very different polity comes into focus" (Hooghe and Marks 2001: 3). The governance of this type of polity is conceptualized as multi-level governance.

This does not mean that the national level is unimportant. In fact, the theory of multi-level governance does a better job of conceptualizing of state power than many recent alternatives (i.e. network governance). Multi-level governance "stubbornly reminds us that territorial jurisdictions are not about to disappear even though they are undergoing powerful transformations and even though non-territorial jurisdictions are becoming ever more relevant" (Piattoni 2010: 10-11). As stated by Liesbet Hooghe and Gary Marks (2001: 4): "National governments are an integral and powerful part of the EU, but they no longer provide the sole interface between supranational and subnational arenas, and they share, rather than monopolize, control over many activities that take place in their respective territories".

The importance of multi-level governance theory is not so much about the existence of the three levels, which in themselves could be said to describe multi-level government, not governance. Rather the theory introduces the idea that governance dynamics occur between all three of these levels resulting in a complex system that defies linear explanation. That is to say that we cannot explain governance within the European Union with either a simple downward or upward model in which either the EU exerts its power downwards on the Member States or the Member States exert their power upwards on the EU (see Vink and Graziano 2007). Multi-level governance allows us to move beyond the traditional debate between intergovernmentalism (e.g. Hoffman 1966, Moravic 1993), a state-centric understanding of integration which privileges the nation state, and neo-functionalism (e.g. Haas 1958, Sandholtz and Stone Sweet 1998), which emphasizes the supranational structures as sovereign (see Wiener and Diez 2009 for a more detailed account of this debate). Though some authors at least partially dispute this by arguing that multi-level governance follows the line of neo-functionalism and therefore has become the primary counter-theory to intergovernmentalism in the traditional binary mentioned above (George 2004). However, there is also another way in which the theory of multi-level governance moves beyond traditional theorizing and that is by emphasizing the importance of the third, subnational, level as essential for understanding how the polity functions (Bache and Flinders 2004). The critical observation here is that the subnational level is not constrained by its position in a hierarchy of nested levels, but rather, can directly establish interactions with, operate on, and influence the supranational level. This ability of the subnational level to bypass the national level either directly or through networks gives multi-level governance a unique perspective.

If the subnational is in this way the key distinguishing feature of multi-level governance, it is also the most challenging part to describe. It is at this level that the theory's embrace of "the relationship between territorial and functional governance" (Bache 2012: 634) is most

apparent. Attempts to understand this relationship lead to a distinction between two types of multi-level governance, which are referred to in the literature as type-I and type-II (Hooghe and Marks 2004, 2010, Marks and Hooghe 2003). Type-I is what might be seen as a traditional federalist system, which is based on clearly delineated, non-overlapping territorial jurisdictions on multiple levels in which the highest levels neatly and comprehensively incorporate the lower ones, e.g. national government, state government, and local or regional government. These jurisdictions are general, that is, they deal with all policy issues and institutions within their defined borders. This type of multi-level governance provides a theory by which to understand aspects of the EU that deal directly with the regions, for example, cohesion policy. However, there are other areas of EU policy which do not fit nicely into such a clearly delineated model; knowledge policy is one such area. The actors in knowledge policy on the subnational level are not the regions or regional governments, although they do have some role, but rather the universities, research institutions, research councils and funding organizations, and networks of such actors including businesses which are also engaged in research and development activities. This messier kind of arrangement can be characterized as type-II multi-level governance. In order to explain this type, Hooghe and Marks (2004) use a quote from Ostrom and Ostrom (1999):

> In Type II multi-level governance, multiple, independent jurisdictions fulfill distinct functions. '[E]ach citizen ... is served not by "the" government, but by a variety of different public service industries .... We can then think of the public sector as being composed of many public service industries including the police industry, the fire protection industry, the welfare industry, the health services industry, the transportation industry, and so on' (Ostrom and Ostrom 1999: 88–9) (Hooghe and Marks 2004: 20).

The idea of "public service industries" described above dovetails nicely with the ideas behind New Public Management reforms, which will be examined more thoroughly in the following section. To briefly introduce the connection, however, New Public Management is based on the idea that public management should operate more like business management. By defining

type-II multi-level governance using the language of "industries" coupled with the further claim that "type II jurisdictions approximate markets" (Hooghe and Marks 2004: 28), the concept of multi-level governance is clearly made compatible within the economic logic of New Public Management. Knowledge policy, as will be discussed later in this chapter, fits with this conceptualization as it often has its jurisdiction characterized using the language of the market.

By looking more deeply into the concept of type-II multi-level governance, we can see how it corresponds with interactive governance. Type-II jurisdictions "emphasize problem solving" by asking: "How can citizens obtain public goods that they are unable to create individually?" (Hooghe and Marks 2004: 29). Public goods might represent the sort of common objectives that interactive governance seeks to pursue. Public goods are ones which "would not be produced by the market or by rational citizens acting independently" (Schakel, Marks and Hooghe 2014: 5). This has long been one of the justifications given for government funding of basic research. So, while multi-level governance engages with market-based economic models in some ways, in others it attempts to move beyond them. A resolution to this tension can be found in the hypothesis that multi-level governance will be structured according to externalities which reflect the scale of the problem being addressed. "Most policy areas that have been shifted to the European level follow a functional logic rooted in the territorial scope of their externalities and scale economies ... Subsequent European integration in environment, research, and immigration also has a functional logic" (Schakel, Marks and Hooghe 2014: 6). In other words, because the externalities of research cannot be contained at either a subnational or national level, governance moves to address them on the supranational level.

A final characteristic for distinguishing between type-II and type-I multi-level governance is that its structure features a "flexible design" as opposed to a "system-wide architecture"

(Hooghe and Marks 2004: 17). In type-I, the system-wide architecture is a federalist one organized using three levels of government which are nested but non-overlapping and employing the *trias politicas* structure of a legislature, executive/administration, and judiciary. The design of type-II is flexible in the sense that it can vary by industry or policy problem, but it too can develop an architecture, which as discussed is happening in the area of knowledge through the governance architecture of the Lisbon strategy. Governance architectures can be understood in this way as the type-II corollary to the system wide architectures of type-I.

1.3. New Public Management as Horizontal Decentering

New Public Management (NPM) provides a concept by which to make sense of a set of governance reforms which began to appear in the 1980s starting in New Zealand and which then spread to other Anglo-Saxon countries before being adopted more broadly across Europe and internationally. New Public Management is a somewhat slippery concept and there is ongoing debate over exactly what it is: a theory, policy, paradigm, doctrine, set of tools, or reform program (Dunleavy et al. 2006). These possibilities are analyzed more fully in the empirical chapters, particularly chapters four and five. However, there has recently been a softening of the all-or-nothing character of some of the debates. Rather than trying to prove or disprove the idea that New Public Management is an overarching blueprint for policy, which has been shown to be false in most European countries (Paradeise 2009, Christopher Pollitt et al. 2007), New Public Management reforms can be taken in bits and pieces. Countries can be shown to have incorporated fragmented elements, ideas and tools from the concept and these are found throughout Europe (Pollitt et al 2007).

New Public Management is based on one central idea: that the government should operate more like a business. The reforms that grow out of that idea are numerous; however, they

derive from one of two interrelated but partially contradictory elements of business: they relate to either markets or management. Christopher Hood (1991) in his seminal article on NPM calls these the "freedom to compete" and the "freedom to manage". The first strand refers to the need for market based solutions to both economic as well as social problems. This is precisely what is prescribed by neoliberalism: "The ideology [of neoliberalism] is that all, or virtually all, economic and social problems have a market solution, or a solution in which market processes will figure prominently" (Howard and King 2008: 1). Neoliberal type regulation promotes and manages markets rather than containing them. Here it is important to draw a distinction between neoliberalism and classical liberalism:

> Classical liberalism is the more comprehensive set of ideas. At its core are principles of individualism, voluntary contracting, small government and the rule of law, with an emphasis on the importance of civil rights rather than democratic or social rights. In contrast, neoliberalism is a considerably more specialised set of ideas, proclaiming the efficiency of markets over other mechanisms of coordination and disciplining (Howard and King 2008: 2).

New Public Management builds on these neoliberal ideas by introducing markets or market mechanisms to a wide variety of public management problems. Some researchers argue that this is an example of a "solution looking for a problem", that is to say that even where the public administration is working effectively, there is an attempt to reframe the issue and construct a problem that a market solution can resolve. In those areas of public administration which are not directly associated with broader economic markets, quasimarkets can be created to replicate the mechanism of the market, i.e. competition for limited resources. In the EU, neoliberal ideas are influential and resilient (Schmidt and Thatcher 2014). They are also not confined by a traditional left-right ideological cleavage, and "this is one reason why neoliberalism is important: it describes an unusual political situation in which there has been a convergence of centre-left and centre-right political parties to a new principle of governance" (Howard and King 2008: 6).

The second strand in NPM is the "freedom to manage". This means that units of the public administration should have the autonomy to behave like business units. From this follow two major conditions: The first is that the units are given the leeway to behave strategically and make decisions about how to use their resources to position themselves within a market niche, and the second is that they should be run according to good management practices. Here NPM draws on management theory to identify how the public sector should be controlled. While there are many tools and techniques for doing this, the most common include: performance-based mechanisms for pay, competitive tendering, league tables, and substituting contractual relationships for hierarchical ones (Pollitt and Bouckaert 2011).

Thomas Diefenbach (2011) attempts to consolidate the broad ranging research on New Public Management by identifying the way it affects five areas: business environment and strategic objectives; organizational structures and processes; performance management and measurement systems; management and managers; employees and corporate culture. He takes a normative approach in defining New Public Management: "NPM is a set of assumptions and value statements about how public sector organizations should be designed, organized, managed and how, in a quasi-business manner, they should function" (Diefenbach 2011: 893). This is similar to Hood and Jacksons' (1994) original framing of New Public Management as a doctrine, which "is a set of ideas that is halfway between theory, a backward looking attempt to explain a set of observations that aims towards truth or understanding, and policy, a forward looking statement of intention which guides action" (Dunsire 1973, quoted in Hood and Jackson 1994: 467). Both share the forward-looking normative conception of NPM as a theory that addresses what should be.

New Public Management's normative impulse is to shift strategic objectives towards ones which encompass efficiency, productivity, effectiveness and cost-reduction (Diefenbach 2011: 895). Competition is the driving force behind all of these, and it can be fostered by

creating policy solutions in which decentralized and streamlined organizational units compete in a market or market-like setting. The strategic autonomy of organizational units is coupled with a mechanism of control that takes the form of performance based management and measurement systems and is spoken about in terms of accountability. It leads to extensive monitoring systems, and while monitoring is not new, the "explosion" of auditing instruments (Power 1994), as well as the rapid increase in scoreboards, rankings, benchmarking, best-practices, and a range of other assessment systems that is extreme enough to be considered a significant difference when compared to in earlier periods.

Performance management and measurement systems can be examined from a political and technical perspective (Diefenbach 2011). New Public Management tells us about the political, but the technical dimension is also important as it addresses which elements are measured in which way as well as the psychological effect that these have on people working with and under the system. The technical dimension, according to Diefenbach, raises three general issues: one, the methodology used, which in NPM systems tends to prioritize orthodox measures (efficiency, productivity, costs) that correspond to a narrow understanding of performance. The favored methodologies are ones which use quantitative linear models and simply disregard non-quantifiable effects and results. Two, the data used, which tends to be what is most easily measurable and readily available. This creates a reliance on proxy indicators, which may not always be the most appropriate but are sometimes the only possibility when an objective is not directly measureable. Three, the behavioral adaptations, which once the system and methodology are known, allow individuals to adapt and maximize their results. On the one hand, behavioral change can be seen as part the objective of these systems (Hoggett 1996:20), but the new behaviors may actually be counterproductive if they encourage performance to the proxy rather than the overall objective: "many individuals and groups have become highly adept at impression management whilst others have become

equally skilled in the art of performing to target, even though this may run counter to the need to do the right job" (Hoggett 1996: 24). The concept of performing to target is related to the problem of gaming the system which is of great concern to policymakers in the Czech Republic regarding the Evaluation Methodology.

This surge in metric-based evaluation systems is part of what Power (1994, 1997, 2005) refers to as the audit culture, which he argues is an outcome of New Public Management. The audit culture is one in which everything becomes auditable. This does not mean that everything will always be audited. The key to understanding the concept behind the audit culture is that individuals and organizations make themselves auditable. The burden is primarily on the auditees not the auditors. It bottom-driven through self-enrollment and self-control. The systems of research performance evaluation are an example of an audit-type system; they create a transparent way for academics to demonstrate their performance.

New Public Management in this way simultaneously creates control and autonomy. On the one hand, it requires units which are relatively free to make strategic decisions, but on the other, it has an idea of what good decisions look like and steers the apparently independent units towards those using a variety of instruments that are rooted in business and market-based models, the quintessential one being the quasimarket: "Quasimarkets are a child of NPM and the implicit idea that it is possible to reap the supposed efficiency gains of private markets without losing the equity gain associated with traditional forms of public steering and funding" (Torfling et al: 15). In the next chapter, the instruments themselves will be examined in more detail, but for now we can link our two major theories together through the quasimarket form of governance. Quasimarkets when taken independently are a form of interactive governance, but at the same time, they are an example of how governments can shape outcomes through metagovernance techniques.

1.4. University-based research policy as interactive governance

Having now examined the component theories more closely, in this section we return to the question of whether knowledge governance in a European context can be considered to be interactive governance. We being by looking at the relationship between knowledge governance and multi-level governance. In her widely referred to book on Multi-level Governance, Simona Piattoni (2010) uses higher education as a least-likely case study. Higher education maintains an important role in nation building (Gellener 1983), and countries "resist the idea of giving up training their 'national champions' at home and then allowing them to compete in the international arena for scientific and technological excellence. Knowledge is a source of economic and political power that no national authority is willing to relinquish" (Piattoni 2010: 151). On the other hand, the European Member States are committed to the construction of a common market which is increasingly based on the concept of a knowledge-based economy. So it is not only the Member States commitments, but also the nature of knowledge which "knows no boundaries... [and] despite the effort of national states to nationalize knowledge and excellence, intellectuals often display marked cosmopolitan attitudes and identify themselves more with their own brand of science than with their nationality" (Piattoni 2010: 151). This precisely supports the hypothesis that type-II jurisdictions are determined by the scope of externalities (Schakel, Marks and Hooghe 2014). Knowledge is global and yet countries try, for the purpose of competitiveness, to capture its value nationally. This is a fundamental paradox, which twists as well the typical understanding of an externality. The traditional view of externalities comes from something that cannot be contained within particular jurisdictional borders and which is therefore treated as a commons, for example, air pollution. Since the air has no borders, companies use it freely to release pollution. The concept of externalities, however, recognizes that there are costs associated with this pollution; those costs are called externalities, and they

can be monetized, factored into the overall costs of production, and used to regulate behavior through incentives and penalties. Knowledge on the other hand is something desired: not negative but positive. Like pollution it naturally moves beyond borders, but in this case the challenge is to capture its value before it disperses globally. The basic tools for this are those of intellectual property, copyright and patents. However, the more that the generation of knowledge itself becomes global, through multi-national research teams and big science infrastructures that are funded by multiple governments, these intellectual property issues become more challenging.

Piattoni (2010: 173) concludes that higher education policy "is increasingly displaying clear MLG traits":

> These are most clearly of a Type II... In the name of scientific, financial, and institutional autonomy, higher education institutions are lobbying the European Union, joining forces with similar institutions across national borders, and are forging tighter links with their local authorities and societies" (Piattoni 2010: 173).

However, the case study by Piattoni focuses on higher education policy and her references in it are to the Bologna process and the construction of the European Higher Education Area (EHEA), one that deals with the mobility of students and academics, harmonization and transparency of degrees, and the creation of a European university (or system of universities). She does not address directly the area of research policy, which while it intersects with higher education policy in a significant number of areas, also has a separate and independent set of concerns. The EU is working to build a European Research Area (ERA) along side of the EHEA. Both of these are part of the knowledge policies of the EU which intersect under the Lisbon strategy and its follow-up Europe 2020 strategy. The remainder of this section turns its attention to the research policy developments.

The creation of a European Research Area has in some way been evolving since nearly the creation of the EU itself (Chou 2014, Banchoff 2002). Energy research was included in the

1951 Treaty of Paris, and then in the European Atomic Energy Community Treaty, which Jean Monet considered "the engine of a federal Europe" (Banchoff 2002: 7). In the 1970s came the first attempts to create a common R&D policy, which resulted in voluntary cooperation of a more intergovernmental type (Chou 2014, Guzetti 1995, Corbett 2003). In 1984 the first framework programme for European research funding was established; it and subsequent framework programmes have dominated the research efforts of the EU since. Tomas Banchoff (2002) argues in his broadly cited article that the strength of the institutionalized framework programmes actually hindered other attempts at building a common policy. Hsuan Chou (2014: 39) challenges this accepted wisdom in demonstrating how instead, the framework programmes "paved the way for the ERA to become accepted at the start of the 2000s".

The ERA has evolved significantly since its inception in the year 2000, when Research Commissioner Busquin launched the ERA with the communication *Towards a European Research Area*. That communication focused on the gap between Europe and both the United States and Japan in terms of their research achievements. It argued that without a coordinated policy, Europe might not make a successful transition to the knowledge-based economy. The ERA became a central element in the Lisbon strategy when it was also adopted that year; however, by the middle of the decade efforts towards building the ERA had stalled. Member States had consistently failed (with only several exceptions) to meet the targeted investment in research of 3% of GDP that was a headline target in the strategy. This led to a re-launch of the Lisbon strategy in 2007 and also a reconsideration of tools, purposes and mechanisms behind the ERA through a new green paper (European Commission 2007). The ERA followed suit and was also re-launched under the terms of the "Ljubljana Process" (Council Competitiveness 2008), which re-framed the ERA in terms of a partnership between the Member States and the Commission. This second stage of ERA development still had only

two governance levels as active participants. While progress was made towards the ERA in this re-launch phase, still it had not met its objectives when the Lisbon strategy reached its conclusion in 2010. The subsequent Europe 2020 strategy essentially just extended most of objectives giving them a new completion target date of 2020. The third phase of ERA development begins in 2012, when the implementation agenda is again reset and reframed in terms of a "reinforced ERA partnership - deeper, wider and more efficient than to date - between Member States, the Commission and research stakeholder organisations" (European Commission 2012: 6). In this third phase, a multi-level governance approach is engaged, and even though the Commission still at times refers to the "primary ERA partnership" (European Commission 2012: 6) of the EU and Member States, the overall development can now be characterized as a type-II multi-level governance arrangement consisting of a broad array of stakeholders at the subnational level within a market-delimited jurisdiction.

The ERA is conceived of using the language of the market; it is to supposed to become the "fifth freedom" of the internal market, which is arguably the most successful EU project to date (Chou 2014). The ERA should be an area "in which researchers, scientific knowledge and technology circulate freely" which will serve the purpose of "encouraging it to become more competitive, including in its industry, while promoting all the research activities deemed necessary" (European Union 2010). In the reinforced partnership communication of 2012, this market metaphor is strengthened with the claim made in the very first sentence that: "Knowledge is the currency of the new economy" (European Commission 2012: 1). And while the Commission continues to maintain a commitment to increasing national funding levels to 3% of GPD, the focus of discussion shifts from purely input-oriented concerns to a discussion of how that money is used: "to maximise the return on this investment, Europe must increase the efficiency, effectiveness and excellence of its public research system" (European Commission 2012: 1). Simply getting more money into the

system is no longer seen as a sufficient objective. Overall, knowledge policy is becoming ever more deeply entwined with markets and the logic of markets (i.e. the talk of 'return on investment' rather than simply results of funding). This is what we would expect to find in a neoliberal type policy, in which markets are depicted as the solution to whatever governance problem is being addressed.

The 2012 document calls for the completion of the ERA by 2014, and it specifies five priorities by which that is to be done: more effective national research systems, optimal transnational cooperation and competition, an open labour market for researchers, gender equality and gender mainstreaming in research, and optimal circulation, access to and transfer of scientific knowledge including via digital ERA. The research in this dissertation focuses on the first area, 'more effective national research systems'. The Commission lumps two main objectives in this priority area, first that funding be allocated on a competitive basis through a system of international peer review. This should result in researchers' performance being internationally competitive. And second, that the quality of research performing organizations be assessed in such a way that will lead to organizational changes. This should result in universities being changed to correspond with the modernization agenda, a prescriptive policy recommendation the details of which can be found in a series of Commission communications (European Commission 2006, 2011g).

The current discourse and approach to building the European Research Area fits an interactive governance model: It requires vertical decentering in that it calls for a multi-level partnership for addressing the challenges of knowledge policy as well as horizontal decentering by framing the solution as a market-like one, that is, the enactment of a fifth freedom in the single market.

1.5. Conclusion

This chapter has demonstrated the usefulness of the theory of interactive governance in the study of knowledge policies within the European context. By bringing together the theories of multi-level governance and New Public Management, it provides a strong theoretical framework on which the next chapter will develop its theory of instrumentation. Each of the subsequent chapters in the empirical section will build on this theoretical framework. While state governments still play an important role in setting research policy and funding, the autonomy of research performing organizations from below and the supranational interest of the EU from above, means that explanations for understanding the inception of quantitative instruments like the Evaluation Methodology in the Czech Republic and the Boost to Research policy in Sweden must account for both vertical and horizontal decentering.

CHAPTER 2.

TOOLS FOR IMPLEMENTING UNIVERSITY-BASED RESEARCH POLICIES

2.1. An updated theory of implementation

The four empirical chapters that follow this one address the policy process in the tradition of implementation studies, that is studies which explore the relationship between the intention of policymakers and what actually happens when the policy is enacted. However, what is meant by implementation has changed significantly since the 1970s when, before falling out of favor, it was a popular area of study. Until the 1980s, studies of the policy process were dominated by a stages heuristic. The stages heuristic, later termed the "textbook approach" (Nakamura 1987), broke the policy process down into a series of sequential stages that were cumulative and differentiated by function (see Anderson 1975). While different researchers introduced slight variations, broadly speaking the stages remained consistent and were: agenda-setting, policy formation, decision making, implementation, and evaluation. This model of the policy process is flawed for a number of reasons, among them being: the theory provides no explanatory mechanism for connecting the stages; the sequence of stages is not supported by empirical evidence; and the overall concept is biased towards a legalistic, top-down understanding of government and a rationalistic understanding of organizations (Sabatier 2007, Gornitzka, Svein and Stensaker 2005). While theorizing about the policy process has moved beyond the stages heuristic to a model that uses a more complete, integrated and iterative process of policy formation, work within some of the specific stages did provide valuable insights for current research.

The classic implementation theory which sought to understand the gap between desired and actual policy outcomes was written by Jeffrey Pressman and Aaron Wildawsky (1973). They

used a top-down approach that focused on the problems and blockages that prevented policymakers' desires from becoming reality. This approach, by the late 1970s and early 1980, had run into the difficulty of non-linearity: policymakers cannot simply enforce their will on those in the lower levels, particularly the 'street level' bureaucrats, who struggle to make order and routines out of what are often conflicting directions coming from policymakers. This space for interpretation at the street level is a result of policy being created in a manner that capitalizes on ambiguity (Sabatier and Cerych 1999); further, "most legislation is written in the form of enabling laws rather than in terms of 'tamper-proof legal instruments,' with the expectation that a certain amount of discretion will be exercised as the framework for a program is fleshed out through implementation" (Torfling et al: 75). Herein lies a paradox between policy formation and implementation. Openness is an advantage for policy creation in that policymakers needing to build support from actors with various interests may leave some ambiguity for different interpretations and in that way allow actors to read into a policy what they want to. However, that openness in the way in which laws are written, is what creates the problem that implementation studies address. Taking this one step further, because policymakers allow discretion in the way that they write and construct legislation, implementation becomes part of the policy creation process. This can also be conceptualized in the reverse direction, that because street level bureaucrats have space to shape the final outcomes of a policy, the implementation stage is also part of the creation stage. Thus, while implementation may have been conceptualized in earlier studies as a "technical procedure" (Gornitzka and Stensaker 2006: 43), it was in fact as political as any other part of the process.

The failure of the top-down approaches to explain implementation, led to the development of bottom-up theories (Lipsky 1980), which while importantly showing the power of the street level bureaucrats, in reality just flipped the linear logic on its head. The concept of "backward

mapping" (Elmore 1979), attempted to bring the top-down and bottom-up together by suggesting that policymakers should examine what is feasible to implement on the 'street level' and then design policy around that. A major problem with this approach is that it conflates empirical with normative considerations: "the logic of implementation [in backward mapping] has been extended to say that policy formulation should be oriented around implementation; we should do what we know how to implement well" (Linder and Peters 1987: 459). This logic, as we will see in the upcoming chapters, can be applied in the current policy environment to the instruments which are based on metrics and indicators. The slight twist is that in the context of metrics, the phrase becomes *we should measure what we know how to measure well* (see Lindsey 1988). In other words, what gets measured is not necessarily what we would want to measure, but instead, what we can measure or in some instances what is already being measured.

The bottom-up versus top-down debate which dominated implementation studies also led to their falling out of favor as there is unlikely to be a definitive answer supporting one side or the other. Despite having reached this sort of dead end in the 1980 with the bottom-up/top-down debate, there remains a practical need for answers to the basic research question behind implementation studies: how can the intentions of policymakers be made real? This led in the 2000s to a re-emergence of interest in policy implementation (de Leon and de Leon 2002). Lawrence O'Toole (2000: 266) helped to revive implementation studies, and his definition of the concept clearly shows why it is still relevant: "Policy implementation is what develops between the establishment of an apparent intention on the part of government to do something, or to stop doing something, and the ultimate impact in the world of action... Implementation research concerns the development of systematic knowledge regarding what emerges, or is induced, as actors deal with a policy problem". While there is a need to move beyond the repetitive demonstration of implementation failure for its own sake, studies that

Linder and Peters (1987) refer to as the "horrors of war", providing an understanding of that failure is still important. Implementation research is thus challenged to do more than simply show that a government intention has not resulted in the expected outcome, as we can already predict that the policy process will likely produce distortions; rather, it needs to show how and why that failure came about so that generalizable knowledge claims can be created. This is a task well suited to qualitative case study research (Yin 2009) of the sort undertaken in this dissertation.

Alternatively, policy implementation can be studied through cases that have been successful. However, herein lies a danger of conservatism coming from too quickly constructing ideal types based on the success of policy in one place and then believing it can be effectively applied in others: "If observations of the state of the world at one time and in one place, or reconstructed logics of social dynamics, become entrenched as normative standards of performance, then a chilling conservatism can arise within our social theories and our policy advice" (Linder and Peters 1987: 472). Translation of policy is fraught with difficulties that come from the political, social and economic context, as we explore in the case of the Czech Evaluation Methodology in chapter four.

The theoretical tools of social science have developed considerably over the past 30 years since the so called dead end of implementation studies in the 1980s. Leonard O'Toole (2000) suggest that by introducing neo-institutional, governance and network theories, new life can be breathed into the study of implementation. This means that rather than attempting to determine which direction the linear process moves, the studies should address the "complexities of the changed relationship between policy makers and policy objects" (Gornitzka et al 2006: 12). The revival of implementation begins with the recognition that the policy process is complex. The factors which makes it so are grouped by Sabatier (2007) into five categories: one, the hundreds of actors who are involved and who hold different values,

interests, perceptions and preferences; two, the long timeframe in which policy develops (that can stretch to decades); three, the multiplicity of policy solutions and tools which are in simultaneous use and/or discussion at different levels of government; four, the policy debates which involve technical disputes over aspects of the problem, solution, implementation and in that way cast doubt; and five, the temptation and incentive of actors to misrepresent or otherwise manipulate in order to gain advantage and further their particular interests. The acceptance of complexity in all the forms stated above, leads to a recognition that attempts to understand the policy process should probably not be "grand theories" which attempt to explain the entire process, but rather mid-level or micro theories which necessarily simplify and focus on a more narrow aspect of the problem. In the empirical chapters of this dissertation, it is the instruments of implementation that will receive that focus.

In a reflective piece looking back at the field of implementation studies, Paul Sabatier (2006) returns to the top-down approach and the six criteria that he had in earlier literature suggested as ways to improve implementation (Sabatier and Mazmanian 1979). In hindsight, of those six, he suggests that only two have been supported by subsequent research: first, the need for an "adequate causal theory" and second, an "implementation process legally structured to enhance compliance" in which he includes several other sub points, i.e. reducing the number of veto points, sanctions and incentives to overcome resistance, and assignment to supportive agencies (Sabatier 2006). The first is central to the case studies in this dissertation, and while the second is also important, it will not be further addressed here as the legal structuring of implementation is not investigated in the empirical chapters.

The "adequate causal theory" which Sabatier borrows from Pressman and Wildavsky (1973) is presented as a top-down concept. He writes that policy should "incorporate an implicit theory about how to effectuate social change" (Sabatier 2006: 19). This causal theory, as we will explore in the next section, can be characterized using the institutionalism literature.

Chapter six in this dissertation operationalizes the three main types of institutionalism in terms of their logic, which could just as easily have been designated as their causal theory, and tests that against several tools used in the system of research evolution in Sweden. While Sabatier considers causal theories from a top-down perspective, this dissertation sees it as one which is non-linear. That is to say that when the idea of a "causal theory" is characterized within an institutionalist framework, it can be read either as a policy intention on the part of the policymaker or as a factor influencing the behavior of the policy object. The choice between top-down and bottom-up becomes irrelevant, rather what is important is congruence: whether the two match. Different causal theories may be effective in different environments or policy areas; what makes them so is not the correctness of the causal theory, but its correspondence with the logic used by both the creator, object and subject of that policy. We can hypothesize that when there is not correspondence, then implementation will not be successful. When there is correspondence the likelihood of successful implementation increases, although, this is not guaranteed as other factors also play a role. Complicating any attempt at finding congruence is the concept of co-evolution (see Klijn 2008b), that is the theory that as one part changes in a complex system, the others change in reaction to that first change, and this process repeats endlessly. In other words, the policy process simultaneously effects and changes the logics of both policy makers and those whose behavior is being shaped by them.

In the next section we turn our attention to the policy tools employed for the implementation of governance of knowledge. As described by Lester Salamon, there is a clear relationship between implementation and tools: "By shifting the focus from agencies or programs to underlying tools, therefore, the "new governance" provides a way to get a handle on the post-enactment process that the implementation literature identifies as crucially important. Tool

choices significantly structure this process and therefore affect its results" (Salamon 2000: 1627).

2.2. Theories of policy instruments

Policy instruments play an important role in implementation; however, much of the literature treats them as neutral tools that are used to achieve a particular policy objective. This creates a tendency to focus on the interests which were involved in selecting the tool or the way in which the tool furthered the intentions of the policymakers. In this section we will build on a newer theory in the study of policy instruments that challenges the idea of tool neutrality by arguing that instruments are a type of institution and therefore can embed causal theories, policy logics and governance narratives. This is what makes policy instruments a worthy object of study. As Lascoumes and Le Gales (2007: 9) argue: "The type of instrument used, its properties, and the justifications for these choices often seem to us to be more revealing than accounts of motives or later discursive rationalizations". This corresponds to a similar claim made by Christopher Hood (2007: 135), "the value of identifying government's basic instruments is precisely that it can help us explore different governance paradigms across time and space." Tools, in themselves, can thus be said to simultaneously hide and uncover evidence of politics.

Further, the study of policy tools may provide a better source of objective data in policy areas where "ideological vagueness seems to prevail—or, at least, ideology is less visible—and where differentiation between discourses and programs is proving more and more difficult, the view can be taken that it is now through public policy instruments that shared representations stabilize around social issues" (Lascoumes and Le Gales 2007: 18). The authors hypothesize that this is because "actors find it easier to reach agreement on methods than goals" (Lascoumes and Le Gales 2007: 16). The area of knowledge policy provides a

good subject through which to explore this phenomena. Often it is difficult to pin down a political ideology behind what is happening or make sense of knowledge policy in terms of traditional political cleavages, but through the tools which are used we can attempt to uncover and demonstrate important paradigm shifts in governance and society.

The study of policy instruments has been approached from a variety of perspectives. Christopher Hood (2007) identifies three major approaches to the study of policy tools which he refers to as: institutions-as-tools, politics-of-instrumentality, and generic policy tools literatures. In reverse order, the study of generic policy tools seeks to identify which policy tools which would comprise the top step on the ladder of abstraction (Sartori 1970). It asks what are the broad and essential mechanisms by which government can act? Christopher Hood in his book *The Tools of Government* (1983), identifies four basic types of tool: nodality – "capacity of government to operate as a node in information networks"; authority – "legal power and other sources of legitimacy"; treasure – "assets or fungible resources"; and organizational capacity – "capacity for direct action through armies, police, or bureaucracy" (Hood 2007: 129). The advantage to a generic instruments approach is that it allows for observations and knowledge claims that are applicable broadly across time and territory. Its disadvantage is a lack of concreteness and the need for at least a second order of tools which cover their operationalized forms.

The politics-of-instrumentality approach focuses on choice: how and why tools are chosen. This includes both the instrumental ends for which the tools are chosen, i.e. the belief that a particular tool will produce a particular output, but also the political ideology and interests that lead to the selection of a particular tool.

The third approach, institutions-as-tools, looks not only at generic type tools but also includes organizational forms as tools. This allows for forms of interactive governance, such as

quasimarkets, as well as more concretely "a dizzying array of loans, loan guarantees, grants, contracts, social regulation, economic regulation, insurance, tax expenditures, vouchers, and much more"(Salamon 2000: 1612) to all be treated as policy instruments.

What are called tools by Hood are called instruments by Lascoumes and Le Gales. The following quote demonstrates their similarity (with Hood's four categories in brackets): "a brief catalog of these instruments can be drawn up: legislative and regulatory [authority], economic and fiscal [treasure], agreement and incentive based [n/a], information and communication-based [nodality]" (Lascoumes and Le Gales 2007: 5). What is noticeable right away, is that the third category "agreement and incentive based" tools don't fit well into Hood's typology. That is because, these are the new governance tools, as elaborated by Salamon, which are associated with the New Public Management narrative that came to the fore of policymaking a bit after Hood published his text in the mid-1980s. Hood's final category "organization" which encompasses direct government action, bureaucratic rowing, is the one which these new tools seek to replace. The rowing function of the government [organization] shifts to a steering relationship through third parties [agreements and incentive based instruments] with the rise of neoliberalism. For Salamon the very existence of this broad range of new tools is evidence that New Public Management has already colonized policymaking: "What this suggests is that government does not need to be "reinvented," as the new public management has suggested. That process is already well along. The great challenge now is to find a way to comprehend, and to manage, the reinvented government we have produced" (Salamon 2000: 1621).

The terms instrument and tool are used rather interchangeably in much of the literature and will also be used that way in this dissertation. The definition used for this dissertation comes from Lester Salamon (2000: 1641-2): "a tool, or instrument, of public action can be defined as an identifiable method through which collective action is structured to address a public

problem." This definition fits nicely with the definition of governance which was used in chapter one in that it echoes the concepts of "collective action" towards "common goals" or in the words here a public or common problem. The policy tool is an "identifiable method"; identifiable in the sense that it can be classified, and method in the sense that it is about the process, the connecting logic between inputs and outputs. As was discussed in the section on implementation, there is nearly always a gap between aims and results because the policy process is simply too complex for specific objectives to become results without going through some kind of adaptation and change. Linder and Peters (1998: 45, cited in Hood 2007) argue that there is "a growing understanding that instrument selection is not a simple mechanical exercise of matching well-defined problems and equally well-defined solutions. Rather, it is fundamentally an intellectual process of constituting a reality and then attempting to work within it." The idea of 'constituting a reality' fits with the policy instruments framework developed by Lascoumes and Le Gales that is grounded in two critical arguments (2007: 3):

> (1) public policy instrumentation is a major issue in public policy, since it reveals a (fairly explicit) theorization of the relationship between the governing and the governed: every instrument constitutes a condensed form of knowledge about social control and ways of exercising it; and
>
> (2) instruments at work are not neutral devices: they produce specific effects, independently of the objective pursued (the aims ascribed to them), which structure public policy according to their own logic.

For them, public policy instrumentation is always described in the plural as there are nearly always multiple instruments used for addressing policy problems. However, we can look at the instruments both collectively and individually. Taking them individually allows for a clearer study, but with the caveat that as part of a system of tools, the effect of any one tool is somewhat muted. The policy instrument as understood in this theory encapsulates a form of social control that is concretized and thus able to be studied quite directly. Social control can be understood in a variety of ways. For the purposes of this dissertation it can be argued that

the forms of social control are characterized by governance narratives (see particularly chapters four and five), that are themselves shaped and informed by new institutionalist structures (see later sections of this chapter and chapter six). The second major point that the authors make, is that instruments produce effects independent of their political objective. The idea that instruments are neutral and can therefore be bent towards different ends, is not a legitimated knowledge claim. This means that instruments can embed politics that differ entirely from the politics and intentions of the policy entrepreneurs who established them. Understanding policy is therefore better served by seeking to understand the way these instruments function and shape behaviors and outcomes, rather than looking at the interests or intents of their creators.

2.3. Policy instruments as institutions

What is still missing from this conceptual model is an understanding of how and by what specific logic these instruments work. This is where institutional theory can be used to provide an explanatory mechanism. Institutional theory is a general theory in that it can be applied broadly to a great range of social phenomenon. At the heart of institutional theory is the idea that focusing on institutions rather than individuals will provide more insight into social phenomena, that is to say not merely that institutions matter, but that they matter because they constrain, enable, shape and regularize (at least to a degree) individual's behavior (March and Olsen 2006). Institutional theory thus takes the position that by first focusing on structure, we can learn more about agency. This does not necessarily contradict the ideas that structure and agency are dialectical or mutually dependent (Giddens 1984), rather it is methodological choice about how to approach this dilemma.

Guy Peters (2012: 19-20) identifies four essential elements of an institution: one, it is a structural feature of society that transcends individuals but does not necessarily have a formal

basis; two, is maintains stability over time; three, it affects individual behavior; and four, its members hold some shared values or meaning. Following this definition, the argument can be made that instruments are indeed institutions. This is a view shared by both Lascoumes and Le Gales and Salamon:

> Tools are thus "institutions" in the sense emphasized by students of the "new institutionalism," i.e., they are regularized patterns of interaction among individuals or organizations." They define who is involved in the operation of public programs, what their roles are, and how they relate to each other. They thus importantly shape the set of considerations that effectively come to bear in the all-important implementation phase of policy (Salamon 2000: 1642).

> "[A policy instrument] is a particular type of institution, a technical device with the generic purpose of carrying a concrete concept of the politics/society relationship and sustained by a concept of regulation. (Lascoumes and Le Gales 2007:4)... Instruments really are institutions, as they partly determine the way in which the actors are going to behave; they create uncertainties about the effects of the balance of power; they will eventually privilege certain actors and interests and exclude others; they constrain the actors while offering them possibilities; they drive forward a certain representation of problems... Like any institution, instruments allow forms of collective action to stabilize, and make the actors' behavior more predictable and probably more visible. (Lascoumes and Le Gales 2007: 9)

Determining that we can treat instruments as intuitions is only part of the explanation, as institutional theory itself is not unified. There are numerous discourses on institutional theory, which are rooted in different disciplines, particularly political science, sociology and organizational theory, but there are also cross-disciplinary and even interdisciplinary approaches. This dissertation uses the "new institutionalism" of political science. The term "new institutionalism" was coined by James March and Johan Olsen (1984) to distinguish it from the old, pre-world-war-two institutionalism, that fell out of favor with the rise of behaviorist and rational choice models of politics that focused on the individual as the primary element of study. They argued that the individualist based models of politics precluded a satisfactory explanation of collective behavior and led to contextualism, reductivism, utilitarianism, functionalism and instrumentalism, all of which hindered an understanding of political phenomena (March and Olsen 1984). Within political science, the

new institutionalism, has spawned a number of different variants. Guy Peters (2012) in his seminal text identifies seven variants; however, for the purposes of this dissertation only the three most prominent will be used. These three are all well established and accepted in the academic literatures. In the following paragraphs, a brief description of each will be provided; however, since it would not be possible to do justice to these theories in such a short space, the focus of this section is on the key differences between the theories in terms of how the institutions work, their basic structural features, and the mechanism by which they enable or constrain individuals.

2.3.1. Normative institutionalism

March and Olsen's (1984) initial article begins the branch that is known as either sociological institutionalism (Hall and Taylor 1996), normative institutionalism (Peters 2012), or even the less commonly used organizational institutionalism (Campbell 1998). Given the confusion that the words 'sociological' or 'organizational' create when referring to the political science variant, this dissertation prefers the term normative institutionalism. What characterizes normative institutionalism is its emphasis on shared norms and values. These are what define and hold the institution together. What is considered normal or acceptable behavior for the individual is judged by its adherence to the shared norms and values, that is individuals behave according to a "logic of appropriateness". This is the key phrase for normative institutionalists.

Normative models of institutionalism work by encouraging compliance with norms, but not through reward or punishment; rather this occurs through peer-pressure, self-policing, and the internalization of a commitment to the institution and its purpose and values. The normative variant includes "not just formal rules, procedures or norms, but the symbol systems, cognitive scripts, and moral templates that provide the 'frames of meaning' guiding human

action [and in doing so] breaks down the conceptual divide between 'institutions' and 'culture'" (Hall and Taylor: 947). All of these elements are internalized, and affect not only what an actor does but what that actor can imagine doing (Hall and Taylor 1996). This suggests that compliance need not be understood only as a conscious decision, but can also become deeply embedded as habit and routine to the point where individuals may see it as just "the way we do things here" or it may become even more formalized as a rule. Again, there is no coercion or threat of punishment, rather "rules are followed because they are seen as natural, rightful, expected, and legitimate. Members of an institution are expected to obey, and be the guardians of, its constitutive principles and standards" (March and Olsen 2006).

Policy tools derive their power in this variant by latching on to or creating rules and expectations about what is the proper way to behave. In other words they construct or revise a logic of appropriateness, which guides the individual's behavior. The choices on the part of the individual are made on the basis of following expectations embedded in the tool's causal logic.

2.3.2. Rational choice institutionalism

The second major variant of institutionalism, rational choice, comes out of the individualist and behaviorist traditions that the new institutionalism reacted against; however, because individual behavior occurs within and is therefore subjugated to the institutionally created structural context, the institution is seen as playing a primary role in shaping behavior while actor agency becomes secondary. Determining what is rational depends on the institutional arrangement. This variant focuses on "the importance of institutions as mechanisms for channeling and constricting individual behavior"(Peters 2012: 49). Institutions in this strand of the literature, are collections of rules and incentives which control individual actors by establishing a framework or "limited ecology" in which rationality can function (Peters 2012:

56). Other authors explain them as "scripts" for behavior, which include the actors, strategies, sequences, information, and outcomes (Shepsle 2006). These scripts are played out in a game like manner. In this variant, it is also possible to view institutions as "the rules of the game in a society" (North 1990: 3). These rules can be conceptualized as externally imposed, which is the traditional way we think about game rules, but also they can be internally decided on by the players themselves.

There are a number of different approaches to rational choice institutionalism, but they all share certain elements (Peters 2012, Hall and Taylor 1996). They share the assumptions that individuals act rationally (and intentionally) to maximize personal utility within the aggregated set of rules that is an institution. In this way, individuals are treated as if they each have the same interests and preferences, and that they act "in a highly strategic manner that presumes extensive calculation" (Hall and Taylor 1996: 945). As summarized by Barry Weingast (1996: 169): "Strategic interaction of individuals within a well-defined context is the hallmark of the approach". The varieties of rational choice share the idea that institutions exist in order to produce collectively desirable outcomes that would otherwise not be possible due to shortcomings in the market or political system, for example, the "prisoner's dilemma" or the "tragedy of the commons" (Axelrod and Hamilton 1981, Hardin 1968). Finally they share the belief that institutions are formed on a clean slate, that is, the persistence of values or history does not for them influence the behavior of actors. Creation or changes in the rules and incentives produce a direct rational effect without any lingering effect of past rules or incentives.

While the rational choice variant has been broadly applied and provides valuable insights into some phenomena, there are some significant problems with this model, in particular its insistence on a rationality common to all actors. These problems are demonstrated both in older research, such as the theory of bounded rationality (Simon 1957), which argued against

the idea that humans could make a fully rational decision due to a lack of complete information and limited mental capabilities, and in newer research in behavioral economics (e.g. Ariely 2008), which finds that human behavior is not entirely rational, at least in the way rational choice theorists have hypothesized.

In the rational choice variant, policy tools achieve their power by creating incentives or disincentives that shape an actor's choices through rational decision-making. The tools turn calculations of individual utility into behavior shaping mechanisms by structuring a set of rules which encourages or discourages particular behaviors. Quasimarkets are a quintessential form of this type of tool, as are most of the tools which have arisen out of a neoliberal or New Public Management reform agenda.

2.3.1. Historical institutionalism

The third major variant is referred to as historical institutionalism. In this variant, the focus is on the inception of the institution and how the choices made at that initial moment define the subsequent decisions and behavior of the institution and actors within it. It is the historical foundation of the institution that explains how it works. This is what is known as "path dependency" (Pierson 2000, Pierson 2004, Peters, Pierre, King 2005). The institution functions according to the conditions with which it was established and cleaves to those as if it were on a particular path. It posits strong inertia and persistence over time of the elements that define the institution (procedures, routines, norms, conventions); therefore, it has a harder time hypothesizing how and why change occurs than the other variants. Its mechanism for exercising constraint over the individual is also less obvious. In order to make sense of these two things, it is necessary to understand the centrality of ideas to the theory of historical institutionalism and through ideas develop a model of the relationship between the individual and the institution. Guy Peters (2012: 75) provides a clear analogy: "ideas are the functional

equivalents to the logic of appropriateness in normative institutionalism". In other words, rather than norms and values, institutions are centered and built around ideas. It can even be said that they are the embodiment of ideas.

This still leaves the question of how to understand the relationship between the individual and the institution. While Peter Hall's (1993) article on social learning was intended to explore how change occurred, it also provides insight into why it does not. That insight can help us to better understand how historical institutionalism works and through that how it conceives of the relationship between the individual and the institution: "Policy responds less directly to social and economic conditions than it does to the consequences of past policy. In Weir and Skocpol's terms, the interests and ideals that policymakers pursue at any moment in time are shaped by 'policy legacies' or 'meaningful reactions to previous policies'" (Hall 1993: 277). In other words the primary factor shaping policy at 'time-1' is policy at 'time-0'. Hall (1993) goes on to create a three level model of policy change: first order change merely entails incremental or routine adjustments to existing instruments, second order change involves new policy instruments, and finally third order change affects the overarching goals and worldview, or what he terms the "policy paradigm". Frank Baumgartner builds on Hall's work, but argues that the three orders of change are based on one key element: the legitimacy of the status quo. He proposes that there is only one variable behind all the orders of change which can be discovered through the question: "has the status quo been discredited, and to what degree? (Baumgartner 2013: 4)" Simply put, "allegiance to the status quo" is assumed to continue unless it is disrupted, and that can occur on any of the levels of aggregation (Baumgartner 2013: 9). Baumgartner writes that the reason for the continuance of the status quo is likely due to the "sticky nature of ideas within policy communities: Reframing an issue is not very easy because other experts within the community typically have strong attachments to the status quo definition of the issue" (Baumgartner 2013: 13). These strong

attachments can lead individuals to discount evidence of flaws or inadequacies in the current policy or instrumentation. Further there is always a risk to changing the status quo which can prevent action being taken. Baumgartner has found that the "risky scheme" argument is one of the most commonly used in US politics, and it is usually successful unless a consensus on the unacceptability of the status quo emerges (see Baumgartner et al. 2009).

Ideas in themselves necessarily tie the institution to the individual: In the words of Thomas Risse-Kappen (1994), "Ideas Do Not Float Freely". They can only exist in the mind of a person; therefore, individuals that are part of institutions can be described as buying into and internalizing the ideas which led to the establishment of the institution (Peters 2012). This suggests that the logic of the continuation of the status quo will also hold true at the individual level. Two explanations for this can be found: The first is that individuals internalize the ideas. In this variant "institutions provide moral or cognitive templates for interpretation and action. The individual is seen as an entity deeply embedded in a world of intuitions, comprised of symbols, scripts and routines, which provide the filters for interpretation, both of the situation and oneself, out of which a course of action is constructed" (Hall and Taylor 1996: 939). The course of action decided by the individual can take either a calculus approach, in which individuals maximize utility as per the rational choice variant, or a cultural approach, in which individuals are satisficers, as per the normative variant. This is why Vivien Schmidt (2010:21) characterizes historical institutionalism as falling between rational choice institutionalism and normative institutionalism: it can "go to either side when it adds agency". A second explanation for the relationship between individuals and ideas in institutionalism rejects the structural approach of paradigms, suggesting that it removes the thinking dimension from actors. In this explanation, individuals don't internalize ideas and behave as "dopes" (Giddens 1984) thoughtlessly following a paradigm, but rather choose and combine ideas as they would pick

tools from a toolbox. Even in this model, however, the theory of historical institutionalism holds because the choice of tool at 'time 1' will most likely be the same as the one which was chosen at 'time 0': "What constrains the process of weaving together ideas in a way that creates political resonance is not the structure of a certain paradigm but rather the previous application of the idea. That is, since new ideas must be hooked on to older ideas, ideational path dependence in practice limits the possible combination of ideas" (Carstensen 2011: 156-7). Either way, whether they are internalized or left external, ideas are the key element for understanding how actors "frame and schematize the vast informational complexity that social interaction creates" (Carstensen 2011: 154). Ideas are the foundation of people's actions in this model, and "as people interact with institutions, the founding ideas are reproduced" (Beland and Cox 2011: 9). Institutions in this way are not constraining or enabling through routines as in the normative model, but rather through the shaping of belief systems.

In terms of policy instruments, Lascoumes and Le Gales (2007: 6) clearly identify the importance of the historical element in each tool for understanding the way it maintains the status quo of its establishment: "We take the view that every instrument has a history, of which it remains the bearer, and that its properties are indissociable from the aims attributed to it".

2.4. A typology of policy instruments for research funding and evaluation

Policy instruments for research evaluation and funding can be differentiated according to the techniques and mechanisms that these tools employ. In this section, we briefly examine typologies for funding distribution mechanisms and evaluation mechanisms.

2.4.1. Funding distribution mechanisms

The first typology depicts the mechanism by which research funding is distributed by governments to universities. There are three basic types of instrument used for this purpose: core funding to universities (often referred to as general university funds or GUF), project based funding, and performance based funding (Lepori 2011). Core funding for universities involves block grants from the government which are allocated to universities as a lump sum that provides for the continued existence of the institution. The funding is determined by past funding levels or formulas based on input measures, such as student enrollment or number of faculty, that do not involve the assessment of quality. Depending on the arrangement of the national university system and the level of autonomy afforded its higher education institutions, this funding may be freely available for university administrators to distribute or may be essentially pre-allocated, leaving little or nothing to the administration's discretion (Herbst 2007). Core funding does not involve any competitive element, except perhaps for the jockeying of universities to receive a larger share of the pot. In the past, core funding made up the vast majority of research funding. More recently there has been a move away from this type of funding mechanism. The European Union strongly advises national systems to reduce this funding in favor of more competitively based alternative: "Universities should be funded more for what they do than for what they are, by focusing funding on relevant outputs rather than inputs… Competitive funding should be based on institutional evaluation systems and on diversified performance indicators with clearly defined targets and indicators supported by international benchmarking" (European Commission 2006: 7). The other types of funding instrument, to which we now turn attention, all involve competition.

Project based funding is funding allocated directly to a research group or individual based on the evaluation results in a competitive tender for a proposed research undertaking. This funding is not distributed to the university itself, but to particular research teams or areas

within the university. Project funding can be distributed directly by the state, but more commonly is distributed through research councils that are often organized as agencies of the state. Project funding is determined ex ante, often through a peer review panel, although it may also include criteria related to past performance of the applicants. The time-orientation dimension is important for understanding research evaluation as it reflects two different philosophies: either the evaluation is a forward looking (ex ante) attempt to predict the potential for success of the research, or it is a backwards looking (ex post) evaluation of what the researcher has done previously (Geuna and Martin 2003). There are advantages and disadvantages to both; in brief, the ex ante approach provides more opportunity in that it allows researchers without a long track record to compete head to head with those that do, based solely on the quality of their research idea. As such it claims to prevent established researchers from resting on their laurels. The negative side is that it is extremely difficult to predict research outcomes, and the best predictor of future results is arguably past results – the potential of the person doing the research rather than the project itself. However, measuring and capturing the quality of past results is fraught with difficulties as we will examine in the typology of evaluation mechanisms.

Performance based funding allocates funds based on an institution's success relative to predetermined performance measures. There are a range of performance measures that can be used for this purpose (see Expert group for the assessment of university-based research 2010) but the primary ones are publications and citations, doctoral graduates, and grants received (van Vught 2009). Increasingly countries are developing Performance-based Research Funding Systems (PRFS) by which to allocate research funding. This trend started in the UK with the Research Assessment Exercise, but has been undertaken by different governments in different ways. PRFS tools are recognized by five criteria: they focus solely on research, the evaluation is done ex post, research outputs must be part of the evaluation criteria,

government funding must depend on the results of the evaluation, and it must be a national system (Hicks 2011). PRFS's can be seen to share in many of the same neoliberal objectives that began to assert themselves in the 1980s and that led to an emphasis on increasing productivity, reliance on market like incentives, devolution (i.e. addressing problems closer to the source and outside of governmental ministries), and increasing accountability (Hicks 2011 based on Kettl 2005). Ultimately, PRFS tools are oriented towards the "enhancement of research excellence" (Hicks 2011: 259). But excellence, as we will examine in chapter four, is an ambiguous concept.

Finally, prize funding, in which a large sum of prize money (and also prestige) is offered to whoever can solve a particular problem. Like project based funding it is given to research teams or individuals but is determined ex post, after the problem is solved. This type of funding, while gaining traction in industry based research areas, is less commonly found in university-based research in Europe.

In practice, countries tend to use a combination of all three types of funding. One of the major issues that has come up in various countries, as we will examine in chapters five and six, is that the designers of new instruments attempt to have them fully replace rather than supplement the old instruments, however, this attempt has generally been tempered before the policy is fully implemented, leaving a system with a variety of differently oriented instruments.

4.4.2. Evaluation mechanisms

In addition to the various types of distribution mechanism discussed above, we can dig even deeper into the techniques used within the competitively oriented funding tools and distinguish between judgment-based systems and metric-based systems of research evaluation.

Judgment-based systems of research evaluation are the traditional mechanism by which academics self-govern. Peer review is the essential technique for this kind of assessment practice. While peer review can vary slightly depending on whether it is used individually for publication purposes or in a panel setting to review projects and grant proposals, the key elements are the same: there should be multiple converging opinions about the quality of whatever is being evaluated, and those opinions should be made by experts in the field without knowing whose work they are evaluating. This system has the benefits of judging each work individually according to its merits by experts with insight into the area being studied. The judges can evaluate the quality of the work, as well as its relevance, importance, applicability, potential, and any other criteria they might agree or be instructed to include. The current Research Excellence Framework in the UK uses peer review panels to look at the quality (which includes the originality, rigour, significance) of outputs as well as their impact and the research environment in university departments.

The system of peer review was developed in Europe in the 17th century and has since then served to provide confidence in the quality and accuracy of knowledge claims through a system of self-corrective self-policing (de Bellis 2009). In practice, there are a number of problems that arise in peer review based systems. It is difficult to create true anonymity, and hence reviewers can often guess whose work they are evaluating allowing secondary considerations, conflicts-of-interest, biases and prejudices to play a factor in their judgments. Secondly, obtaining agreement among even two reviewers is difficult and often not possible. Finally, the peer review process can tend towards conservatism, as experts may judge harshly attempts to undermine the accepted orthodoxies in a field of study. In addition to these internal problems with the peer review process, it is also a slow, labor intensive, and hence expensive method of evaluation.

Metric-based systems grew out of an attempt to rectify the above mentioned problems with judgment-based systems. By relying on quantitative data that can be analyzed without human interference, the objective was to develop a more accurate and fair system that would turn scientific techniques on the practice of science itself. Metric-based solutions would also have the advantages of being fast, non-labor intensive, and thus relatively inexpensive. While the beginnings of bibliometrics can be found in the 1970s, it is in the 2000s that these systems gain serious traction. Advances in information technology systems, so called big data, that have allowed for the collection, indexing and processing of a vast numbers of publications are one reason. In this dissertation we also see that political narratives and ideas play an important role.

Metric-based systems generally rely on one of three units of recognition: publications in themselves, citations, and the outlet in which the research is published. The first unit, publications in themselves, is straightforward. It essentially just involves counting: how many publications has X (university, unit, researcher) produced? This is clearly a crude measure that is very easily manipulated and involves no effort to judge the quality of what is being measured.

Making citations the unit of recognition, is an technique which brings the quality factor in. A citation is a "pellet of peer recognition" (Merton 1988: 622), or in other words, a unit of qualitative value. If we accept this, then a study of citations will tell us about the quality of the work produced. While there is general agreement within the academic community that a citation is valuable and important as a symbol of recognition, nevertheless the use of citations as the basis of an evaluation system does pose a set of problems. First, the general problem of collecting data. Even the largest systems today are not comprehensive; they do not cover all journals in all languages. Further, these databases do not include books, patents, or most conference proceedings. This leads to a bias towards certain disciplines in which publishing

practices are more journal and English-language based, making any kind of cross disciplinary comparisons problematic. Second, there is a time related issue. Some articles are cited quickly while others involve a longer gestation period, but may eventually be cited extensively. Here again there are differences between disciplines. Third, different types of articles are cited differently. Review articles and highly controversial articles tend to be cited more often, though they don't necessarily bring about greater advances in knowledge than other types of publications. There is also the Matthew effect (Merton 1968) which shows that rewards in science tend to go to those who are already the most prominent, and citations follow this same pattern. Finally, the behavior and rationale behind the actual practice of citing differs among academics even in the same field. Citations can be seen to have at least two different functions: an instrumental one, which directs others to resources that they might find useful or interesting, and a symbolic one, which recognizes the knowledge claim being made as coming from someone else's work. However, even beyond that, the choice of what to cite and how much to cite has been found to be highly individual (see De Bellis 2009: 245-262). In terms of funding tools, focusing on citations directly is not the most common approach, mainly due to the long time delay involved before results become available. Policymakers therefore seek a more immediately useable measure.

A solution is to focus evaluation on the outlet in which the publication appears. This provides a shortcut for determining quality. If the output is published in a better journal then it can be considered a better output. The same can be said for the imprint of a book or the patent office in which an application is made. For journals, this shortcut is known as the impact factor. The impact factor of a journal is an index number which purports to represent the quality of the journal. More precisely, it is the likelihood of how many times an article published in that journal will be cited. The index number given represents the average number of citations that an average article in that journal will obtain. The biggest problem for this method is that the

average rarely exists, that is, most articles in a journal will not get an average number of citations, but either significantly more or fewer. On the other hand, it is clear that certain publications are more prestigious, hold higher standards, are more widely read, and more difficult to get an article published in than others. So the idea behind focusing on journals is not problematic in itself even though the system for its measurement may be.

2.5. Conclusion

What is beginning to take shape is a picture of policy instruments for research governance that combine elements from informational, financial, and incentive-based techniques and mechanisms. These include a variety of different variables: project vs. performance funding, ex ante vs. ex post time orientation, and metric-based vs. judgment-basedevaluation. The tradeoffs between them can be characterized both within the logics of intuitional theory in terms of what type of causal mechanism they embed as well as being analyzed in terms of the governance narrative to which they demonstrate coherence. Causal beliefs regarding competition, transparency, trust in numbers, trust in expert opinion, the role and importance of excellence and relevance all play a role in this as we will explore over the next four chapters.

PART II

Case Studies

CHAPTER 3.

GOVERNING RESEARCH IN THE EU:

STEERING AND INSTITUTION BUILDING[1]

3.1. Introduction

The importance of the concept of a "knowledge economy" for European Union policy has brought higher education and more specifically university-based research to the forefront of policy concerns. The Lisbon strategy and the subsequent EU 2020 strategy rest on the assumption that knowledge creation and dissemination is and will continue to be the basis for competitiveness in a globalized world. In order to address this area, the EU has sought ways to influence the creation and dissemination of knowledge without directly creating higher education or research policy, as those fall outside of its jurisdiction and are subject to national sensitivities and path dependencies. The attempts of the EU to play a role in higher education can be traced back as far as the 1950s (Corbett 2006); however, in the year 2000, a significant shift occurred in EU policy. The belief in a direct connection between knowledge creation and economic growth became enshrined in the Lisbon strategy and thus invited new policy initiatives which emphasized the economic role of universities in contradistinction to their cultural and socializing role. While this shift was beneficial for EU policymakers seeking more control over the higher education area, the economic conception of universities originates outside of the EU. The process of globalization, the drive for national competitiveness, the discourses of the knowledge economy and innovation systems, and broader neo-liberal ideas undergirding the concept of new public management, as well as organizations such as the OECD and

[1] Young, M. (2012). Multi-level Steering and Institution Building: the European Union's approach to research policy, *European Educational Research Journal*, 11(4): 570-585.

World Bank, have all been highly influential in pushing countries to adapt their university sectors to a more economically oriented model.

What then is the role and objective of the EU in the policy area of university-based research? What does the EU bring to the table that neither the national economies nor the global higher education landscape can provide? This chapter is intended to map out the boundaries for understanding how research is steered in European policy and in so doing to identify areas in which the EU plays a unique role. It finds that the tools used for steering by the EU can be understood in the same framework as those in the governance toolbox of national governments as identified by new public management theories. The chapter looks at the Europeanization of higher education research from a multi-level governance perspective, that is, how the EU is working to coordinate policy and create institutions which support the overarching goals of the Lisbon strategy on multiple levels: supranational, national and subnational. It concludes by questioning whether the EU role can be seen as supporting existing structures on the aforementioned levels of governance or whether it is reshaping the landscape by establishing a new level, an EU level, demarcated as the European Research Area.

3.2. Governance Levels and Available Steering Tools

While research policy pre-Lisbon strategy was predominantly under national government control as part of higher education policy, that has rapidly changed as the EU has moved to expand its influence at a supranational level and also encouraged the strengthening of university autonomy at a subnational level. The theory of multi-level governance, which comes out of the international relations literature, provides an explanatory framework for addressing university-based research policy. It posits that governance in the EU no longer

happens solely at the national level, but is spread among several levels most commonly identified by supranational, national, and subnational and that those levels include both traditional and non-traditional political actors (Hooghe and Marks 2001). Its attractiveness, in the words of Piattoni (2010: 10), is that it "stubbornly reminds us that territorial jurisdictions are not about to disappear even though they are undergoing powerful transformations and even though non-territorial jurisdictions are becoming ever more relevant". The theory thus allows us to employ governance ideas without leaving federalist and intergovernmental understandings of government behind. This is particularly valuable for research policy as it allows us to deal with the inherent tension of higher education as a national project which shapes the elites of a society, supports national economic competitiveness and the prestige of national universities, while at the same time being an global institution with roots and traditions that are older than most modern nation states (Meyer et al. 2006) and whose output can be seen as a global commodity. Research policy falls under what has been characterized as type II multi-level governance, as it is not geographically delimited, and on the subnational level has flexible, overlapping jurisdictions, and actors and networks that tend to specialize on a particular area (Hooghe and Marks 2010, Piattoni 2010).

The governance tools available for steering university-based research can be grouped into three broad types of instrument: legal, financial, and informational (van Vught 2009). Legal instruments involve direct control over universities and research and are most often used in shaping state-university dynamics and the creation of research priorities. These instruments are directly available only on the national level as the jurisdiction of the EU does not allow it to impinge directly on the national higher education systems; however, an argument can be made that the open method of coordination (OMC), as a form of soft law, should be

considered as a legal instrument. The OMC uses voluntary policy objectives, benchmarking, monitoring, and peer pressure to enact policy change in an intergovernmental manner.

Studies on state-university dynamics provide typologies of the relationship between the state and the university (Maassen and Olsen 2007). There are three key types for the purposes of examining dynamics in the EU: "state control," "state supervision," and "community of scholars." A fourth, "market," type is also included in many typologies; however, this model tends to entirely disassociate the university from the state, which makes it not particularly useful for understanding the highly state-integrated situation in Europe where even the quasimarkets which the state uses to structure the activities of universities, become intertwined with the state supervision model. Across Europe, but also across the world, there is a movement away from a state control model of university governance towards a state supervision model (Maassen and Olsen 2007). The movement away from a control model, where the state is directly involved in the strategic and even managerial decisions of the university, is undertaken in the belief, supported by the neo-liberal ideology, that self-governance will allow institutions to make better strategic decisions, which will ultimately make them more effective and efficient. The result is a model in which the university acts like a sort of business (McKelvey 2010). This autonomy, however, comes accompanied with accountability, meaning that the institutions are in many ways more tightly controlled than before. The paradox in which “de-centralization leads to centralization" (Diefenbach 2009: 898) has been seen in multiple studies of new public management. This accountability agenda means that there is also a change in the state-university dynamic with a movement away from the community of scholars model, often referred to as the Humboldt model. Established in the 19th century by Wilhelm von Humboldt, this model has at its core the idea that the state should protect the university from outside interference in the belief that free inquiry is critical for scientific innovation. While states generally don’t employ a pure model of university

dynamics (state control, state supervision, or community of scholars) but rather develop a mixture of the above models based on current ideas of best practice but strongly influenced by path dependencies and historical models, there is a clear trend towards more supervision under the guise of autonomy. The ability to supervise requires appropriate policy tools which can be found in financial and informational steering instruments.

Steering with financial instruments occurs on all governance levels, and as institutional autonomy increases, are arguably the most powerful tools. We find examples at all three levels: the EU in its funding of projects and infrastructures, the national governments in funding of universities, research councils, and sometimes projects and researchers directly, and the subnational level in the way universities and funding councils chose to distribute funds to researchers and networks.

On the national level, where still the vast majority of European university funding originates, the state determines what financial resources will be made available. There are three basic types of university funding in the research area: general, performance based, and project based. General university funding, or block funding, is given to the university in a set amount, usually based on the previous year's funding and possibly other formulaic factors such as the number of students. There is a clear governance trend away from general funding, and towards the other two types which allocate funds according to the historical performance and/or strategic potential. Performance based funding is historically based, that is, the amount of funding is determined by the past performance of the researchers. Project based funding on the other hand is forward looking in that it apportions funds based on a proposal for future research, though in many cases historical performance is also considered when determining project based funding. On a national level we see a combination of all three of these funding mechanisms, albeit in different proportions across different EU states. On the EU level itself, we see mostly project based funding, coming from the Framework

projects, and new institutions created under the European Research Area, namely the European Research Council, the Joint Technology Initiatives and the European Institute for Innovation and Technology; additionally the EU provides funding for large infrastructures which are likewise future-oriented. On the subnational level, we also find primarily project based funding, coming from research councils and to a lesser extent regional funding initiatives.

Informational steering mechanisms allow steering through the identification, evaluation and categorization of research success (van Vught 2009). In many states, this information is folded into funding decisions; however, there are still some countries, the Netherlands for example, where the information is given the authority to steer by itself based on the Standard Evaluation Protocol. Informational systems are also used to determine university success in the way of rankings and systematic success in broad pubic management terms. Informational steering mechanisms play an important role on the EU level, where the open method of coordination is dependent on informational tools which publicize differences, leading to peer pressure which in theory inspires a compulsion to enact policy. Sotiria Grek (2008) identifies a shift in EU policymaking post 2000 in which numbers rather than symbols have come to dominate the educational policy discourse. The focus on measurement through a numbers based discourse allows the simple and clear comparisons which the OMC requires.

Financial and informational steering mechanisms are often brought together to form performance based funding systems for research. Underlying any such funding system is a concomitant system for the valuation of research which enables the comparisons according to which distribution is determined. These types of system run into the basic problem that there is no direct measure for what they are attempting to identify: the impact which a given piece of research has on society. This necessitates the use of proxy indicators which in turn introduce biases which can distort the entire research system. Evaluations systems belong to

one of two types: indicator based (quantitative) or peer review based (qualitative). While systems can employ elements of both, ultimately the final decision on where funding goes must rest on one, with the other playing at most a supporting role. There are two main advantages to a quantitative bibliometric or indicator based system: one, it is objective and avoids personal bias and politicking, and two, it is not labor intensive and thus relatively inexpensive to implement. On the other hand, it has strong drawbacks: one, it is in biased towards certain disciplines whose publication traditions are more in line with its form of valuation, and two, it is superficial in that it relies only on numeric, quantitative data, which lacks context, interpretation and expert opinion (Botte 2007). The alternative peer review or evaluation based system has the advantage of being able to evaluate research in a complex manner that treats all disciplines fairly, but the disadvantages of subjectivity in the form of potential personal bias, and the need for extensive human resources in conducting the evaluation resulting in significantly higher operational costs (Campbell 2003, Geuna 2003, Expert Group 2010).

There is a high degree of variance in the type of evaluation system used at a national level within the EU. Although Van Vught (2009) suggests that there is a growing international consensus on what factors should be involved in distributing funds: those include publications and citations, doctoral graduates, and grants received, there remain a wide range of systems at use. The two primary alternatives can be seen in the examples of the UK and Sweden. Despite their differences in approach, these two countries are both seen to be extremely successful in terms of their higher education systems and the competitiveness and innovation status of their countries. The UK relies on a peer review based system. The Research Assessment Exercise (RAE) was run from 1986 to 2008 every seven years and continues in a revised version as the Research Excellence Framework (REF). The RAE was a country-wide peer review process which rated university departments on a five point scale

according to the quality of research undertaken. The REF has maintained the peer review based structure of evaluation, although initially, the government seemed determined to create an indicator based system. The 2004 publication *Science and Innovation Investment Framework 2004-2014: Next Steps* indicates the government's intention to design a system based on quantitative measures (DTI 2004). While this did not happen (both the RAE and REF are peer review based), there have been significant changes to the system: in addition to evaluating quality as the RAE did, the REF also evaluates both impact and the research environment; and quality itself is defined more precisely as a combination of originality, rigor, and significance. The differences between disciplines are addressed through 36 subpanels which are relatively autonomous in their ability to determine how to evaluate research within the above framework and whether or not to include bibliometric measures. The REF has also expanded the review committees to include non-academic and international members, thus attempting to avoid politicking and be inclusive of third party interests. Overall, the bureaucracy and size of this effort has put off many other countries from following suit.

Sweden has developed a bibliometric model at least in part in order to avoid the potential cost of a system such as the REF (Carlsson 2009). The Swedish system is based entirely on quantitative indicators and was implemented in 2008. It has two dimensions: the first is bibliometric, which measures publication and citation data, and the second measures external research funding. The citation system is representative not comprehensive in that it is based solely on the Web of Science database, which covers a broad, but limited, number of journals. Anything appearing in a publication that is not covered by the Web of Science simply does not count. The bibliometric measure is adjusted for bias between disciplines by a simple coefficient multiple ranging from 1.0 to 2.0.

The second measure, research funding, incorporates a degree of qualitative evaluation in that external research funding is predominantly project-based and judged in the manner of peer review by experts who examine its potential in addition to the past results of the research team. Sweden has a rich and diverse system of research councils and foundations which provide funding, meaning that the state's direct contribution to university research is lower than in many countries and more multidimensional.

The original proposal for the Swedish system in 2006 originally included several additional indicators which were cut as the government developed its policy. The political decision-making process appears to have been driven by a desire to quickly implement a new system at a relatively low cost. After its first year, a report by the Research Council recommended major changes to the system, but no significant changes were made (Carlsson 2009). Another investigation and report on the system was released in late 2011. Whether that will bring about changes remains to be seen.

The Czech Republic provides an example of a less studied country which has been aggressively adapting its research environment and which illustrates how funding and evaluation are affected by the issue of autonomy in state-university dynamics. In the post-communist transition the Czech Republic adopted a Humboltian system in which the degree of university autonomy was unmatched elsewhere in Europe (Pabian 2009). That system relied on block funding to universities who had a fairly open hand in the ability to dispense those funds; however, in recent years the country has been moving towards a new model in which performance based funding plays an important role. The state is attempting to reestablish supervision capacity over the higher education institutions whose autonomy was established in the early 1990s. In 2011, for the first time, a significant amount of university funding will be distributed according to performance based criteria. These criteria have been in development since the early aughts, but are only now being directly linked to funding. The

research funding tool, officially called the Evaluation Methodology (EM) is exclusively bibliometric, and clearly benefits the fields which are dominated by journal publishing, at the expense of those where publications are in the form of books, chapters, and conference proceedings. It differs from the Swedish system in that it is entirely one dimensional, that is, it does not include external funding or any other measure as part of the evaluation results, and it does little to compensate for bias across different disciplines. On the other hand, results are self-reported, so that outputs in Web of Science, SCOPUS, and a selected list of accepted journals, which are mostly Czech based are all recognized. The EM, however, assigns low value to books and monographs, and assigns exceptionally high value to publications in the journals Science and Nature and international patents. The mechanism for assigning points under the EM is particularly ripe for gaming, i.e. manipulation for unintended, self-interested ends. Discussion on how to improve the system has been under debate by a special commission under the government's Council for Research, Development and Innovation for more than a year, but without significant outcomes. The debate appears more focused on tinkering with details rather than undertaking a comprehensive revision of the underlying mechanisms. The EM has raised a number of concerns from various quarters, including from the Technopolis group, who were hired by the Czech government to undertake an audit of the Research and Innovation environment in the Czech Republic and provide advice on its reform. Their preliminary report recommended delaying implementation of the EM for fear of the radical and irreversible changes it might engender (Arnold 2010).

Regardless, the reform has gone ahead, but it is likely that its main effect may be to further empower the university level. Despite measurement of individual researcher's publications on a department level, the allocation of funds is to each university based on a composite score. The universities have the autonomy to distribute these funds according to their own strategic priorities. Charles University, the largest and most comprehensive university in the

Czech Republic, has chosen to redistribute the funds primarily on a project basis. This serves, in theory at least, to defuse the potential damage to disciplines that have been disadvantaged by the system. In effect, it serves to add the missing layer of peer review at the university level after its removal from the national level. It remains to be seen how other institutions will choose to distribute their funds and what the longer term results will be: if the Czech system will increase efficiency and results or if the resource intensive and potentially bureaucratic peer review system which Charles University has chosen will be sustainable.

3.3. The EU's multi-level approach

The EU has two major prongs to its approach; the first is attempting to influence national policy through the open method of coordination and the second by institution building. There are several policy harmonization objectives which the EU is pursuing through the OMC: the modernization of universities, which as discussed earlier, is critical in breaking the state monopoly of control over the university sector by providing autonomy; increasing the overall, public and private, level of spending on research and development to 3% of GDP as part of the Lisbon and EU 2020 agendas; and requiring countries to publicize their national reform programs to demonstrate how they are working to meet the aims identified in the EU 2020 strategy. The second prong, institution building, is accomplished by creating institutions which by directly funding researchers, projects and infrastructures carry forward the EU's agenda. These have now been grouped under the European Research Area (ERA) which serves as an umbrella for a range of funding, mobility and networking initiatives. Further the EU has supported two new informational initiatives which classify and rank universities in a way that should allow institutions to differentiate themselves both horizontally and vertically.

The Lisbon treaty and the EU 2020 strategy both set out as a headline target the objective that 3% of GDP be made up of research and development spending. Approximately one third should comprise public spending and two thirds private spending. Hence, national governments need to consider not only how to budget more towards research but also how to persuade private concerns to increase R&D spending. The choice of target is telling as it suggests that increased spending is the key to developing the research potential of Europe. However, thus far, this policy aim can best be described as a failure. The target for 2010 was missed by all except a few countries. There are multiple reasons for this, not the least being the financial crisis. This led to a renewal of the target in the EU 2020 strategy. As a headline target, it has the advantage of simplicity and clarity; however, it does go against the grain of current budgeting in that it seeks increases when governments are intent on finding cuts and secondly it is input rather than output based, which makes it unresponsive to efficiencies, effectiveness and the overall accountability measures which presently dominate the policy environment. Finally, it isn't a balanced measure, in that the 3% requires not only increased government spending but also increased private sector spending over which it has no direct control. Recognizing this, in 2010 a decision to create a new output based indicator rather than the input based 3% was taken. The development of a new indicator "measuring the share of fast-growing innovative companies in the economy" (European Commission 2010) is to be designed in cooperation with OECD and implemented in 2012. This appears to be a radical shift in measurement from one that at least purports to measure research intensity of all types to one that is focused much more narrowly on applied research and purely economic outcomes. The details of the measurement, when they are unveiled, may show the connection with overall research funding more clearly, but this change will influence the way national governments, research councils, universities and networks orient themselves.

The cooperation with the OECD in this regard has multiple justifications. First, the EU is interested in using the OECD's expertise in the development of indicators. The close relationship between the EU, OECD and other international agencies and organizations in production of research data has a long history (Grek and Lawn 2009). The second dimension is the EU's desire for its indicator to become a global indicator so that it is able to measure not only the results of the EU member states, but to compare those with other competitor states by which it benchmarks itself, namely the US and to a lesser extent Japan, as well as up and coming competitors such as China. This illustrates how the OECD has become a central supranational actor, taking on a shaping role beyond its analytical and consulting role. The EU seems to believe that it needs both OECD's expertise and its global influence in measurement to develop and ensure the widespread uptake of the new indicator.

Part of the EU's modernization agenda is to make universities diversify their funding sources away from state funding. This is made clear in point five of the Council of the European Union's (2007) resolution:

> The need for universities to have sufficient autonomy, better governance and accountability in their structures to face new societal needs and to enable them to increase and diversify their sources of public and private funding in order to reduce the funding gap with the European Union's main competitors (Council of the European Union 2007: 2)

Unpacking this point, we find a number of the key terms which recur in the neo-liberal model of universities and which are ambiguous and may be subject to manipulation. "Autonomy" and "accountability" reflect on the state-university dynamics discussed earlier and the paradoxical nature of power relationships which both liberalize and control the universities. Facing new societal needs refers to the idea of "relevance" which can be understood both broadly and narrowly. The broad understanding encompasses all sorts of research from basic to applied and ranges across disciplines, allowing an all encompassing understanding of

societal needs including cultural and social needs addressed by the humanities and social sciences in addition to the technological and scientific solutions to societal problems; however, there is also a narrow use of "relevance" which implies only applied scientific research. It is important to distinguish between these two. Finally, diversifying funding sources can be interpreted in a number of ways as described below. The general trend is towards reducing the proportion of direct state funding, giving nations less power in financial steering, but opening up that steering power for other entities or stakeholders which include both the EU and subnational actors.

Looking beyond the use of tuition fees, which falls on the education side of the university and beyond the scope of this dissertation, there are a number of mechanisms to increase research originated revenue. This can come from industry in the form of sponsored research as well as through the universities own efforts to commodify research through patents and start-ups. This issue highlights the so called "European Paradox", that is, the fact that Europe conducts a high degree of research but is well behind the US in terms of patent filings and other measures of entrepreneurial use of the universities intellectual property. There is evidence to suggest that this paradox is overstated due to differences in reporting and obtaining credit for patents in Europe and that the gap is therefore much smaller than originally believed (Lissoni et al. 2010).

The development of a European Research Area is a major EU initiative. The overall goal is creating a fifth freedom in the open European market: one which would allow researchers, knowledge and technology to circulate freely within the EU borders (Council of the European Union 2008). Implementing that vision would require a far greater level of integration than currently exists in national systems for research evaluation, research funding, patents, transfer of knowledge, and salaries and pensions (European Commission 2007).

The European Research Area also serves to open a path directly to the subnational level which presents actors on that level with a new set of strategic opportunities and at the same time provides new ways for those actors to classify and stratify themselves. At the subnational level there are three key actors: the universities themselves, funding councils and regional funding bodies, and networks. The universities themselves set organizational strategy and allocate funding for research. However, this ability to strategize and allocate funds is taking place in a much tighter and less forgiving arena than in the past as a result of increased attention to impact measurements and efficiency by both governments and funding agencies. As in the example of Charles University above, it is clear that the role of university governance is of high importance in steering research.

Independent research funding councils are important subnational actors in their ability to evaluate and directly fund research projects. These research councils need to be distinguished from government based research funding bodies, which are tasked with distributing funds according to government set priorities. Research funding councils include representatives from the three primary stakeholders in the research environment, research organizations including universities, government, and industry. Research foundations that were established in Sweden in the 1990s were given the character of private entities and their boards became places where academics, industrialists and politicians engaged in dialog over funding of projects (Edqvist 2003). These councils play an important role in the so called “triple helix” where the interaction of university, government, and industry serves to promote competitiveness (Etzkowitz 2008). However, the integration of these elements is not easily accomplished; by way of comparison, take the membership of the Council for Research, Development and Innovation in the Czech Republic which was dissolved in September 2011 over reported failures of these various interests to reach agreement (Rychlik 2011).

Cooperation on a regional and European level between the research councils is a form of transnational network which has developed on informational (avoiding overlap and sharing best practices), financial (funding projects), as well as legislative (influencing policy) grounds. On the EU level there are a number of these organizations. One of the older ones, the European Science Foundation (ESF), was founded in 1974 and is currently comprised of 72 members (which include the funding bodies, research councils, and major non-university researching organizations such as the academies of science) from 30 countries. The organization offers project based research funding in a wide range of interdisciplinary areas, but further sees its role as ”providing a platform for Member Organisations to develop joint strategic operations and synergy among themselves (ESF n.d.).” This focus recognizes that there is a need to provide forums within which to develop networks, which may be missing in a European context. The ESF is also engaged in European Policy formation, and it has worked jointly to develop a roadmap for the ERA with the European Heads of Research Councils (EUROHORCs), which had a highly overlapping membership.

Examples of transnational networked cooperation can also be found on the regional level. Nordforsk, a network of research councils created in 2005 under the Nordic Council to serve as a platform for research funding and research policy cooperation amongst Denmark, Finland, Iceland, Norway and Sweden. The organizational mission addresses its role as a regional actor in the European and global context: “NordForsk’s overall goal is to strengthen research in the Nordic region, and thereby to contribute to the establishment of a globally competitive European Research Area (ERA)" (Nordforsk 2011). Its sub-goals include influencing policy, both European and national within the Nordic region. In bridging the national and the global, Norforsk can be seen as a microcosm for the EU itself, and indeed, in its position paper responding to the EU’s 2011 green paper *Towards a Common Strategic Framework*, it presents its experiences in that manner. The Nordic region has established a

number of initiatives which are influenced or inspired on the European level; these include the Nordic Research and Innovation Area (NORIA) which is modeled on the European Research Area, and the Nordic Centers of Excellence. In 2008, the Top-Level Research Initiative on Energy, Climate, and the Environment was created. This is a common pot funding scheme with no juste retour for dealing with grand challenges with clear parallels to the EU framework projects. In addition, Nordforsk has sponsored events that deal with Nordic-European policy issues, such as the conference *Governance of research in response to Grand Challenges in the future European Research landscape* held in Brussels in February 2012.

The ERA also creates space for the active participation of a plethora of university networks, such as the League of European Universities (LERU), Coimbra Group, and the European University Association (EUA). LERU is an association of 21 elite European Universities coming from multiple countries across Europe (though not any of the new Central and Eastern European entrants) that was founded in 2002. Its mission states: "The purpose of the League is to advocate these values [high-quality teaching within an environment of internationally competitive research], to influence policy in Europe and to develop best practice through mutual exchange of experience (LERU n.d.)." The other above mentioned organizations are similar in purpose. The EUA is much larger and broader, with nearly 850 members in 47 countries. The role of these organizations in shaping the Horizon 2020 policy of the EU will be discussed later in the next section.

3.4. Europeanization of policy

Radosevic and Lepori (2009: 661) suggest that there has been a Europeanization of national research policy characterized by five trends:

- The decentralisation of the decision-making system;
- The externalisation of the R&D management into agencies;
- The gradual increase of competition-based funding of R&D;
- The diversity and flexibility of funding sources; and
- The promotion of excellent R&D performers

While it is clear that these trends accurately reflect the EU's conception of how research policy should be structured, and while these are being implemented in different EU member states, whether this should be called Europeanization depends on how the term is defined. If Europeanization refers to a conforming of the different member states towards a shared set of conditions as described above, then yes, this reflects a Europeanizing trend. However, if we add the requirement that that shared set of conditions be somehow unique to Europe so as to distinguish the trend from say, globalization, then this is less clear. The trends described by Radosevic and Lepori are also those which are emphasized by the OECD, and in most respects are designed to model systems in the US.

The EU policy when looked at in terms of multi-level governance is aiming to enhance the supranational and subnational elements and to de-emphasize the national role. It remains to be seen whether the EU can create an actual research landscape at the European level. The construction of a European Research Area (ERA) does address some of the structural and cross-border issues, but still leaves open many questions as to how it will function and what it means for universities themselves. Is it primarily a further empowerment of research networks and their ability to work across borders or does it portend the creation of European universities? This could mean universities that are actually established at a European level, or rather more likely, it would mean that they define their competitive strategic level as European.

Enders and DeBoer (2009) identify the concepts of “stratification,” “excellence,” “relevance,” and “critical mass” as key to understanding the ERA. Each of these can be traced directly to the institutions which the EU is building. Looking at the concept of stratification we understand that universities in the EU will become more and more stratified. The drive towards excellence is happening in many countries but most notably in Germany where the "Excellence Initiative" is designed to introduce vertical stratification. France has more recently undertaken a similar initiative. Enders and De Boer see three levels of university emerging from the current landscape:

> While the top of the system represented by the leading research universities will be global players focusing on graduate education, middle ranking universities will focus on the professional masters training on the national level and low-ranking higher education providers will serve the regional market for bachelor students. A core of more prestigious and visible ‘European universities’ will thus be surrounded by a larger number of national ‘universities in Europe’ and more localized colleges. (2009: 172)

Here again we see the conflation of the European with the global. If the universities at the top of the European rankings are actually global universities, then what is gained by categorizing and defining them as European? The characteristics of a global university are being ever more clearly defined. The so called Emerging Global Model (EGM) has eight dimensions, which range from a global mission to their internationalization in terms of funding, recruitment, and external relations (Mohrman et al 2008). Universities which follow this model, in Europe and the rest of the world, may succeed in becoming “world-class” universities. It is not clear however, that this is an appropriate model for all universities. By definition, in fact, the "leading" or "world-class" universities must be limited to a small percentage at the top, otherwise the term loses its meaning. It is not clear that such a zero-sum model for research institutions will assist them in achieving their objectives. The university landscape described by Enders and de Boer implies that there is only one ideal type, the EGM, and that the degree to which a university succeeds or fails in its quest to reach

this ideal, will determine its level within a stratified European system. An alternative landscape sees multiple ideal types which correspond to the different governance levels and suggest that universities strategically choose to differentiate and orient themselves on one level or another. There is evidence that the EU is trying to steer the higher education landscape in a direction that supports multiple university types, though, in practice it may be that Enders and de Boer have correctly identified what is more likely to happen due to the power of the world-class ideal and universities' reluctance to formally differentiate (Enders and de Boer 2009).

We see a reluctance to accept the EU model of the university in the policy papers of the LERU which promotes a vision of the university that respects current global trends but is visibly rooted in older, more traditional models of the university. Strong support is found for basic, bottom up research and the social sciences and humanities, while at the same time giving recognition to the need to strengthen ties to industry and society at large. Through position papers LERU argues strongly against a model which puts political understanding of the university into a primarily economic discourse and rejects the idea that the university is a driver of innovation (while still accepting that the university does play a role in the innovation process). LERU argues that the university is a complex whole of teaching and research comprising multiple disciplines in science, social science and humanities, which is held together with a shared culture that values curiosity, skepticism, and creativity, and which produces the economic results so highly valued by government as a consequence of successfully fostering these values, not by focusing on economic outputs (Bolton and Lucas 2008).

Excellence, if it is to be understood as a means of enabling vertical differentiation, requires measurement; how exactly it is measured is highly controversial and highly determinate. That is, the measurement techniques will affect the strategic decisions for the actors seeking

excellence. Rankings systems are the most available mechanism for comparison, and globally there are two widely referenced ranking systems which purport to measure university quality (there are also a growing number of others but they do not enjoy the same level of recognition). Global university rankings are a relatively new phenomenon, and despite criticisms and misgivings have become respected, followed, and used as benchmarks by institutions, governments, and individuals. Ranking systems have become part of the environment and will play a role in quality assurance and transparency, but there is still room to adjust, shape and determine how they are used (Hazelkorn 2008, 2009, Lindblad 2008, Salmi and Saroyan 2007) There are two primary global rankings: one, the Academic Ranking of World Universities (ARWU) which was started in 2003 and is produced by the Shanghai Jiao Tong University (the so called Shanghai ranking), and two, the Times Higher Education (THE) magazine ranking, which was started in 2004 and is produced in the UK. Both the Shanghai and the THE rankings have come under criticism. At heart lies a debate over the quantitative (the Shanghai ranking uses bibliometric publication output as its primary factor) versus the qualitative (the THE ranking uses peer review of the reputation of universities as its primary factor) nature of the ranking systems. In some writings we see the replacement of the value-laden term excellence with the term prestige, which, while retaining the possibility of encompassing excellence, does put more emphasis on the perception which others have of a given university. This is, in fact, much closer to what these ranking systems are actually measuring.

The EU has been funding the U-Multirank project, which is intended to provide an alternative to the current two major systems. The rankings produced by this project should be more complex in their ability to address the multiple roles which universities play in society and to provide customizable results based on a unique mixture of the ranking dimensions. A further innovation is that this new ranking will not be a simple "league table" meaning that there will

not be a simple ordinal ranking of universities; instead, the ranking will show levels of quality across multiple dimensions of university activity, forcing the user to think in bands of roughly equal quality institutions, rather than to potentially overemphasize small differences in ordinal rank, which are most often insignificant (CHERPA-Network 2010). These innovations follow the lead of the so called Berlin Principles for ranking systems, which have become the industry standard for benchmarking the quality of ranking systems. The U-Multirank pilot project was completed in 2011 and plans to introduce the ranking system will begin provided funding continues (van Vught and Ziegle 2011). If the U-Multirank system is successful, the EU will have succeeded in changing the strategic rules of the game. Presumably the results of this system will allow more European universities to qualify themselves in as world class, by broadening the definition of world class.

LERU, despite stated concerns, had initially supported the U-Multirank project as a better alternative to the Shanghai and THE rankings and several of its members took part in the feasibility study. However, after two years experience, has withdrawn its support. In the 2012 position paper on research assessment, Mary Phillips writes: "The capacity of rankings to measure the true value of universities to society remains to this day poor and yet rankings remain powerful drivers of often undesirable behaviour by universities, policy makers and governments (Phillips 2012: 10)." The paper continues:

> As for U-Multirank, LERU was involved in the feasibility study, but serious concerns about the project have lead LERU as an organisation to decide not to engage further. Our main concerns relate to the lack of good or relevant data in several dimensions, the problems of comparability between countries in areas such as funding, the fact that U-Multirank will not attempt to evaluate the data collected, i.e. there will be no "reality- checks", and last but by no means least, the enormous burden put upon universities in collecting the data, resulting in a lack of involvement from a good mix of different types of universities from all over the world, which renders the resulting analyses and comparisons suspect (Phillips 2012: 10)."

Autonomy should not only allow institutions to pursue alternative definitions of vertical differentiation as allowed in the U-Multirank system, but should also allow them to pursue

alternative classification models of horizontal differentiation, that is, models concerned with how institutions define their strategic position and mission in the educational landscape. In the same way it is doing with vertical differentiation, the EU aims to develop more horizontal differentiation among higher education institutions (van Vught 2005 and 2008). In order to assist in understanding horizontal differentiation, the EU has funded the U-Map project, which is developing a system of classification of different types of higher education institutions. Traditionally, following the US Carnegie classification, there are three basic types: research universities (global in reach), regional universities, and teaching institutions. These are broken down a bit further in the Carnegie classification, and even further in the U-Map, where like the U-Multirank system, the user will be able to customize the results according to six dimensions and sub-dimensions thereof (van Vught et al, 2010). As this system goes into practice, there is an opportunity to change the playing field; however, that requires that universities accept the idea that there are multiple ideal types. Currently, as we have seen, the EGM or World-Class, type is dominant, yet very few institutions in a system can hope to achieve it. Will the U-Map project open up space for a European ideal type?

Excellence, relevance and critical mass are key criteria in both project based and performance based funding. Research funding on the European level takes a variety of forms. The most prominent of those are the Framework projects, which Banchoff (2002) argues have become powerful institutions in themselves. The largest share of funds in the Seventh Framework Program (FP7) are distributed on a project basis within the "cooperation" category. The projects in this area address the set of research priorities determined by the Commission which are focused on grand social and technical problems (energy, health, etc.). There are three smaller categories in the seventh framework: ideas, people, and capacities. These are focused respectively on funding frontier research, funding individual researchers and developing support systems and infrastructures. FP7 will be succeeded in 2014 by the

Horizon 2020 project, which is the eighth framework project which the EU has undertaken to support research and will run from 2014-2020. The major change in Horizon 2020, is that it will bring together under a single framework the categories of FP7 with the innovation-related parts of the Competiveness and Innovation Program (CIP) and the European Institute of Technology and Innovation (EIT). While the details are still being finalized, it seems that at least from the outset the same instruments, categories, and very similar research priorities will be funded through the same institutional structures.

An examination of the policy development process for Horizon 2020 illustrates the breadth and depth of policy input which occurs on the EU level. In addition to the national actors, European networks, national associations, and individuals from a variety of subnational organizations have been actively providing input into the design of the Horizon framework. The public consultation on the green paper *From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding* elicited 775 position papers and over 1300 online questionnaire responses coming from research and higher education, industry, government and associations and interest groups. European actors are responsible for about 14% of the responses to the green paper (European Commission 2011h). The responses are spread out amongst all EU member states. Nearly all the national governments have submitted position papers with the exception of Latvia, but at the subnational level there are fewer examples of industry and university participation coming from the newer member states. States with the highest absolute number of inputs are Germany and the UK. Most countries of Western Europe also have significant participation from a broad range of actors, including industry associations, companies, research councils, and individual universities (European Commission n.d.).

Networks of research councils and universities have both taken active roles. Nordforsk, as mentioned earlier, submitted a written position paper on the EU green paper of 2011. The

ESF did not submit a position as a unified organization; however, three of its five standing committees did as did most all of its members on an individual national basis. LERU has published a number of papers on the Horizon 2020 framework. To cover all of their positions is beyond the scope of this chapter, but there are several with direct relevance. LERU argues that the criteria upon which projects are funded should be based solely on excellence. Excellence is a slippery term to define but also one of those "I know it when I see it" judgment type concepts; most peer review rests on the assumption that a person who is considered an expert in a given disciplinary area is able to make that sort of judgment. When excellence is used in the context of funding criteria, it is usually to differentiate it from the idea of equity, which is more easily defined, in this case, as providing funding "juste retour" to the EU member states for their research activities. A focus on excellence without any territorial equity would of course create a disbalance between the research funding levels between nations, favoring the more prestigious universities in Northern and Western Europe at the expense of those in Southern and Central-Eastern Europe. From the perspective of competitiveness, it makes sense to fund only the strongest performers. This is the model that many states are moving towards. There are well known examples in Germany, France and the UK, but also more in the more egalitarian Sweden. On the other hand, a disbalance in distribution risks creating a structural divide in research capabilities across Europe. This concern is recognized and the policy suggestions include a note suggesting that developmental sorts of funds come from some other source, but where that would be remains unclear.

Another LERU theme is creating a more trust based system for funding research. This cuts against societal trends and what Michael Power (1997) calls the audit society. The increasing calls for and active use of the term accountability, which we see in neo-liberal policy construction, and find nearly every time the EU policy discourse addresses freedom or

autonomy, portends a move towards more audits rather than more trust. The policy debate over Horizon 2020 provides an important test as to whether the balance between trust and audit in society is an ongoing political debate which can sway back and forth, or whether it is essentially on a one-way street towards an audit society, in which increasing trust is politically unfeasible. Increasing trust would mean a simplification of the oversight system, and LERU has published a position paper which demonstrates several European countries have alternative systems which are based on a more open and trustful environment (van Dijk, H. 2011).

LERU puts a high value on basic research and expresses strong support for the European Research Council (ERC), which began under the FP7 and represents the "ideas" category of research funding. The ERC was established to fund what it has termed frontier research, that is, research which is more risky that what might otherwise be funded under the collaboration projects and which is bottom-up in that it is determined by researchers not by a predetermined set of priorities. This sort of research also promises to be the type that brings major paradigm change rather than incremental improvement. The model for collaboration projects, which includes peer review and predetermined outputs, is inherently conservative and encourages researchers to submit projects which they know that they can deliver on. As the consequences for not doing so, are likely the inability to obtain future funding, there are logical reasons behind this behavior.

The ERC funding has been extremely popular with researchers and has produced strong results. The Horizon 2020 project's preliminary financial breakdowns propose a large increase in funding for the ERC. The ERC funds research solely based on excellence and thus gives us some insight into how an excellence only based system distributes funds across nations and organizations. Helga Nowotny, president of the ERC, notes that as might be expected in a system which focuses on excellence, of the nearly 2600 grantees, about fifty

percent of the funding goes to researchers at 50 top universities, but also notes that the other half is spread quite broadly to those at approximately 450 institutions (Nowotny 2012). This suggests, that while focusing on a criterion of excellence does concentrate research funding, there is still a good deal of breadth which includes representation in the new central European members.

At the same time that the EU has determined its priorities for research in the FP7 and Horizon 2020 programs, it has also encouraged member states to create their own national priorities for research. It uses the OMC to encourage this, but its funding programs may prove to be a more effective incentive to encourage national research to follow the contours of EU funded research. In the Czech Republic's priorities, we can see the state's rationale behind using a system of strategic selection for funding research units:

> In most fields of applied research, the concentration of human, financial and other resources is needed to achieve more pronounced progress. Applied research covering the full range of disciplines can only be afforded by large, economically developed countries. In small and medium-sized countries, the priorities of applied research are set out in policy documents. (Council for Research 2009b: 38)

A footnote which is found after the first sentence of the above quotation is perhaps even more revealing. It states: "*Foreign policy documents* on R&D indicate the need to create a *critical mass* of resources" [emphasis added] (Council for Research 2009: 38). Here we can see both the influence of foreign policy documents, the EU and OECD most likely though not explicitly named, and the need for critical mass. The size and investment needs for "big science" can exceed state budgets. The idea of bringing research together under EU funding schemes, particularly with regard to the creation of larger infrastructures for research is clearly an area which suits the role of the EU. The suggestion of prioritizing research areas is welcome by the smaller Czech state in the interest of spending its research money effectively; however, effective spending is an idea open to broad debate. It should be noted that the

research priorities apply only to applied research not basic research. The Czech report clearly states this distinction, suggesting that basic research should be determined by academics, not others. However, the trend towards mode two (applied and strategic) research rather than mode one (basic) research, means that over time more and more funds will shift towards the former which is under the scheme of national priorities. The report identifies eight applied research priorities; each of which can be fit into one or more of the ten categories of the EU's Seventh Framework Program. In this way, the Czech Research priorities, allow access to funds from nine of the ten categories in the Seventh Framework. In this regard, the EU is clearly highly influential in shaping Czech research policy.

3.5. Conclusion

The EU, by adopting the knowledge economy discourse, has been able to involve itself in the higher education sector much more deeply than in the past. External trends, most notably globalization and neo-liberal conceptions of public management have created a key role for the EU in this sector. At the same time that the EU has attempted to influence national policies, it has worked to strengthen the subnational level and to create direct ties to its actors (universities and researchers) by establishing both financial and informational tools.

While the individual policies that the EU is promoting are not unique in the international environment, the EU's ability to actively steer research in both a coordination and institution building mode is not found in other supranational actors. Although it does use the OMC, the challenges of university-based research policy also display the limits of this form of governance tool. Voluntary policy coordination which follows an intergovernmental vein has not succeeded in increasing the level of funding and seriousness of purpose in improving research across the EU as seen through the significant funding level differences across the member states. Only two countries have met the target agreed to in the early aughts. Funding

level harmonization provides a most-likely test case for policy harmonization as it does not venture into the controversial areas of national structures and criteria for conducting and funding research. It does not specify priorities, nor does it evoke the ambiguous terms of relevance or quality. It stays on the simple common ground of budget allocation and in that way sidesteps many of the contentious nationalistic issues of higher education and research policy. Yet, even so, it fails to create common agreement across the 27 countries. Admittedly the current economic and political climate is not supportive of budget increases, and austerity measures, brought about in some countries by the EU, even prevent such changes. However, the 3% target has been in place since well before the financial crisis, so we cannot entirely attribute the cause of failure to that. In fact, if countries believed the rhetoric that research drives economic growth, then we should expect to find countries attempting to increase research levels as a means of extracting themselves from the crisis. Instead we find government cuts and universities struggling to maintain their funding levels. Clearly there is a disconnect somewhere between even the basic claim of the university as an economic driver and the policymakers' beliefs.

By simultaneously pursuing institution building activities and encouraging transnational networks by providing them access to the policy process, the EU has demonstrated the need to go beyond coordination to affect policy change. The combined effect both coordination and institution building provides more powerful steering than either could provide alone. We see this in the framework projects whose priorities have helped shape national research priorities. The ERA with its discussion of knowledge as a fifth freedom introduces the possibility that the EU could seek to influence research and universities more directly should its soft power efforts through the OMC and ERA not provide the hoped for results.

Much of the discussion in research policy is about isomorphism, or the way in which policies and actors become increasingly alike. The new public management type of tools and

measurement techniques promoted by the EU encourage homogeneity. However, the EU appears to recognize that despite efforts to coordinate and harmonize, it is also important to promote diversity. This diversity may be the result of path dependencies in national systems of state-university dynamics which the EU has no control over, but it is also actively promoted in the EU supported projects for horizontal and vertical differentiation. If we accept that the university-based research environment is a complex system, that is, one which involves interdependent, diverse entities that adapt, then support for diversity is likely to bring about positive benefits. Complex systems are robust and produce emergent phenomena, two things that are sought after in research. The current trends in EU policymaking are ambiguous, there is support for autonomy, multiple archetypes, and complexity, but simultaneously there are forces encouraging homogeneity as well as ideas of creation and destruction which may not fully suit the university environment and should be carefully monitored.

CHAPTER 4.

HORIZON 2020 AND EUROPEAN GOVERNANCE NARRATIVES[2]

4.1. Introduction

For nearly 30 years, beginning in 1984 with the first framework programme and continuing through 2013 with the end of the 7th Framework Programme (FP7), the framework programmes have been called simply by their sequential number; however, for what would otherwise have been called the 8th Framework Programme, the European Union (EU) has chosen a unique name: Horizon 2020. An explanation for this is given in a speech by the Commissioner for Research: "We want the CSF [Common Strategic Framework] to mark a clear departure from business as usual. We are not simply moving from the 7th to the 8th Framework Programme. And what better way to demonstrate this shift than with a new name?" (Geoghegan-Quinn 2011). This assertion needs more careful analysis. Given that the framework programmes are often considered to be one of the more successful activities of the EU, why is there a perceived need for a major break? This chapter uses the concept of public policy narratives to examine how and why there has been a shift between FP7 and Horizon 2020, and what implications that has for the European integration project. The concept of policy narratives allows us to characterize this shift as the result of an increased presence of the New Public Management (NPM) narrative within the framework programmes discourse. The subsequent policy solutions and tools affecting distributive justice, governance steering techniques, and evaluation of results are reshaped as a consequence of the ideas embedded in and legitimized by this narrative. Looking individually at the EU member states, we find a diverse landscape of research policies that have undergone significant changes in the period

[2] Young, M. (2015). Shifting Policy Narratives in Horizon 2020, *Journal of Contemporary European Research*, 11 (1): 16-30.

since the first framework programme. Past studies have shown a wide range of steering mechanisms that shape research on a national level, which can be attributed to the acceptance of different narratives, path dependencies, and localized reform trajectories (Ferlie, Musselin & Andresani 2008; Paradeise et al. 2009; Kogan et al. 2006; Amaral, Jones & Karseth 2002). Less attention has been paid to the steering mechanisms and policy narratives at work on the European level.

The framework programmes are by definition funding distribution mechanisms; they set the rules and priorities for how the block of funds that the EU dedicates towards research is to be allocated. This chapter argues, however, that the framework programmes have taken on regulatory and discursive functions going beyond their distributive role and can therefore also provide insight into more general policy change. This was not the case for the early framework programmes, which were more narrowly focused on strengthening industry competitiveness particularly *vis-à-vis* the gap between Europe, the USA and Japan, and did not directly incorporate discussions of distributive justice or quality management. Over time the framework programmes have evolved significantly in their rationale, structure and tools (for a history of these changes, see Guzzetti 1995; Barker and Cameron 2004; Sanz and Borras 2001; Banchoff 2002). By the 6th Framework Programme they have become deeply institutionalized, so much so that Thomas Banchoff (2002) argues that they have actually inhibited the broader efforts at European research policy creation, harmonization and consolidation. Horizon 2020 attempts to reverse that situation and aims to mobilize its strongly institutionalized power towards building the ERA. In order to succeed without resorting to hard law regulations or directives, which arguably might not be within the EU's purview, the programme needs to go beyond its formal role as a funding mechanism in order to (in the words of the EU) strengthen "coordinating efforts across the Union" (European

Union 2013: 109) and be a "vehicle for leveraging […] investment" (European Union 2013: 110).

Decisions over how to distribute funding presuppose political framing and ideas that are related to different public management narratives. This study uses an analytical framework with three types of public management narrative to examine the shift in public management narrative. The chapter begins by laying out the typology of public management narratives and identifying research policy expectations for each type. It then uses this framework to examine the overall discourse of Horizon 2020 through a number of internal and external changes in policy ideas, solutions, and the political-economic environment. The analysis continues with a case study on the concept of excellence and its role in issues of distributive justice and quality management. Recognizing the strength and influence of the different types of public management narratives that are used in the discourse of the framework programmes provides insight into what sort of outputs and outcomes are likely to result from those programmes not only in terms of scientific results, but also in terms of the geography of the Europe of Knowledge. The chapter concludes by addressing the implications of a shift in public management discourse on European integration by linking it to the concept of differentiated integration. Will the European Research Area become an exclusive space dominated by a small set of leading research countries and institutions in which research is concentrated or will it be a broadly inclusive and densely networked space? Put in terms of the concept of differentiated integration (Stubb 1996; Avbelj 2012; Leuffen 2013): are we developing a two-speed Europe in research?

4.2. Theory and methodology

In order to analyse the public management narrative, this chapter employs a variation on a tripartite ideal-type model developed by Ewan Ferlie, Christine Musselin and Gianluca

Andresani (2008). Their paper sought to broaden the academic discussion on higher education policy by bringing in more traditional political science and public management theories and concepts (see Pollitt and Bouckart 2011) to an area that was largely dominated by theories of university-state dynamics (based on Clark 1983; see Dobbins 2011). For this purpose, it introduced a framework of ideal-type narratives that underlie public management reform: New Public Management, Network Governance (NG), and Neo-Weberian Bureaucracy (NWB). For this chapter, their framework has been adapted to the supranational level, focused on the particularities of research policy and used to evaluate various elements of the Horizon 2020 policy discourse. The framework programmes incorporate a significant number of different policy instruments (i.e. Societal Challenges, European Research Council, European Institute of Technology, ERA-NETS, Marie Curie actions, etc.) and given the limited space available, this analysis will not attempt to address those tools individually. Instead, the focus will be on the overall programme, the discourse surrounding its development, and the way it incorporates the concept of excellence which has become one of the key concepts for understanding European research policy (Enders and DeBoer 2009; Radosevic and Lepori 2009).

The analysis is conducted primarily through EU policy documents at three stages of development: early 2011 documents around the green paper and consultation process in which the programme began to take shape, later documentation from the end of 2011 in which the initial policy proposal and impact assessment documents were put forward by the Commission, and the final regulation of 2013 establishing Horizon 2020. Reports by expert groups were reviewed and an interview was conducted with an EU official in Directorate General (DG) Research who was involved with the public consultation process and development of Horizon 2020. Equivalent documents were examined for FP7. The focus in analysing these documents was on their conceptualization and presentation of the problems

which European research faced and the general objectives and tools by which they proposed to solve them. The research also examined the position papers submitted in the public participation process seeking insight into how national policymakers and a broader set of stakeholders viewed these issues. All the national government contributions to the green paper process were reviewed, as well as all the documents submitted from the new member states, i.e. those joining in 2004 and later. From the older member states, documents were reviewed from a selection of different countries (United Kingdom, Sweden, Germany, France, Ireland, Spain) with the aim of balancing research leaders and followers as well as countries that had followed different path trajectories (European Commission 2013a; Paradeise et al. 2009). The analysis focused on answers to the green paper questions that were related to the way framework programme funding should be allocated and the measures of success and quality.

Public management narratives provide a way to conceptualize a broad public management story that incorporates technical, political and normative elements (Ferlie et al. 2008). Note that these narratives should not be understood as overarching blueprints by which policy is linearly conceived, constructed and then implemented; any expectation of finding this would be misguided and a number of studies demonstrate quite clearly that this is not present on a national level in Europe (Paradeise 2009; Pollitt, van Thiel & Homburg 2007) and is thus unlikely to be found in the EU. This does not imply that, however, these narratives cannot be found exerting strong influence on the overall policy outcome, particularly by incorporating fragmented elements, ideas, and tools that are deeply rooted in particular policy narratives. Christopher Pollitt (2007) shows that this has happened in Europe with NPM.

The first ideal-type narrative, New Public Management, can be characterized as making public administration function more like business administration. More specifically, it embodies two principles that Christopher Hood (1991) calls the “freedom to manage” and the

"freedom to compete". The freedom to manage brings corporate management practices into public administration, the central purpose of which is to gain more control over the production of public services. A variety of mechanisms can be used to achieve this: indirect steering through the setting of goals, objectives and targets, coupled with monitoring of how effectively those are met which creates a strong audit culture (Power 1997); the use of contracts and principle-agent models to structure relationships; as well as directly borrowing specific practices from business, such as total quality management. The freedom to compete posits the idea that competition is the driver of effective governance. Steering systems are thus constructed in ways that enhance competition, or in cases where there is none, make it possible. This can require the disaggregation of the public sector into smaller entities that are able to compete with one another, and, further, to establish a quasimarket if there is not an existing economic market in which they can compete. These competitive entities must also have the ability and incentive to differentiate themselves, which requires the autonomy to determine strategies and make decisions. In sum, an NPM approach relies on strategic management within competitive markets as its primary mode of governance; steering is vertical but is done by setting targets, performance contracts, and stimulating or creating markets (see Table 1). Competition is the key facilitating mechanism, and NPM is most useful for achieving efficient results in situations where the desired outcomes are clearly quantifiable.

The second narrative, Network Governance, is derived from the concept of the "hollowed out state" (Rhodes 1997) that depicts the nation-state as having lost (or relinquished) power, functions and legitimacy to other actors, such as corporations or non-governmental organizations (NGOs), local and regional government, and supranational organizations. Supporting this concept is the idea that some problems can be better solved if they are addressed at different governance levels with a broader constellation of actors involved. The

theory of multi-level governance (Hooghe and Marks 2001; Piattoni 2010) provides a structure for analysing that differentiation by identifying three primary levels of governance and the interactions between them: subnational, national, and supranational, which includes the EU. The hollowing out of the national level results in strengthening both the subnational and supranational level and their interrelationship, while the state adjusts to serve as a facilitator rather than exerting direct power (Ferlie et al. 2008). This facilitation happens in and through networks that can be oriented towards different functions: policy creation, coordination, or implementation; and these networks can, but need not, be self-steering and/or self-organizing (Klijn 2008). In sum, an NG approach relies on (semi-)independent networks of stakeholders as the primary mode of governance; steering is horizontal and the government involvement is mainly through the establishment and setting of objectives for the network. Negotiation is the key facilitating mechanism, and NG is most useful for achieving coordination and cooperation in dealing with complexity and so-called wicked problems that laterally cross-political borders and policy-area delimitations.

The third narrative, Neo-Weberian Bureaucracy, is about the revitalization of a nevertheless traditional bureaucratic conception of public administration. In this narrative, the state is central. Whereas in the other two narratives it relinquishes power, because of its perceived inability to solve societal problems, NWB re-establishes the role of state administrative control and problem-solving through a democratically legitimated bureaucracy, but one which is modernized ("neo"). The modernization can be seen in a shift from an internal orientation on rules to a more external orientation on meeting societal needs. Further, it seeks to maintain its electorally established legitimacy through on-going interactions and consultations with the public. There is also a shift towards a more results oriented, professional managerial culture, which may overlap with the NPM narrative, but which differs in that the role of administrative law and process is the central mode of steering. In

sum, a NWB approach relies on bureaucracy and implementation as its primary mode of governance; steering is vertical and is done directly by creating rules, determining processes and spending. Planning is the key facilitating mechanism, and NWB is most useful for achieving a sense of legitimacy that preserves diversity and robustness and targets outcomes that are oriented towards greater societal needs.

Table 4.1. Key Elements in the Public Management Narratives

	New Public Management	***Network Governance***	***Neo-Weberian Bureaucracy***
Primary means of governance	Strategic management within competitive markets	Self-steering and organizing networks on multiple governance levels	State law and bureaucracy
Key facilitating mechanism	Competition	Negotiation	Planning (inclusive of stakeholders)
Steering	Vertical, indirect, government uses targets and performance contracts, creates and stimulates markets	Horizontal, indirect, government establishes and sets objectives	Vertical, direct, steering by creating rules, defining processes and spending
Strengths of the approach	Efficient results when outputs can be quantified	Coordination and cooperation in dealing with complex multi-level problems	Outcomes which are oriented towards social needs, maintain democratic legitimacy
Distribution mechanisms	Based on performance: past outputs, efficiency, potential	Determined through negotiation and compromise	Top down based on politically determined principles
How quality is maintained	Through explicit, quantifiable objectives and auditing systems	Through professional self-regulation and diffusion of good practices	Through rules and procedures determined *ex-ante*

In the case study on excellence we can see how the narratives play out in the area of resource allocation and quality. Funding distribution is a political decision and the public management narrative plays an important role in determining the legitimacy of various approaches. Each of the three ideal-type narratives provides a different perspective on how funds should be distributed. For an NPM narrative, funds should be distributed based on performance standards, which means that past results, preferably quantified and transparently measured ones, are the basis on which funds should be competitively apportioned. Also, preferably, the

distribution will take place through an agency, not directly by the government. The NG narrative not only puts this decision in the hands of the stakeholders but the process by which it happens is one in which compromise is sought through negotiation and cooperation. In the NWB narrative, the government retains the decision-making power, keeping the distribution decisions in a democratically representative body that will presumably act with broader social interests in mind. We may not find these ideal-types in pure form in practice, but even when distorted by politics, interests and lobbying, the basic driving forces behind them are discernible.

4.3. Horizon 2020: what sort of break?

As presented at the outset of this chapter, the Commissioner has claimed that Horizon 2020 represents a break with the past. The justification for calling Horizon 2020 a break may come from a number of internal changes to the new programme based on new policy ideas and proposed solutions. It also may come from external events, namely the crisis, which has impacted the political environment. On closer inspection, however, there are significant path dependencies and continuity with past policy. If the changes discussed below are constitutive of a break, then it would be more in their potential to disrupt past structures, rather than directly and immediately changing them. Change is rooted in their symbolic relationship to different policy narratives. This section looks at several areas where change that may appear superficial on the surface, can in fact suggest a larger shift in the underlying public management narrative.

4.3.1. Changes of an internal nature

First, Horizon 2020 has been expanded to cover the entire innovation cycle. All of the research and innovation activities that are directly implemented by the EU have been brought

together under one umbrella. In particular, Horizon 2020 incorporates the Competitiveness and Innovation Framework Programme (CIF) and the European Institute of Innovation and Technology (EIT) that had in the past been managed separately from the framework programmes. However, despite bringing a broader range of tools together, there is no comprehensive integration of these tools as might be suggested by the discussion on creating a unified funding programme for all aspects of the innovation process. That is, these tools can still be identified as distinct elements with histories. Rhetorically, the Commission may be moving away from a linear model of innovation and accepting an integrated (or chain-link) model of innovation, but in actuality the framework programme is still divided into three distinct pillars, each of which corresponds to a major stakeholder in research policy: government, industry, and universities/research organizations. This structure allows the government to use a top-down, NWB type governance method for choosing research priorities in the grand challenges section; the research community is able to use a bottom-up method for determining what to fund in the excellent science pillar which contains elements of both NG and NPM in its use of a broad spectrum of stakeholders at different governance levels, quantification of performance measures, and use of agencies; finally, the industrial leadership pillar allows for a mixture of tools, but with a strong focus on the applied and development aspects of innovation. There is thus both a top-down NWB approach to the selection of enabling and industrial technologies that will be funded and a push towards the use of public private partnerships and loan and equity-based market mechanisms that are popular NPM-type tools.

Second, Horizon 2020 is unified and simplified bureaucratically. It is a unified programme in the sense that there is a single set of rules for participation and dissemination for all types of participants. While this may be an administrative improvement, it is hard to see how it can be a break except perhaps in its symbolic unification of the participant types. The programme is

also simplified in terms of its administrative burden on participants, but this change comes with strings attached. In the public consultation and lead-up to Horizon 2020, there was a strong push to increase trust and to reduce the high levels of administrative oversight and bureaucratic requirements, which funding from past framework programmes had entailed. In the Horizon 2020 debate there were strong calls from the university and research community to introduce a system that would incorporate a higher degree of trust. In 2010 the *Trust Researchers Initiative* was launched: "The key message of this recent and bottom-up declaration is that funding of European research should be based on trust and responsible partnering. Research has to be funded according to the nature of research while at the same time ensuring an appropriate level of accountability" (Cordis 2010). The acceptance of more accountability as a prerequisite for more autonomy, as embodied in trust, is a sign of an audit culture that is deeply rooted in the NPM narrative (Power 1997). Trust in this manner becomes institutionalized in quantitative measures that are accessible to non-specialists, which can be observed in the expanding use of benchmarks, scoreboards, and quantifiable indicator-based objectives.

Third, Horizon 2020 has the objective of implementing the Innovation Union initiative. This can be understood to mean that it "reflects the ambition to deliver ideas, growth and jobs for the future" (European Commission 2011c: 2). While the Innovation Union is recent, the ideas and discourse behind it are a continuation of a line of thinking that began in the 1990s and are strongly rooted in the knowledge-based economy discourse that was popularized by the Organisation for Economic Co-operation and Development (OECD) (Godin 2006). The framework programmes have traditionally had a strong industry orientation; going back to the second framework programme, sixty per cent of the funding went to businesses (European Commission 2011e). However, we can see that the knowledge-based economy discourse is

changing over time and becoming more focused on outputs and the efficient promotion of breakthroughs that fall in line with an NPM model.

Fourth, in Horizon 2020 there is an emphasis on a less prescriptive approach to defining research topics. This is important in that it indicates a change in public management philosophy. It signals a move from a top-down prescriptive model in line with a NWB narrative to a more hands-off model where steering is done from a distance, which is in line with an NPM narrative in which more freedom is given to actors to make their own strategic decisions within a competitive context. Even in the broadly top-down grand challenges, whose topics are defined by the EU, there is an effort to be less prescriptive in predetermining how proposals for those funds should frame their research questions and methodologies.

4.3.2. Changes shaped by external influences

Whereas FP7 was developed in the optimistic climate of post-millennial globalization during the years 2004 to 2006, Horizon 2020 was developed in the shadow of the financial crisis in the years 2011 to 2013. Many of the key policy documents for Horizon 2020 were being discussed and drafted in parallel with new developments in the Eurozone crisis. Although these were under different Directorates General, the leadership and overall climate was deeply affected by the crisis that become the top priority for lawmakers on all levels. In November 2011, the Commission stated: "Since the launch of the Seventh Framework Programme (FP7), the economic context has changed dramatically...The key challenge is to stabilise the financial and economic system in the short term while also taking measures to create the economic opportunities of tomorrow" (European Commission 2011d: 1-2). In this section we will examine three ways in which the crisis influenced the development of

Horizon 2020: Increased fear over the future of Europe, support for austerity measures, and a growing acceptance of differentiation.

The political climate that accompanied the crisis included a fear that Europe's future – as a globally leading economy – was bleak. This thinking migrated into discussions about research policy as the Research Commissioner's foreword to the Innovation Union Competitiveness report states: "The main messages presented in the executive summary...confirm that Europe is in a state of 'Innovation emergency'" (European Commission 2011a: I). This so-called state of *emergency* is not referred to again after the bulk of the Eurozone crisis has passed. Concern over global competitiveness and the threat of emerging economies both broadly as well as narrowly in the university sector, however, continued to be an important political issue throughout Horizon 2020's development. Austerity became the preferred solution to the Eurozone crisis both at the national and European level. This concept was central to many countries' argumentation during 2013 when the budget for Horizon 2020 (as part of the larger multi-annual budget) was being negotiated. It became clear that some key member states would not accept an increase in the overall European budget (EurActiv 2013). The fact that Horizon 2020 has increased in overall funding from FP7 can be said to symbolize confidence in the importance of investing in research; on the other hand, the level of increased funding is still insufficient to stabilize the funding level from the final year of FP7. The first two years of Horizon 2020 together have 15 billion, whereas FP7 had over 8 billion in 2013 alone.

Finally, the discussion and growing acceptance of differentiated integration in Europe gained traction as part of the financial crisis. There are a wide range of ways to express this concept, and Dirk Leuffen (2013) shows how various actors from different political perspectives, such as David Cameron and Francois Hollande, have supported an idea of Europe in which the member states are not treated uniformly in regards to common policies. A broadly used

typology distinguishes three forms of differentiated integration: Multispeed, where there are initial differences but an expectation that over time countries will eventually integrate; variable geometry, where integrations occur outside of the common policies; and *à la carte*, where countries can decide to opt out of common policies (Stubb 1996). All three types of differentiated integration may be seen as sharing a common denominator, that is, "the situation in which, within the scope of EU competences, not all member states are subject to the same or uniform EU rules" (Avbelj 2012: 193). However, when we look at differentiation within research policy, the picture is more complex. First, most research policy is subject to soft law and Open Method of Coordination (OMC) governance mechanisms to which member states have agreed, but are not all meeting in practice. Countries are opting-in to the ideas and objectives of the Europe 2020 strategy through common soft law benchmarks, but opting-out in practice by not meeting those (European Commission 2013a). Second, the mode of differentiated integration arising from the framework programmes is caused by *being* subject to the same rules, but not having equal footing on which to compete. When unequal actors compete on equal terms, the result is often that research funds become concentrated in the smaller group of countries better equipped to compete from the outset. The EU refers to this problem as the "innovation divide" and has devoted resources towards solving it. However, the bulk of these resources come from the Cohesion Funds, which are outside the framework programmes and do not promote the international standards and benefits of cooperation the FPs bring. In the next section, we will see how public management narratives shape the understanding of excellence and affect the outcomes and differentiation in the EU.

4.4. Excellence and distributive mechanisms

Funding is essential to the conduct of research, yet it is a limited resource becoming increasingly scarce. Different fields and disciplines may require different amounts of funding

and investment in infrastructure, but all are faced with the same basic need. Without funding, research cannot be undertaken which makes the choice of distribution mechanism of critical importance, all the more so as the chances of becoming a recipient decline. FP7 represented about 10 per cent of the overall spending on research in Europe (European Commission 2011b) and unless there are unexpectedly rapid increases in member state spending, that level will be similar in Horizon 2020. However, competition for that funding is dramatically increasing; the Commission predicts that the success rate of applicants will drop from approximately 22 per cent in FP7 to about 15 per cent in Horizon 2020 (Greenhalgh 2014). This is based not only on the expectation of increased participation overall, but in particular more intensive business participation as well as the possibility that reduced spending on the national level caused by austerity budgets will encourage more applications.

Excellence is a term, which comes up repeatedly in the official documents for Horizon 2020 and the discourse surrounding its development; however, it is not clearly defined nor is it evident that the actors share a common understanding. This section will focus on how excellence is understood in Horizon 2020, not only by the EU by also by the member states. In the policy papers coming from the green paper process, nearly all participants use the term and claim to support excellence. But are they truly in agreement? What does excellence mean in an EU context and is that same definition shared among all actors? I argue that the term excellence is part of two distinct discourses and has varied meanings even within those. This ambiguity allows actors to project their own understanding of excellence onto the term even when it is being used in conflicting ways by other actors. Further, excellence is self-justifying. It is extremely difficult, if not impossible, to argue against excellence *per se*. The term excellence occurs in the discourses of distribution and quality. In a distributive sense, excellence is a term used politically to counter arguments for distributive justice. This is very often how it is used in the framework programme debates. As described by an EU official

who worked on Horizon 2020 in DG Research at the time: "If you hear us speak of excellence here in Brussels, then it is typically this opposition between what is pre-allocation of the structural funds, where we say up front that X million Euros will go to that and that country, and the absence of any *juste retour* or considerations like that in the framework programme; that is on a very general level what we mean by excellence".[3] In a political sense, it is the negative definition that predominates; the avoidance of redistribution systems that support the catching-up of weaker member states or *juste retour*.

In the quality discourse, the term excellence is used to describe the highest level of quality – in the evaluation or output results of research. Here, the EU has a different understanding of what is mean by the concept. According to the same Commission official: "For us generally, what excellence means is that we fund the best, whatever way you want to look at it...We won't make any balances in terms of geography or university versus industry and so on".[4] In this comment we see how the quality discourse actually connects back into the distributive discourse. However, the fundamental idea of "we fund the best" makes it clear that excellence in terms of quality is a relative, competitive concept. The criteria for the best may be set by different groups or specialists, and can vary across different instruments, but the point of excellence is finding and funding the best. The focus on the best can be found directly referred to throughout the Commission's proposals for Horizon 2020 as seen in the following examples. There is an overarching focus which refers to selecting proposals: "Union level intervention enables continent-wide competition to select *the best* proposals, thereby raising levels of excellence and providing visibility for leading research and innovation" (European Commission 2011f: 3). Here, we see the word used to reinforce the link between competition and excellence. But the best is not only used in reference to proposals, it also is used as a focus for many parts of the programme. There is the best

[3] Interview conducted in 2013 with an official in DG Research.
[4] Ibid.

science ("Europe has fallen behind in the race to produce *the very best* cutting-edge science", European Commission 2011f: 32), the best researchers and ideas ("The ERC was created to provide Europe's *best* researchers, both women and men, with the resources they need to allow them to compete better at global level...*The best* researchers and *the best* ideas compete against each other", European Commission 2011f: 33), the best infrastructures ("Union investments in ICT research infrastructures have provided European researchers with *the world's best* research networking and computing facilities", European Commission 2011f: 45), and the best scientists, here described in relation to the importance of major infrastructures ("They promote mobility of people and ideas, bring together *the best* scientists from across Europe and the world and enhance scientific education", European Commission 2011f: 38).

This raises a number of issues that deserve further research. First, while the EU wants to fund the best research, it can only logically fund the best proposals. To what extent are the best proposals representative of the best research? How confident can we be in *ex-ante* forecasting of research results? Or to state it another way, is it correct to assume that the best research comes from the best proposals? Given that many, if not most, of the rejected proposals are never undertaken, there is unfortunately a lack of comparative data by which to investigate this. Second, is the best always excellent? This is not likely a problem on the EU level, but especially in smaller member states, the best research in many areas may simply not meet qualitatively defined criteria of excellence. Third, the best is a singular term, which implies that there is only room for one research project in a given area. This fits well with the EU's desire to avoid waste, but does it fit well with finding solutions to research problems? We have already seen a move away from the term "best practice" in general parlance towards the more inclusive "good practice".

The EU's understanding of excellence in the quality discourse is what I call zero-sum excellence. Zero-sum excellence rests on the assumption that excellence is a limited resource decided by relative and competitive means. There can only be so much excellence, and as researchers improve, the excellence target moves with them. The logic here follows the logic of a ranking system, which is also how most of the funding instruments work: evaluation of proposals leads to a ranked list, for which a cut-off point is chosen. This methodology results in the best, i.e. the most highly ranked proposals are funded. It is also possible under this same conception to predetermine the excellence cut-off, for example by saying that it exists for results above a certain percentage level. This is also used by the EU, for example, in the way it identifies excellent publication results as those that are within the top 10 per cent of the most citied articles worldwide within their field (European Commission 2013b). This understanding of excellence corresponds well with an NPM narrative.

Table 4.2. A Typology of Excellence

		Type of Excellence	
		Threshold	***Zero-Sum***
Discourse	***Quality***	excellence means: of a predetermined standard	excellence means: the best
	Distributive	excellence coexists with other criteria	excellence is the sole criteria

There is a second understanding of excellence, which I call threshold excellence. It is based on the assumption that excellence is unlimited and is defined by its inherent quality rather than its relative position among its competitors. By this understanding, excellence could involve one hundred per cent of all the proposals provided they meet the quality standard that the judges define as excellent, or conversely, none of the proposals if they did not. This second type of excellence is a stable target, not a moving one and is compatible with distributive justice arguments. It allows us to recognize that multiple proposals may all be excellent, rather than trying to determine the most excellent projects as the first type

demands; and, further, funding decisions may legitimately include other factors once the excellence criteria has been met. This understanding of excellence is more attuned to the NG or NWB narratives, as it allows more planned and negotiated results within a less quantified and audit driven context.

An example of how these different meanings become intertwined and used in the policy discourse can be found in the way that the 12 countries, which joined the EU in 2004 and 2007 (hereafter EU-12), approached the Horizon 2020 programme. In February 2011, during the Hungarian presidency of the EU, they issued a joint position paper stating:

> Finally, the EU-12 MS underline that the principle of excellence should continue to be the cornerstone criterion for the next Framework Programme. Notwithstanding that, it should be stressed that the interim evaluation report of FP7 states that: 'Too narrow focus on research excellence can overshadow the benefits of full-scale involvement of EU12 in the FP and this should not be neglected'. In the design of the next FP other principles could be taken into account like inclusiveness, cost efficiency, relevance of research and contribution to growth and jobs (EU-12 2011: 2).

Here we see the requisite support for excellence but the main argument is for allowing other principles to be taken into account so as to enable a broader distribution of funds. This leads to an as yet unanswered question: What degree of concentration in research funding is optimal? Should research funds be concentrated in only a relatively small number of centres or should they be widely spread throughout Europe? And following from that, should "Europeanized research" be evidenced by high levels of mobility for researchers allowing broad access to these concentrated centres or by broadly spread funding supporting research in all member states? Which of these better serve the broader Lisbon and EU 2020 strategies' goals of a globally competitive Europe is unclear.

In its summary conclusion supporting the idea of excellence, the EU chose to use a quote from the Estonian position paper to highlight and reinforce its point. It is worth unpacking this short quotation and examining how the EU interprets and employs it. The Estonian

government states: "The excellence of projects should remain the primary criterion in the adoption of decisions on financing scientific research. All EU researchers should have the opportunity to reach excellence and compete for the best financing opportunities (Estonian government)" (European Commission 2011b). The first part of this quote clearly supports the concept of excellence, though not as the sole criterion, since it uses the word primary thus implying that there are others. Reading the second sentence suggests that we should characterize it as threshold excellence, compatible with what was stated in the EU-12 document. The idea of "the opportunity to reach excellence", rather than excellence per se, and the opportunity to "compete for the best financing", can also be interpreted in several ways. One view is that this should be possible within the framework programme, while the other is that these opportunities should come from outside of the framework programmes. This second interpretation is clearly the EU's preferred one. Here is the statement in the summary analysis of the green paper process for which the EU used the Estonian quote as support:

> There is a clear signal coming from the consultation that excellence needs to remain the key criterion for distributing EU research and innovation funding. Respondents stress that projects funded through the Common Strategic Framework need to continue to be selected on a competitive basis and through peer review. At the same time, respondents stress that the Structural Funds should be used to unlock the full research potential of Europe (European Commission 2011b: 11).

The segregation of the framework programme and the structural funds is the EU's preferred solution to the problem of excellence as conceived by the EU-12 member states. Later in the green paper evaluation this is addressed even more explicitly with the idea of a "stairway to excellence" (European Commission 2011b: 16) which is a mechanism to help low performing countries reach excellence and compete for framework funds, thus following a multispeed model of differentiated integration. However, the structural funds and national funding opportunities are relatively weak in terms of NG, and do not usually offer the same

international cooperative dimension as the framework programmes, which can leave researchers without the infrastructural support needed to achieve this leap. After debates in the European Parliament, a new tool, "Spreading Excellence and Widening Participation", was added to address this, though it still remains separate from the three main pillars.

4.5. Conclusion

The analysis in this chapter looked at how public management narrative is changing within the framework programmes. Although there is not a single public management narrative at work, but rather elements of all three major narratives, a trend can still be seen towards an increasing influence of the NPM narrative. This trend is particularly strong in the areas of competition, quality and output measurements, and distributive justice ideas. Being aware of the strengthened role of an NPM narrative in European research policy is important both in recognizing how this area is being steered and for anticipating potential problems.

The move towards a stronger NPM narrative unsurprisingly bolsters the step towards a more differentiated Europe of Knowledge based on competition and concentration of resources and rewards. This step appears to parallel what Robert Frank and Philip Cook (1995) describe as a winner-take-all market, which is one characterized by two primary features: rewards being given according to relative rather than absolute performance, and rewards being concentrated in a few top performers despite the differences between these performers and others being small. While the framework programmes fund many researchers, the countries in which they are based is more concentrated. The focus on excellence, coupled with decreasing odds of success, creates an iterative process of funding that further concentrates funding in the leading countries. It can be argued that there is nothing wrong with this; quite the opposite, it is important and necessary to create research-intensive regions that are concentrated in only a

small group of countries. The EU has, however, neither stated its intention to do this nor provided evidence that would justify that approach.

Frank and Cook describe several problems that winner-take-all markets are known to create: inefficiencies, overcrowding, and wasted investment in performance enhancement. Research policy is not yet a true winner-take-all market, but due to its tendency in that direction, examining these problems can serve to highlight some key issues that research policy should take into account. First, inefficiency is a top priority the EU is attempting to eliminate. Care should be taken in moving in a direction that could increase or exacerbate inefficiencies. Two, overcrowding is clearly not an issue. The EU repeatedly mentions the need to increase the numbers of researchers in Europe. However, if the EU wanted to use a winner-take-all market to achieve this, the rewards would likely need to be much higher. Finally, there is wasted investment in performance enhancement. Frank and Cook (1995: 130) refer to studies showing that up to one fourth of the potential reward is invested in performance enhancement, i.e. changes that are oriented towards increasing the likelihood of success. We are beginning to see significant investment from universities and other research organizations in administrative functions aimed at increasing the chance of obtaining EU funding.

Differentiation, as discussed earlier, comes in a variety of forms that may or may not incorporate expectations of an equally integrated end. European research policy also appears ambivalent about whether to strengthen its leading parts and allowing those to drive the overall competitiveness of the Union or to attempt to broadly improve research across all member states. In part, this may be a result of the paradox identified earlier in the discussion on the stairway to excellence. It appears that bringing low performing countries up to a common standard cannot be accomplished within an equal framework, but neither can it be done independent of one. This ambivalence is reflected in polices that attempt, in different ways, to address both sides; however, the increased influence of the NPM narrative raises the

threat of what might be termed *un-differentiated disintegration*, i.e. a passive process in which a common tool exacerbates already existing differences and leads to a less integrated Europe.

CHAPTER 5.

CZECH RESEARCH GOVERNANCE:

TRACING THE EVALUATION METHODOLOGY[5]

5.1. Introduction

The Czech Republic has developed what is arguably the most radical performance-based research evaluation system in Europe, the Evaluation Methodology (EM). Locally it is referred to as the "coffee grinder" after its ability to take research outputs from all disciplines and organizations (universities, academy of science and research institutes) and reduce them to a common numerical point system. This combination of a universal system that uses only one dimension of measurement and that is intended to be used to allocate all of the institutional funding for research on a yearly basis, has brought forth significant criticism. A recent international audit of the Czech Research system commissioned by the Ministry of Education called it "inappropriate" in regards to its intended objectives of improving the quality of research and "threatening" in regards to its potential to irreversibly deform the research environment (Arnold 2011: 5). However, the EM appears to have solid roots in broadly accepted values and principles which are supported by supranational organizations such as the OECD and the EU and are central elements in what is labeled New Public Management (NPM). This chapter aims to examine governance changes in Czech research policy, particularly the development of the EM, to see if they correspond with NPM discourse, and further, to explore how such a problematic tool developed. Is the EM is a model NPM-type policy instrument or some sort of a perversion?

[5] Young, M. (2014), 'Coarsely Ground: Developing the Czech System of Research Evaluation', in J. Brankovic, M. Klemencic, P., Lazetic, and P. Zgaga (eds.), *Global Challenges, Local Responses in Higher Education. The contemporary issues in national and comparative perspective,* Rotterdam: Sense publishers, pp. 15-33.

5.2. The role of NPM in university-based research policy

Despite recent claims that NPM is finished (Dunleavy et al 2006) or that we are now in a post-NPM period (Christensen and Laegreid 2007), there is still ample evidence of NPM reforms occurring in the research policy area. This is perhaps because research policy, like much of higher education policy, didn't become a central focus of policymakers until the late 1990's. It may also be that this is part of the general trajectory of NPM reforms, which show a tendency to move from one area of the state administration to the next, following the basic template of a "solution looking for a problem". However, neither by itself is a fully satisfying argument. I will argue that there are strong forces shaping the discourse on research and higher education at both a national and supranational level, which have brought research policy into the NPM fold, and which have shaped the problem definition in a way that leads to NPM-type policy solutions.

The conceptual understanding of the university's role in contemporary society is undergoing dramatic change driven by an underlying shift in the way in which countries compete in a globalized world. Economic competitiveness has become the primary mode of measuring competition between nations, and the university is being re-evaluated and re-envisioned in light of this. The university is recast in a way that emphasizes its role as a knowledge creator and disseminator that plays a central part in national innovation systems and hence directly supports economic development. The concept of the knowledge economy has been fully embraced by the European Union and with the establishment of the Lisbon strategy in the early 2000s, the EU has acted through both policy and institutional means to promote reform in the university sector.

The strong promotion of the knowledge economy narrative as a key driver of national economic competitiveness, has meant that the basic societal contract with the university is

being rewritten. Universities are no longer being treated as a special type of institution, but are being seen as generic public institutions that can and as the logic goes, should, be treated in the same way as any other public service (Christensen 2011). When we bring together these two lines of argument, the idea that universities' main role is to support economic competitiveness, and the belief that they should be treated as any other part of the state apparatus, we find fertile ground for NPM reforms.

NPM is a difficult concept to pin down with precision (Dunleavy 2006). The term itself appears in the early 1990's as way to make sense of policy reforms that began in the 1980's and which continued to develop and expand over time. The result is that there are a wide range of often disparate tools and policy reforms that are characterized as NPM. We also find a debate over what in fact NPM actually is: a philosophy, a policy, a narrative, a reform movement, a discourse, or a set of tools. The identification of NPM reforms thus follows more of a family resemblance model, in other words, by drawing on a significant subset of generally agreed upon elements, the reform becomes recognizable as NPM. A very broad definition of NPM comes from the OECD document *Governance in Transition* (1995): "A new paradigm for public management has emerged, aimed at fostering a performance-oriented culture in a less centralised public sector" (OECD 1995: 8). This definition highlights the key elements of what is generally understood to be constituent of NPM, performance-orientation and decentralization. The term paradigm is also worth noting as it suggests that NPM is an archetype or worldview rather than a policy alternative. These two basic elements listed by the OECD can be further unpacked. Christopher Hood in his seminal 1991 article *A Public Management for All Seasons?* defines NPM as a doctrine for public administration and identifies seven overlapping components (see table 1). As explained above, it should be noted that for Hood these seven components are not necessarily found in equal measure in each reform, nor must all of them be present at once. A more recent

definition by Pollitt and Bouckaert (2011) sees NPM as a two-level concept that in addition to being a general theory or doctrine, can be understood "a bundle of specific concepts and practices" (Pollitt and Bouckaert 2011: 10). These are listed in Table 1.

Table 5.1. The two streams of NPM elements

	Managerial Theory	***Liberal Economics***
OECD	Performance-oriented	Less centralized
Hood	"Free to manage"	"Free to choose"
	"Hands-on professional management" in the public sector; Explicit standards and measures of performance; Greater emphasis on output controls; Stress on private-sector styles of management practice	Shift to disaggregation of units in the public sector; Shift to greater competition in public sector; Stress on greater discipline and parsimony in resource use
Pollitt and Bouckaert	Greater emphasis on "performance", especially the measurement of outputs; An emphasis on treating service users as "customers" and on the application of generic quality improvement techniques such as Total Quality Management	A preference for lean, flat, small, specialized (disaggregated) organization forms over large, multi-functional forms; A widespread substitution of contracts for hierarchical relations as the principle coordinating device; A widespread injection of market-type mechanisms including competitive tendering, public sector league tables, and performance-related pay

Hood (1991: 5) argues that the sources of NPM come from two quite distinct disciplinary streams, a "marriage of opposites", which brings together liberal economics with managerial theory. Hood characterizes this as a difference between "free to choose", with its implications of promoting competition between more autonomous and responsible actors and "free to manage", with its ideas of performance management and control. While this hybrid may seem commonplace in today's world and while the values and interests of the two areas may dovetail in many situations, there is also an inherent tension between the two streams. Table 1

separates the elements of the above mentioned definitions according to which stream they fall under.

A less often cited section of Hood's article is the one which connects NPM ideas with administrative-cultural values. Hood identifies three major cultural value types: sigma-type, "keep it lean and purposeful", theta-type, "keep it honest and fair", and lambda-type, "keep it robust and resilient" (Hood 1991: 11). He hypothesizes that it is possible to satisfy two of these three sets of values, but it is unlikely that any given policy solution can satisfy all three. He argues that NPM is predominantly rooted in sigma-type values, where the standard of success is frugality in an output controlled system, and that theta-type values are implied as NPM "assumes a culture of public service honesty as given (p.16)". Further, the theta-type values could also be supported in terms of the arguably non-discriminatory nature of markets. If his hypothesis that only two value sets can be satisfied is correct, it would suggest that the lambda-type values will not be satisfied by NPM tools. Those lambda-type values of diversity, resilience, reliability, and robustness are oriented towards emergent goals and are nevertheless extremely important for a research system seeking to create a stable platform for scientific progress and innovation, objectives which are not prone to predictability.

How can NPM be recognized in research policy? I will begin with a sub-question: is there a relationship between NPM and the power dynamics between the university and the state? The area of university dynamics has been well mapped. Burton Clark's (1983) seminal publication laid out a typology with three basic relationship models upon which most of the later research has developed: state control, academic oligarchy, and market. Subsequent works contain slight variations, but the essential elements are consistent and transparent across the newer theories (Gornitzka and Maassen 2000, Maassen and Olsen 2007, Dobbins 2009). For the purpose of examining these dynamics within the context of NPM, a variant developed by de Boer, Enders and Schimank (2007) is used in this chapter. It identifies five

dimensions of governance that shape the university-state relationship and that in certain patterns are indicative of NPM-type reform. These five dimensions are not meant to be mutually exclusive, quite the opposite: the authors claim that they are often all present to varying degrees. The government can increase and decrease each of the five dimensions semi-independently as you might turn the dials on an equalizer (de Boer, Enders and Schimank 2007).

The five dimensions are: state regulation, managerial self-governance, academic self governance, stakeholder guidance, and competition. *State regulation* refers to direct influence exerted by the state over the university in all areas. This corresponds directly to Clark's state control model, and can be seen clearly in terms of a lack of formal autonomy for the university to set its human resources policies, control its real estate, determine student numbers, etc. Each of these areas is managed by the state. Managerial self-governance and academic self-governance refer to the other two points on Clark's triangle. *Managerial self-governance* fits into the entrepreneurial or market based model of the university. This model suggests that universities should run like businesses and that they need professional management in order to run effectively. Managerial self-governance gives the university autonomy to make its own decisions, but these decisions are made by a powerful administration staffed by professional managers. This is directly opposed to the *academic self-governance* model, which describes the classic collegial model of university in which the faculty makes all the major decisions. The states' role in this model is often seen as protecting the university from outside interference so as to allow academics the freedom to pursue their research and teaching agendas without manipulation. While the first three dimensions are focused on the management of the university and who holds the power to make strategic decisions, the final two dimensions look at the formal inclusion of influence from external forces which have been given the ability to shape the university. *Stakeholder*

guidance refers to external groups or institutions which have a role in university governance. The stakeholders can be industry representatives which play an increasing role on university boards, as well as other organizations which represent the social interests of society and correspond to what is referred to as the third mission of the university. The state can also be a stakeholder in a system where formal autonomy has been given to the university and the state is no longer directly involved in its management. The fifth and final dimension, *competition*, refers to the overall environment in which the university acts. Competition in the university sector typically revolves around money, personnel, students, and prestige. These markets do not necessarily act as financial markets, but often as quasimarkets where citations, recognition, and influence play a higher role than finances. Competition can be seen at both a national and a global level, and becomes explicit in the search for both funding and prestige, through league tables and global rankings systems, as can be demonstrated through the remarkably rapid rise of the global rankings systems since 2003.

The authors argue that each of these five dimensions can be turned up or down like the dial of an equalizer. By looking at the configuration of all five dials, we can identify certain patterns which reflect different types of public administration systems. When there are reductions in state regulation and academic self-governance and increases in stakeholder guidance, managerial self-governance, and competition we are likely to find NPM-type governance.

5.3. University dynamics in the Czech Republic

In the past two decades, the Czech Republic has undergone dramatic reforms which generally been driven by transition politics and the entry to the EU. While that change has been incremental and piecemeal (Verheijen 2003, Bouckaert et al 2011) rather than following a deliberate and explicit NPM agenda, nevertheless new policies are influenced and borrowed from countries which are following NPM reform agendas. Therefore, we can identify specific

policies in the Czech Republic as NPM-type in hindsight, without insisting that they were initiated with NPM as an explicit agenda or part of a overall administrative reform.

In the area of higher education and research policy, is there evidence of NPM-type reform in the Czech Republic? Using the metaphor of the equalizer: where are the dials set in the Czech Republic with regards to university dynamics and how have they been adjusted over the past 20 years? Since the fall of communism in 1989 we find a clear move away from the state regulation model in the Czech Republic, as was also the case in most of the formerly communist countries (Dobbins and Knill 2009). The role of students in the "velvet revolution", the overarching value of freedom, and abuses of the communist years in using the university system for ideological indoctrination and screening, deeply affected the 1990 higher education act. This first major post-communist reform of the university sector resulted in a system characterized by extremely high levels of autonomy through academic self governance. It ended the state's central control over universities and established institutional autonomy under the model of a "representative democracy" (Pabian 2009). The institutional autonomy covered staff recruitment, establishment of study programs, enrollment numbers, conditions of access, and as of 1992, budgetary autonomy with the establishment of formula based lump-sum funding rather than line-item funding. The reform also strengthened the academic senate and the individual faculties at the expense of the rector and the university's central administration as a whole. The level of autonomy in Czech universities was arguably the highest in Europe (Pabian 2009), but in terms of the dials, it was not a NPM type system. Although the state control dial was turned way down, in its place the academic self-governance was turned up, but the other three dials were not turned on at all.

With the second major post communist reform of the higher education act in 1998, those dials get turned, even if only slightly. The major thrust of the 1998 act was to promote quality assurance, and it required that all programs be accredited by the newly formed accreditation

commission. Quality assurance had previously been solely within the purview of the university itself. The act's other major change was to allow for the accreditation of private institutions. Further changes were more minor, but are ones that concern NPM. The act strengthened the university vis-à-vis the faculties, which were no longer given the status of a legal entity, a turn of the managerial self-governance dial. Also boards of trustees were created, with members appointed by the minster. Though the boards had few real powers, they did have a role in any capital expenses or real estate dealings and were able to review and comment on strategic plans and the direction of the institution. Primarily though, they were to be appointed "with the view of associating representatives of public life, municipality as well as state administration (Government 1998, Article 14.1)" with the university. In other words, they turned on the stakeholder dial.

The third period of reform witnesses a split between the education and research areas in terms of policy activity. A third major higher education act has been under discussion, but has been repeatedly delayed due to protests and government turnover. The key issues in that proposal have to do with student funding, and the possible introduction of tuition fees. In the area of research policy, however, reform has gone forward with an act passed in 2008. The reform act of 2008 defines it primary vision in this way: "To create an innovative environment through reforming the system of research, development and innovation in the Czech Republic in order to be held true that 'Science makes knowledge from money, innovation makes money from knowledge'" (Government 2008: 1). The embedded quote comes from the 2007 comparative analysis of Czech research report, where it serves as the "motto" which introduces the preface signed by the Prime Minister and head of the Council for Research, Development and Innovation, Miroslav Topolanek of the center-right ODS party (Research and Development Council 2007b). The role of these yearly analyses will be examined in the following section of this chapter. For now we can note from the quotation above that the

prime minister is clearly attuned to the conceptualization of the university as an economic driver within a global arena. Money, or less crudely, economic gain or competitiveness, is the central issue. More specifically the reform identifies seven main objectives which correspond with many of the NPM elements and EU policy recommendations.

The 2008 reform (Government 2008) builds on the government resolution which established the Evaluation Methodology in 2004 and subsequent comparative analyses of Czech and international research results, particularly the 2007 analysis mentioned above. The reform addresses both institutional research funding, which it proposes to move entirely to a performance based model, based on data from the EM, and targeted research funding, which it proposes to simplify into two central bodies: the Grant Agency of the Czech Republic which is focused on basic research and the Technological Agency of the Czech Republic which will fund applied research. There are a few additional sources of funds for which exceptions are allowed, but the basic principle is to allocate virtually all the institutional funding ex-post as determined by the EM and all the ex-ante project type funding through these two bodies. The support of excellence in research is to be achieved through the establishment of centers of excellence, and also to the use of the ex-post evaluation of research results for the purpose of funding. Simply put, it seeks to realign the Evaluation Methodology as a performance based funding system.

There are also efforts in the 2008 reform to connect universities more closely with industrial research by externalizing research funding to independent bodies, comprised of academic, industry, and state representatives which allocate funds on a competitive basis. These can be interpreted as increases in the stakeholder and competitiveness dials.

NPM reform is a process and over the three periods of Czech research policy development we can find reforms that emerge from the two root sources of NPM reforms, the managerial

and the economic, as well as conforming to the expected pattern of increases and decreases on the governance equalizer. The EM, with its emphasis on performance and measurement of outputs but simultaneously displaying a quasimarket like approach, brings together both the "free to manage" and the "free to choose" aspects of policy. The following section will analyze its development more systematically.

5.4. The development of the Evaluation Methodology

The “coffee grinder” or Evaluation Methodology (EM) system for evaluating research results was first implemented in 2004. Each year, the EM has been revisited and adjusted; the accumulation of those changes has led to the current version of the EM which is highly controversial. To quote the European experts who were invited by the Ministry of Education to conduct an audit of the Czech research system in 2011: “Our conclusion is that the existing Evaluation Methodology is inappropriate for both the evaluation of research quality and the allocation of institutional funding. For this reason, we recommend discontinuing it" (Arnold 2011: 5).

The EM did not start out as a particularly radical tool, but over time developed into one. At what point in time did this happen? Was it influenced by debates that were going on in other European countries over how to improve research results?

The research reform agenda in the Czech Republic is rooted in problems which have been demonstrated in yearly reports using OECD and EU indicators. These reports, which have been produced since 2003, and sporadically before that, show a gap between both the inputs and outputs of the Czech system of research in comparison with other developed countries. The strong desire to be above the European average in the Czech Republic allows this demonstrated gap to become a relevant policy concern. The historical position of the Czech

Republic as a leading industrial power of the interwar period in the 20th century and its geographical position in regards to its German speaking neighbors support the general acceptance of this aim.

Comparing the yearly *Analysis of the Existing State of Research, Development and Innovation in the Czech Republic and a Comparison with the Situation Abroad* (hereafter: State of Research) reports can show us how the political and policy context changes over time. For this purpose, the preface, which is signed by the chairman of the Research and Development Council, is particularly valuable. As the chairman since 2007 has been the Prime Minister and prior to that was a Vice-Minister, this can be used to demonstrate how the political leadership is framing research policy issues. The 2007 motto mentioned in the previous section was followed in 2008 with this one "'we will only do what we are number one or number two at in the world' Jack Welch" (Research and Development Council 2007b: 6). By using a quote that sums up the basic business philosophy of Jack Welch, the CEO of General Electric (GE) company, the document shows the clear importation of business models to public management as promoted by NPM ideas. The statement from Welch served as the guiding strategic philosophy for GE, and was used to justify the disposal of any businesses within GE that was not leading its category. Welch's philosophy was extremely popular in the 2000's but fell out of favor after his departure and subsequent corporate difficulties at GE. It is unlikely that the Prime Minister meant to enact this philosophy literally, as it would have required dismantling most of the science system in the country, but abstractly as a threat to underperforming areas, the message was clear. Here we see as well the tenuousness of bringing business-like practices to public administration as management is not a static field and what is considered good practice at one time can quickly fall out of favor.

In the 1999 analysis, the policy problem is depicted more as an input than an output problem. This corresponds with the general European argumentation at the time which suggest that increasing funding levels to 3% of GDP, the so called Barcelona target, was the solution to improving research results. By 2008, the thinking had reversed: “The one percentage point we need to meet the EU target of investing 3% of GDP in research can be bridged by drawing on private resources, primarily in the field of innovation. A more fundamental problem is making sure they are used effectively" (Research and Development Council 2008b: 6). The effective use refers to obtaining what are deemed sufficient outputs in relation to the government investment in research.

The understanding of the economic role of the university also undergoes clear changes during this decade-long period. In 2011, the “Motto: Even in this difficult economic and budget situation the research and development remains a priority for this government" (Research and Development Council 2011: 4), is followed by an economic justification for the importance of research to national competitiveness:

> Apart from traditional characteristics such as independence, rationality and objectivity other values are coming into the forefront nowadays due to the changes in the science policy, such as usability, excellence, interdisciplinarity, international cooperation and mobility. These new values contribute to the improvement of our country’s competitiveness, which is also one of the main priorities of the government (Research and Development Council 2011: 4).

This is in distinct contrast to the 1999 documents which was skeptical of the connection:

> There is no theoretical justification indicating whether support extended to research and development is the reason for or consequence of economic growth. The success of dynamically developing countries (Ireland, Finland, Israel, etc.) proves that increased support extended to research and development must either precede or at least accompany economic restructuring (Research and Development Council 1999).

The 1999 document also demonstrates a skepticism towards bibliometric analysis: “Bibliometric analysis was performed for the first time in connection with a material for the Czech government; although it is commonplace in official foreign documents, in the Czech

Republic it has been so far considered doubtful or downright deprecated" (Research and Development Council 1999). But by 2003, this has already changed due apparently in large part to the overall acceptance of such methods in the broader global discourse: "In the last years the bibliometric analysis, i.e. evaluation of the number of publications and their citations, despite all reservations against its objectivity, methodology and other aspects, became an integral part of documents evaluating the level of research in the member countries of OECD, as well as in the European Union" (Research and Development Council 2003: 65).

Nationally, the anti-corruption discourse gained traction during the time period, if not in terms of aggressive political action to stamp out corrupt practices at the highest levels, at least in terms of a growing awareness and concern over the issue. Generally options are that the Czech Republic has a high level of corruption supported by evidence from Transparency International's Corruption Perceptions Index (Transparency International 2012). There is also a low level of trust in society as can be seen in studies such as the World Values Survey[6]. We see all of these concerns addressed in the rational for the Evaluation Methodology. The quantitative objectiveness of the system is strongly supported. It is seen as a way to counteract the favoritism and cronyism which is seen as endemic in the country and which was seen to have dominated the dissemination of research funds prior to the EM. The idea of a peer-review based evaluation system has been consistently rejected both as regards the cost and also over the fears of favoritism, which are more pronounced in a small country such as the Czech Republic. As complex as the EM is, it does produce results that are transparently obtained, and in that way the points and the formulas for developing them are objective.

[6] *see for example the World Map of Interpersonal Trust which is based on the World Values Survey data (http://www.jdsurvey.net/jds/jdsurveyMaps.jsp?Idioma=I&SeccionTexto=0404&NOID=104)*

5.4.1 Tracking the yearly changes

The EM changes dramatically over time. From its introduction in 2004 to the version of 2012, it displays strong staying power as an institution while at the same time being adapted to various purposes. This section will trace the year-to-year developments of the EM in terms of its aims and mechanisms for valuing research outputs, that is, attributing points. Table 2 below provides a summary of the changes in the point system.

Table 5.2. Point system for selected outputs

	Journal Article – Impact (WoS)	***Journal Article – Non Impact (Erih, Scopus, Czech list)***	***Book***	***Patent***
2004	1	1	1	1
2005	10×(factor [a])	1/2[b]	5/10[b]	25
2006	1+(10×(factor [a])/4 +(10×(factor [a])[b]	1/4[b]	5/20[b]	50/100[f]
2007	5+(15×(factor [a])	1/2[b]/4[be]	12.5/25[b]/50[be]	50/500[f]
2008	5+140×(factor [c])	4/8[b]/10[e]/12[be]	20/40[b]/40[e]	40/200[g]/500[f]
2009	10-305 (10+295×(factor [c]) /500[d]	4/8[b]/10[e]/12[be]	20/40[b]/40[e]	40/200[g]/500[f]
2010 - 2012	10-305 (10+295×(factor [c]) /500[d]	4/10[b]/10[e]/11[b]/ 12[b]/12[e]/20[e]/30[e]	20/40[b]/40[e]	40/200[g]/500[f]

[a] based on journal impact factor and median impact factor of field; [b] international language; [c] based on the ranking of the journal in its field and the overall number of journals in the field; [d] prestige journal; [e] fields of humanities and social sciences; [f] international patent; [g] licensed patent

Overall we will find that there have been four significant shifts over the lifetime of this instrument, some occurring gradually as year-to-year adjustments to correct for perceived weaknesses in the system, while others are abruptly introduced. The objective and measurement dimension shifts from being informational, intended to measure the

effectiveness of research spending, to distributional, measuring outputs as a means to re-distribute research funds. There is a shift in responsibility for the tool in 2007, which moves it from being jointly developed by the Research Council and the Ministry of Education to being solely developed under the Research Council. The final two shifts are more gradual and deal with the complexity and differentiation factor of the instrument. In terms of complexity, the EM begins with a proposal for three categories of output and by 2010 has 26 categories and more complex systems and rules that can be seen in the ever increasing size of the document which in 2004 was six pages and by 2012 has grown to 45. The differentiation factor between outputs, meaning the range of possible points for different types of output, has also dramatically increased, from a proposed factor of four to a factor of 500.

The EM was established in 2004, the same year as the Czech Republic joined the EU, as a tool to evaluate the effectiveness of funds spent on research in the Czech Republic. The ground rules for the evaluation are laid out in the government resolution number 644/2004 (Government 2004), and are part of a larger discussion which includes the results of the 2003 comparison of Czech and international research results as well as the development of a new phase of the national research and development policy for the years 2004 to 2008 (Government 2004a) which called for creating a "complex proposal" for the evaluation of research results that will "respect global trends" and "follow best practices" of EU and OECD member states.

The tool which was created in 2004 was intended as a preliminary tool. The measurements were kept simple, one point for each output for all outputs between 1999 and 2003. The very short timeframe which was given by the government for the implementation of this tool, did not allow for a complex discussion of methodology, but that was planned for the following year. The document does include a basic outline for what it envisions as the future system: there would be a three tiered categorization of outputs: high impact articles and patents at the

top, mid-level impact articles, books, other applied outputs in the middle tier, and low-impact articles at the bottom. A suggested point system of 2.0, 1.0, 0.5 was proposed for the three levels. Overall, the EM 2004 was short document, six pages, which was signed by the representatives of the two bodies which developed it: the Ministry of Education and the Research and Development Council (Research and Development Council 2004).

The 2004 EM was intended to determine effectiveness and this was done by creating the State Budget Index. The index value for each research provider was determined by dividing the output points for a given project by the amount of funding that went into the project, at this time all the research funding was organized around ex-ante research projects, so called research intentions. Though these did have some of the formal appearance of a competitive grant proposal, in reality they functioned more as mechanism for organizing the provision of institutional funding. The results of the state budget index evaluation were made public and the research units, the faculties, departments, and small research organizations, were divided into four color coded groups which corresponded to "well below average", "below average", average, and "above average" results. It was stated that the funding for those groups would be reduced for the below average performers or increased for the above average ones. Several thousand projects were indexed in this manner. Different reports were created to show the effectiveness of the funders (i.e. ministry of education, other ministries with research budgets, academy of science, etc.) and the effectiveness of the projects and the organization or university which was responsible for them (Research and Development Council 2004a). What was actually measured by this system is debatable; however, the objective was clear: create a system which quantitatively measures the effectiveness of government expenditure on research so that in the future, the government could revise the overall funding system to produce both more and higher quality results.

The 2005 version of the Evaluation Methodology (Research and Development Council 2005), rather than follow the relatively simple three tiered system as proposed, established a seven tier system, with additional sub-tiers for foreign language publications. Also, rather than using pre-determined whole numbers, the points given for impact journal articles were calculated based on a formula. The journals which did not meet the criteria allowing them to be categorized as impact journals were all lumped together and given a small number of points. A footnote explains that there would not be an attempt to develop specific list of acceptable journals as had been attempted in the prior year, so all journals counted. The report goes on to say that a great deal of discussion had gone into how to come up with such a list, but that in the end it was decided to go without, presumably for lack of agreement on any specific method. Attempts at steering research towards more international publications can be seen in the provision of double points to publications in languages other than Czech or Slovak in the categories of non-impact articles, books, chapters in books, and articles in collections. As well, for applied research two additional categories, patents and specific applied outputs, were created.

The EM for 2006 was a vastly expanded document which ran 36 pages in length. The document stresses that this version was produced by a consensus working group between the Council for Research and the Ministry of Education (Research and Development Council 2006). It aims to move towards a system for dividing the research budget between institutions based on "objective criteria". It was developed in preparation for the new law on higher education and research policy that was planned for 2008, and which was expected to revise the funding system for universities and research. In the introduction it states that the previous methodologies were "counterproductive" and justifies this argument with evidence that the level of funding had increased but the outputs had not (ibid). In reality, the research outputs of the Czech Republic were increasing steadily, and had been since the min-1990s. They

remained, however, below the world average (Arnold 2011). This simplistic argument may have been influenced by EU policy recommendations focused on the funding input level as a means of improving research results (European Commission 2003). The EU's Barcelona target of increasing the level of research funds to 3% of GDP was by 2006 well established. This comment also shows the conflicting aims that the Council has for the EM. Is it a tool to observe or to steer? If it is a steering tool, then it should provide transparency so that researchers know what will earn them points and are thus able to adjust their behavior accordingly. Alternatively, if it is supposed primarily to observe and measure, then how can the Research and Development Council have expectations that it will improve the research environment.

The aims of the EM in 2006 were widened (Research and Development Council 2006). In addition to evaluating the effectiveness of government spending on research and development, there are two new aims. The first is that the system and the results of Czech Research should be brought as close as possible to international standards and the results of other countries as indicated by the OECD and EU. It is important to note the direct and prominent mention of these two bodies in the text. The second new aim is that the Research and Development Council should recommend on the basis of the research results adjustments to the division of funding for research and development.

The point system in 2006 is yet again revised and the values are increased. To further encourage the hoped for steering effect, the differential between Czech and Slovak results and foreign language ones is increased to quadruple the value, rather than double. The formula for impact articles has been adjusted, and two new applied research categories have been created by splitting national, European and world patents and adding the sale of a license (ibid).

Finally the report acknowledges, though does not offer solutions to, several issues with the past EMs which were of concern to parts of the academic community. Specifically mentioned is the issue of academic disciplines, which refers to the way in which different disciplines are advantaged or disadvantaged by the point system due to their emphasis on different types of outputs, for example, the social sciences and humanities which tend to focus more on monographs than journal articles. Also mentioned is the issue of how to further categorize different non-impact journal articles which still does not have a resolution.

The 2007 system which was expected to be in something of a holding pattern before the major educational system reform of 2008, instead brings a whole new set of issues to the table. Here we find the impact of a decided shift in the political leadership of the Czech Republic from the election in 2006. During the years 1998 until 2006, the government was lead by left-leaning and pro-EU social democrat governments. In 2006, the right leaning parties returned to power with a coalition government of centrist to center-right parties that had a strong neoliberal program. First, we can note that the group of policy entrepreneurs has been expanded to include members of the university community and the academy of sciences whereas before the development was only through the Ministry of Education and the Research and Development Council. Secondly, it backtracks on the goals set out in the 2006 EM due to a legal difficulty. It states that the EM cannot be used to distribute funds according to the current laws, so that that aim was officially dropped and replaced with the aim that the Council should develop a system by which the funds could be reallocated, presuming that amendments to the higher education act will provide for this possibility. The aim of approaching international standards has been removed (Research and Development Council 2007).

The point system has again been subdivided and modified in an attempt to resolve the disciplinary bias acknowledged in the previous year. The major change in this version is the

addition of a new category for the social sciences, which is defined to include humanities. Within that category books, articles in non impact journals and chapters are given twice as many points as for those in the sciences category. The differences between Czech and foreign language publications remain. A slight increase in the impact factor calculations has been made, patents have been increased to 500 points and articles in collections have been reduced to fractional points (ibid).

The 2008 EM brings about significant further changes (Research and Development Council 2008). The most prominent change is that what had up to this point been the primary objective, evaluating the "effectiveness" of government spending on research, has been dropped. Now the aim is only to provide comprehensive information on the results of research to the government and secondly to provide the basis of a system which will be used for a future proposal on the funding of institutional research and development. Secondly, the ministry of education is no longer involved in the development of the methodology. The government is now the sole policy entrepreneur, and its role is exercised primarily through the Council for research, development and innovation, which is chaired by the prime minister. An official subcommittee, the Commission for evaluation of the results of research organizations and finished programs, is established to develop and propose changes to the EM. According to its statute, it is comprised of between 7 and 15 members from the academic community who must come from a range of disciplines and may not hold high positions in other academic bodies.

The points system in this version again sees an increase in impact journal points and another new formula. There are also refinements in the area of social sciences and languages. The column for social sciences has been renamed to “National reference framework of excellence” (NRRE) and includes 10 disciplinary areas, but no longer includes all the social sciences, for example, economics and psychology are not part of the category. The “other

languages" category which provided for increased points, has been renamed "world languages" and includes only English, Chinese, French, German, Russian, and Spanish (ibid).

In the 2009 EM (Research and Development Council 2009b), a new point system is introduced, but is only to be used for the 2008 results. The calculations for years 2004 to 2007 were to remain as calculated under the old system, thereby eliminating the need to recalculate past results. The point system in this version provides a range for impact articles from 10 to 305 points, and adds a special category for prestigious impact journals, in which a publication is worth 500 points. There are three such journals: Nature, Science, and the proceedings of the National Academy of Science USA. For non impact journals there is a further division. Points will be given for articles published in journals that are listed in Scopus or ERIH. Points will also be given for articles published in Czech peer reviewed journals which are on an official list. Publications not falling under any of these sources are given no points.

The EMs for the years 2010 through 2012 use the same document (Research and Development Council 2010). The point system itself remains similar to the one in 2009. In the prestige journals, only Nature and Science remain. The document has again been expanded to pave the way for its use in funding research. It now includes a major section on the verification of results. Due to the plan that all institutional funding for research is to be allocated by this tool, there is an even stronger reason to be concerned over the attempts to cheat or manipulate the system. Although the EM did call for all institutional funding to be distributed according to the EM results, in the end, it was only used to influence the distribution of a smaller percentage at the discretion of the Research and Development Council.

Over time we see that the EM has increased dramatically in complexity as the result of an ongoing attempt to make the quantitative system work more effectively. Problems uncovered in one year would be addressed by tinkering with the formulas, points, categories and definitions in the next. It has also transformed from being a tool that measures effectiveness to one that simply provides information. But that information has gone from being a source of evaluation to being an integral, even mechanical, element in system by which research funding is allocated. The system as of 2012 has a very detailed structure with 26 categories of output each with a different point value. However, it is not clear what justifies the differential in points between the outputs. The system distributes points ranging from 4 to 500, a hundred and twenty five fold interval, which is well beyond the originally proposed fourfold interval. This stretching of results, in a winner-take-all manner as well as simply the very large numbers that the system uses, makes comprehension and steering more difficult. The reliance on journal impact factors to determine the influence of specific articles is a rough estimation at best. It is also extremely difficult to pre-judge the points that one is likely to obtain. Those that do have a good grasp on the system, can "game the system" and there are examples of how lower impact journals can bring more points than their more respected counterparts. Daniel Munich, a member of the Commission, demonstrates on his blog how the points that could be obtained by publishing in several less known Lithuanian economics journals would be significantly higher than for publishing in what are broadly considered the top journals in those fields (Munich 2012).

While the EM does aim at objectivity, there are nevertheless significant politics inherent to the system. Concerns over the gaming of the system only reinforce the existence of the overall problem. Such a system, if it is supposed to steer research, should intend for researchers to attempt to maximize their results and hence maximize their rewards. This would indicate an effective steering system. The assumption being that the change in

behavior is seen in a positive light. However, the concept of gaming the system, implies that people can use the system in ways that are seen in a negative light. That is, they can obtain high points for outputs that are not qualitatively judged as desirable. This presents a fundamental problem for the quantitative system, which is that the qualitative critique appears to trump the quantitative results. The consequence is a cat-and-mouse game of tinkering to get the quantitative to match the qualitative ideas of what constitutes good research. It is, however, unlikely that a perfect quantitative system will ever be possible.

5.5. Conclusion

The experience of the Czech Republic in developing the EM suggest several dangers which should be considered as research policy reforms and more generally NPM type reforms are carried out. First, what I would call NPM run amuck. The way in which this reform was developed demonstrates the dangers in allowing a single doctrine to dominate a policy debate. The NPM sigma-type values which were identified by Hood have clearly come to dominate this policy tool, to the exemption of lambda-type values as predicted. Some sort of balance in these three types of administrative values is desirable, but it is understandable that particularly under periods of economic uncertainly, the sigma-type values of avoiding waste come to dominate. Also, it is clear that the theta-type values are quite different in the Czech case than what Hood imagines. Trust is not inherent in the participants, but there is an attempt to implement it formally through a quasimarket system. The EM focuses on process, in this case the mechanistic process of allocating points, with the aim of creating a fair system.

A second danger is that of the abstraction of policy discourse, as policy and policy innovation become more transnational. The use of entirely abstracted models or prototypes as promoted by supranational bodies like the EU and OECD in the Czech system is likely a consequence of how these policies are presented in a global context. In order to make them more attractive

and applicable, they are stripped of most of their national context, but some context is intended to be re-implemented in national discourse as these policy ideas are translated into national policies. However, we can see in the Czech Republic something like an attempt to implement an ideal-type policy, one in its abstract, global form, without translation. Note that there has been nationalized justification for the policy in the way it fits the political debates, but the policy idea itself still follows a very abstract philosophy.

Finally, the third danger is that of using purely quantitative measures to analyze and judge quality, excellence, and relevance: terms which are rooted in a qualitative understanding of what is good and desirable. While indicators and other quantitative tools may help in making this judgment, it is not likely that there can be an effective system that does not include some degree on qualitative judgment. The resulting system in which everything is formalized, means that the definition of a good book is one which is at least 50 pages long, has an index, bibliography, registration number, and at least one expert review. It is worth recalling that the original proposal in the UK for the REF was to create a quantitative system, conceivably like what has appeared in the Czech Republic. “The Government’s firm presumption is that after the 2008 RAE the system for assessing research quality and allocating QR funding from the DfES will be mainly metrics-based" (HM Treasury 2006: 10). In the end the REF system has remained mainly a peer-review based system, but the trends of the mid-aughts were to push for quantification even in the country with the most known and respected peer-review based.

The trends and values inherent in NPM are not likely to disappear anytime soon; however, it is important to see where they can lead if there isn’t some emphasis on competing values. NPM holds partially contradicting arguments at its heart, and these lead to paradoxes in the way in which values like autonomy engage the policy debates. A balanced approach between the three types of administrative values which Hood identifies, means that process and inputs should not be ignored in the quest to improve the outputs of research, as these alternative

values promote diversity, resilience, and emergence, which are important drivers of creativity and innovation.

CHAPTER 6.

SWEDISH RESEARCH GOVERNANCE:

QUASIMARKETS AND RESEARCHERS[7]

6.1. Introduction

Sweden provides an excellent test case for examining the distortions which current global and European trends in university-based research policy are creating. By the European Union's criteria, Sweden is one of the top performing countries in research. It falls among the top three in "R&D intensity", the percentage of GPD going into research and development, and "Excellence in S&T", a newly developed composite indicator (European Commission 2013c). Nationally however, there is concern that something is wrong, that Sweden is not leading but falling behind. A 2010 report by the Swedish Research Council found that the Swedish production of highly cited papers, that is, articles which are among the top ten percent of the most cited within a given field, was comparatively lower than the country's overall level of citation results; further, it was declining (Swedish Research Council 2010). To understand this dearth of what is termed "breakthrough research", the Royal Swedish Academy of Sciences commissioned a further report which reached the conclusion that: "although Sweden distinguishes itself by applying relatively generous budget conditions to research, the Swedish universities do not perform at the same level as the universities in the more successful reference countries" (Oquist and Benner 2012: 12). It identified a number of causal factors which it argued "are virtually systemic in nature, based on policy decisions at national level; on the ways in which the funding systems have developed; and on university managements capable, with sufficient strength based on academic legitimacy, of steering

[7] Young, M. (2015), 'Competitive funding, citation regimes, and the diminishment of breakthrough research', *Higher Education*, 69(3): 421-434. The final publication is available at http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1007/s10734-014-9783-4.

priorities towards top academic quality" (ibid). The report focused particularly on policy change related to university funding:

> One highly significant reason for this is the heavy dependence on external funding. In Sweden today, universities acting as "research hotels" is a reality... Previously, floor funding had predominated. Now, funding from external sources expanded (and is currently at 51 per cent of total funding). While this change may, again, have boosted competition and Swedish scholars' "animal spirits" (and enhanced their productivity), it has arguably weakened quality control at university level. Instead, the reform may have yielded a "Balkanised" university system where individual researchers and groups compete for resources and there is little or no supervision or strategic oversight for the universities' part (ibid).

This analysis puts the focus on the systemic nature of the problem, that is, the externalized system of competitive funding, which can be considered as a quasimarket that functions by harnessing competition as a means of ensuring quality and productivity.

There is, however, an alternative reading of the same data. In 2012, the OECD published a broad report on Swedish innovation policy (OECD 2012), but as opposed to Oquist and Benner who imply that there is a direct relationship between the market-like system of funding and the problem of breakthrough research, the OECD argues that the fragmented funding system is an advantageous part of the Swedish research environment: "The extremely rich competitive funding landscape, which is a positive feature of the Swedish system, empowers researchers who are able to acquire funds directly" (OECD 2012: 185). The negative terms "animal spirits" and "balkanized" from the original report are for the OECD understood positively as "empowerment" and "rich[ly] competitive". When the OECD report does refer to the problems identified by Oquist and Benner, it reframes them according to a different paradigm:

> the generous funding streams include a number of disincentives and do not sufficiently encourage frontier research. In sum, the study [of Oquist and Benner] finds that the drawbacks of the general university funding (and the internal university allocation) along with too many small multi-goal external funding sources create a situation in which universities become "research hotels", "an effect of the skewed funding and authority structure" (ibid).

The OECD, rather than seeing the fragmentation of funding as a systemic problem, frame it as an incentive problem, going on to imply that the general university funding is part of the problem; in fact, Oquist and Benner suggest the opposite; that the internal allocation issues are a consequence of the larger shift in balance towards external funding which weakens the university administration and causes distortions in authority and loyalty.

Which is a more accurate characterization of the problem: systemic conflicts or misconceived incentives? The answer has deeper implications. If the problem results from the incentive structure, then it can be solved within the existing system; however, if the problem is an inherent part of the logic of the system, then the solution requires a different sort of system. This chapter addresses this dilemma from the perspective of the researchers themselves. By understanding how funding and evaluative tools are understood and used by researchers in their decision-making processes, the chapter seeks to uncover the ways in which the implementation of these policy tools is affecting the sort of research that is undertaken. Further, the chapter argues that the Swedish system in this case is representative of at least one conception of how an ideal system might look according to the EU's approach to research policy and in particular the modernization agenda for universities. Therefore, if the Swedish system contains a fundamental flaw in its logic, the broader EU thinking on how to promote excellence in research might also need to be reconsidered.

6.2. Modes of inquiry

This chapter looks at the logics at work within the university on the individual researcher level. The chapter is based on a set of 20 interviews conducted in December 2012 with administrators and academics in several different natural science and social science departments at a prominent Swedish university that is large, comprehensive, and highly research intensive. There were 17 interviews conducted with researchers and three with

university administrators. Of the researcher interviewees, 12 were in social science departments and five in natural science departments; eight were female and nine male. Five of the researchers also had an administrative role within their department. A breakdown is provided in the research interviews section of the references. The interviewees were selected to provide different career point perspectives: four of the interviews were conducted with early career researchers (postdoctoral researcher, researcher or lecturer), seven with mid-career researchers (senior lecturer or associate professor), and six with professors. Quotes from the interviews have been anonymized. The semi-structured interviews examined the ways in which the researchers set about defining and choosing their research projects and topics, how they were funded for their research, how they selected where to disseminate their findings, and the allocation of their time to research and teaching. The researcher's perception of the funding systems in both Sweden and the EU was also raised. The interviews were transcribed and coded by department and career stage attributes; further rounds of coding were done by the institutionalist logic of the responses (rational choice, normative, historical), and by key themes including: fund seeking strategy, publication strategy, attitude towards books, career pressures, allocation of time, and culture of internationalization.

6.3. Theoretical Framework

The interview data is analyzed using a framework based on variations of the neo-institutionalist model in political science[8]: rational choice, normative and historical (Peters 2012, Hall and Taylor 1996, Pollack 2009). The institutionalist model is operationalized using the idea of different logics which shape the strategic behavior and decision-making of the university and all of its sub-levels, from the faculties down to the individual researchers. There are two primary logics which are driving changes in the practice of research at the

[8] In other disciplines these concepts may be understood differently; in sociology what is here termed rational choice might be better understood as a market logic.

university which I will refer to as: rational choice and normative internationalization. The first, rational choice logic, embodies the belief that behavior is shaped by incentives, and that actors will seek to maximize the rewards that the institutional arrangement offers. There is a competition for scarce resources which are zero-sum in nature. This logic is well represented in neoliberal policy ideas. To the extent that actors follow a decision-making strategy that seeks to maximize funding, publication points, and/or prestige, we can say that they are following a rational choice logic.

A second major logic which is driving change at the university is the normative logic of internationalization. Rather than being rooted in incentives and quasimarkets, institutions and actors follow a "logic of appropriateness" (March and Olsen 2008), that is, they follow shared norms and values, creating a culture. These norms and values may be longstanding, or can be newly introduced by leaders and adopted by others. An institutionalized norm can be recognized when actors speak of it in terms of it being "the way we do things here". In this case, the normative logic is one of internationalization, which can be understood as the need to operate as researchers on an international level. This logic recognizes that research is a global activity and therefore needs a common language and global platform of dissemination, debate, and networking. The specific practice of this logic is embodied by publication in international journals, attending international conferences, and being part of international research networks. The normative logic of internationalization overlaps with the rational choice logic in various ways. It accepts the internationalization of research and the importance of citations as indicators of success in achieving the dissemination of knowledge; however, it also does not exclude other forms of dissemination which hold social value in academic terms.

There are some contrasting logics also at play in the university, which are more stabilizing in nature and which I will not address in this chapter as they only occur sporadically in the

discourse and do not have the same level of widespread use. The first is an individualist logic, in which decisions are made according to what the researcher wants to do, what they enjoy, or what they themselves value in terms of which journals or publication formats they like to read. This could be related to a traditionalist logic, which is based on the values of academic freedom and the Humboltian ideal of the indivisibility of teaching and research. There is also a local-service or third mission logic, which stresses the role of the university within and towards the community. This tends to find its expression more on the education side, but can also be found in some departments in the social sciences regarding their research practices.

This chapter focuses on two quasimarkets (research funding and publication outputs) and examines how researchers understand their individual options and decision-making opportunities in relation to them. That is, to what extent are either the rational choice or normative internationalization logics shaping researchers decisions? The policy development of these two markets is briefly summarized within the context of EU policy; then, after demonstrating the sort of discourse that represents the logic, the chapter examines several sites of contestation in order to judge how comprehensive that discourse is. For the research funding market, the question of whether different sources of funding are valued more highly than others is discussed. For publication outputs, the writing of books is studied.

6.4. The Swedish funding system and its relation to EU policy ideas

6.4.1. Fragmented funding bodies

When measured as a percentage of GDP, Sweden ranks as one of the highest level funders of research in the EU, devoting (in 2011) nearly 3.5% of GDP towards research, a level that puts it only just behind the leader, Finland (European Commission 2013a). Beginning in the 1990s, following the Swedish economic crisis, the country undertook a wide range of

reforms. In the research funding area this meant shifting much of the government funding out of direct government control and into the hands of agencies, research councils and public foundations (Marton 2005). What money is still distributed directly by the government, was in the mid-2000s subjected to stricter auditing and evaluation practices which are increasingly being linked to distribution mechanisms.

The Swedish research funding system can be described as fragmented and highly competitive. There are around 20 significant research funders for university-based research, the two largest being the Swedish Research Council with a yearly research budget around 400 million Euros and VINNOVA (Swedish Agency for Innovation Systems) with around 200 million Euros. They focus respectively on basic and needs-driven research, but there are many others that complement and overlap these in terms of their areas of funding. The other seven major government agencies each have between 10 and 100 million Euros per year to distribute, and the rest of the top 20 includes public and private foundations that have anywhere from 6 to 100 million Euros (Forskning.se 2009). There are also funding opportunities at the municipal, regional, and European level.

This fragmentation of the funding system is very much in line with the direction that the European Union is promoting as a good model for European countries. We find this most clearly stated in the modernization agenda for universities that the EU developed in the mid-2000s and which states that “excellence emerges from competition” and argues for “increased competition” as a means of developing the quality of the European university sector (European Commission 2006: 9). It also recommends a “pro-active diversification of their [universities’] research funding portfolios” and that “each country should therefore strike the right balance between core, competitive and outcome-based funding (underpinned by robust quality assurance) for higher education and university-based research" (ibid: 8). While the document does not prescribe a fragmented system per se, such a system does serve to create

the desired environment of diversification and competition. Implied in the modernization argument is the idea that competition is good, and hence, more competition is better. There appears to be no limit at which point the returns on competition decrease. The research in this chapter suggests that there is a point of diminishing returns, and even a point at which competition is counterproductive.

6.4.2. Performance based allocation of funding

In 2008, the government introduced the bill "A boost to Research and Innovation" that changed the system for funding university research. A portion of the directly distributed Swedish government funding was now to be allocated according to two indicators: first, by the amount of external funding the university had received, and second, by a points system based on normalized publication and citation results. The system counts publications in the Thomson Reuters Web of Science database (WoS) and then normalizes them according to the field, document type and year. While this normalization does address some of the biases between disciplines, other distortions still remain. From the government perspective, the major advantages of this model were: one, it is highly automated and hence relatively low cost and low maintenance, and two, it could be implemented rather quickly (Carlsson 2009). Selecting a purely indicator based system was a deliberate choice on the part of the government. The initial policy recommendation had proposed a balanced system of peer evaluation and metrics, which also included two further indicators, covering the issues of gender balance and teachers with doctorates (Swedish Government 2007). Both the peer evaluation panels and the later two indicators were stripped out as the proposal made its way into law. The final bill also reduced the overall amount of general university research funding to be distributed by this points system from the proposed 50% to 10%, largely mitigating the possibility of radical redistribution effects.

Like the fragmented funding system, the use of an indicator based evaluation system can also be seen as part of the European agenda: “Competitive funding should be based on institutional evaluation systems and on diversified performance indicators with clearly defined targets and indicators supported by international benchmarking for both inputs and economic and societal outputs" (European Commission 2006: 8). The Swedish system of 2008 begins to accomplish this.

It should be noted that this is not a causal argument between Swedish and EU policy or vice versa. What is relevant is what the similarities mean in a broader context. The Swedish system can be seen as a representation of one ideal-type vision for the implementation of the European model for research funding. Because of that, we can use the Swedish system to analyze a possible direction in which European research policy is moving. The two elements of the Swedish funding system, the competitive and fragmented grants and the pressure to publish for points based on bibliometric indicators, form the basis of an incentivized model for academic steering. The question is: do they work as intended in Swedish universities?

6.4.3. The funding quasimarket

Funding is deeply ingrained in how researchers talk about their research at the Swedish university where the interviews were conducted. Two things stood out across all the university departments in which interviews were conducted. First, responses to questions about research topics were nearly always structured along the lines of what that person currently had funding for. Researchers would list projects and then explain how those related to their research interests. Second, researchers were very aware of the exact time percentages which they could allocate to different aspects of their work. Generally this was a breakdown between research, teaching, and administration; however, in the cases where people had more

than one research project, the amount of time which was being allocated to each one was also specified.

Time therefore becomes a central currency within which researchers orient themselves. The system which regulates research and teaching time is highly structured. While there are some exceptions for more established professors who have already proven themselves and their ability to obtain grants, all of the early and mid-career academics I spoke with had very little researching time built into their employment relationship with the university. The basic contract involved only 10% research time, while the remainder was teaching time or in some cases administrative time. Of course this small fraction of time is not sufficient for conducting excellent research, but then no one argues that it is; rather, the understanding is that the researchers must "buy themselves out" of teaching. This is the phrase which is used broadly across the university to describe the process of finding external funding for research.

The idea of "buying oneself out" from teaching has a number of implications. First, it creates a hierarchy between teaching and research, in which success is measured by *not* teaching. So while the university proclaims a strong commitment to teaching and its Humboltian indivisibility from research, the institutional incentive structure works against that. Further, despite their purportedly being of equal status, the greater importance of research in career advancement is well known:

> To get a [permanent] position it is said that it is supposed to count equal: teaching and researching, publications and the experience of teaching, but basically everyone knows it is not the case; it's the publications that count (Interview06).

Publications can only come with sufficient research time, and this is the mutually reinforcing mechanism of the system. Without publications, one cannot get funding, as these form an important part of what the external funders evaluate, and without funding, one cannot get publications, as all that person's time will be tied up in teaching.

Because the system favors research and because grants come and go on a schedule different than the teaching one, the system also forces a change in the teaching model:

> Rather than have the teachers as the stability in the course structure, we have the courses as the stability, which means that we have the courses and then we put in a teacher to fit. It means that all courses are taught by a team of teachers, not just one teacher (Interview15).

While there was some frustration expressed over this instability, this person also saw benefits, particularly in terms of the openness and interaction which becomes a necessary part of such a system. Instructors share notes and slides and engage in a high level of communication and discussion over the way the course flows, which counterbalances drawbacks regarding continuity and personal interaction with students. The university receives strong evaluations for its teaching so the restructured system does function effectively.

A second implication of the "buying out" system, is that obtaining external funding becomes a central focus of academic life. Since external grants are usually limited to a maximum of three years, all academics are under essentially constant pressure to apply for and/or renew their funding. While this pressure is not unique to the Swedish system, it is instructive to understand though how it plays out in the Swedish university context. Take for example this mid-career academic who felt he was in a stable situation, which meant having funding for three years. In reality, that only meant that he could afford to take a year off from applying for funding:

> Three years is basically the time horizon I'm working with, but I would say that the next round of research funding, I would definitely go for. I would definitely send in an application and if I would get something at that time, that would be good, but not necessary... Then in two years time it would be necessary for me to get additional funding. Yeah, otherwise I need to teach much more than I am prepared to (Interview03).

The assumption that applying for funding is often a multiple attempt process is expressed by many researchers, as is the critical need to stay on top of one's funding for research.

> I guess you have a long time prospective... in two or three years time, my research funding will end, so if I don't want to do teaching full time, I have to start next year to apply for money. You have to think a lot in advance to be able to ensure that you will have research time because if you get caught up in one hundred percent teaching, it will be very difficult to find the time to write research applications… I think you always need to be in the game… I guess that would be my strategy, to keep myself hanging in there (Interview16).

The career stage also has an effect on the need to apply for funds. The above quotes come from early and mid-career researchers, who must buy themselves out. Professors, on the other hand, while often having more research time built into their contracts, still face pressures to obtain funds:

> As a professor you have this sort of pressure to write applications, that's what you are supposed to do, that's why you are a professor. You are supposed to bring external money to the department; you are supposed to be a kind of motor driving things (Interview05).

In this case the logic changes from an incentive to a normative basis. It is not the fear of losing research time, but the requirements of the job and the department, what one is "supposed to do," that drives the research funding applications. Professors are supposed to apply for funding not only for themselves, but also to support others in the department. The so-called Mathew effect (Merton 1968) is strong, and those with an established research and publication record are very successful in obtaining funds. As one person explained, "All funding is distributed by the same logic, which means that if you fit into that logic, you get funding from all ends, if you don't fit into that logic, it's really hard" (Interview15). The logic steers funding to "young post-docs, preferably methodologically very skilled, and excellent groups around professors" (Interview15), while the mid-career academics are often left out: "I calculated after the last results from the science councils - I had two applications that failed - that the chance for me to get research funding is approximately five percent, which I think is absurd, illegitimate" (Interview15). Others were less outspoken and more resigned to this new reality. Even researchers who had been successful with grants, were still consistently working

on new applications. This led one professor who had had multiple proposals accepted to describe the difficulty of finding time for them all, demonstrating a further distortion resulting from a strategy to compensate for low success rates.

The mid-career position is one of transition in which people begin wanting more control over their own research funding, rather than funding obtained by being part of a bigger group (led by more established professors). This is often outweighed, however, by the recognition that establishing a publication record is a more strategic choice in terms of future success. When this person was asked whether s/he would prefer to apply for more independent funding, the reply was:

> Yes, definitely, but right now I have not been needing to do that, but definitely [in the future] and for two reasons: then I could steer my own research agenda even more. I feel that I can do that within the [group I am in] to a large extent, but then I would be my own boss. And it has some career value as well to be able to get money. So those two incentives would be reasons to go for funding on my own. But so far I have prioritized writing papers instead. It takes a while to find funding. I think as long as I can get funding anyway and write things that I like, I'll go for that option (Interview03).

Another mid-career researcher in a different field talked about the strong pressure from colleagues to continue to get involved in applications even though s/he has enough funding. The reaction was again a strategic and incentive based one:

> It's a little bit strange now, my situation, because my colleagues here of course want me to get involved in more applications, but since I myself do not need the money for my salary, its seems a little bit stupid for me to apply for my salary if I already have one. I cannot save the salary for the future… And since I am not an associate professor yet, I cannot apply for my own PhD student… [Anyhow,] I strongly feel I should do something more on the publication side because this is the only thing that counts, or one of the most important things that counts in being successful in a [grant] application (Interview11).

Those early career researchers that are not part of a larger research group have it much more difficult. This early career researcher describes how it had taken years to finally settle into the position, but who is now facing the prospect of having to leave: "I would like to stay in the

business, if I am able. [But next year] if I'm in the same situation as now, I have to find another job, I think. I have spent so much time this spring on applications, and I didn't get funding for anything" (Interview06).

Ultimately, the pressures which build up on researchers in this system are very high, and some do choose to leave for that reason.

> And also you have people that leave the academic world… because [they] don't like it… don't want a life like that. You want a good life with peace and security, and you also have very interesting ideas that you want to test; you want to do research, but you don't like this insecurity that goes with it… I don't think it's a good way to arrange things (Interview02).

To this point I have mostly described a very rational incentive-based approach to seeking funding. To test this hypothesis of incentive-based logic further, I look at whether funding sources have any hierarchy or value beyond the money provided. If there are other values being attached to funds, that would suggest other logics are at work. The findings here are mixed and depend on the career level of the researcher. To the extent that a hierarchy does exist in people's minds, in reality the pressures to simply obtain funding overrides that in importance. The incentive system for avoiding the vicious circle of a full teaching engagement is far more powerful than getting funding from a source perceived as superior. While the university encourages researchers to obtain EU funding, the dominant culture is one which does not distinguish good from bad money:

> Any kind of funding is good funding. If we get the national funding, it's just as good as the EU funding so it doesn't really matter for us (Interview01).

> Money is money. Yeah, it is. Of course if you look at it from a merit point of view, it would probably be perceived as having a higher value if it's from the [funders more oriented to basic rather than applied research], but that would be still marginal, because in the end the important part is that you got the funding for your research (Interview09).

The dominant thinking for early and mid-career researchers is that it is best to just get money, and while there are some value associations connected with the source, they are secondary

considerations. There were some differences, particularly in attitude towards locally and municipally funded research, with the science departments being more approving of those sources. A different attitude can be seen when talking to established professors. This may be because they are not subject to the same survivalist logic, and would not be forced into a full teaching load should their applications fail. Though repeated failure to obtain funds would be problematic even for professors, they do view the situation differently; as this professor puts it:

> Getting EU grants is the number one priority because it's so prestigious. You can get a bigger amount of money from a domestic funder, but that is not half as important. If you can secure even a small amount from any EU funding body, that's the number one priority (Interview13).

However, this awareness of the university's priority and the associated prestige value of such funds still is not necessarily enough to make spending significant time applying for those grants a rational choice:

> I think the general view is that there is a tremendous amount of work to actually obtain the funding and administer the funding [from the EU]. So I think we are a little bit, not restricted, but careful about doing that (Interview01).

> You do a simple cost benefit analysis, and you see that there is no way that such an analysis can justify spending ten minutes on it because the odds [of EU grant applications] are so stacked against you (Interview13).

Applying for higher prestige funding, which also entails higher risks of failure to obtain funds, is not mitigated by the university or national system. Success in obtaining EU funds is highly valued, but failure trying is simply lost time, and in a system where time is the central currency, this is significant. The very high failure rates, often above 90%, means that much of the time spent on research applications is to an extent wasted, particularly if that time could have resulted in publications.

A major consequence of the time based, buying-out approach is that researchers are extremely careful in their selection and development of projects. Failure to deliver the

promised results is potentially catastrophic. Of course, exploration of the unknown is what research is about, and it necessarily involves a risk of failure. While that risk can be mitigated by taking smaller, more conservative steps in projects where the outcomes are more predictable from the outset, this would likely result in less groundbreaking research. This leaves researchers with a dilemma:

> In order to do research you have to have secure funding all the time, [but] you are not always successful in your research. You have trial and error – [you may have to try] several times in order to succeed. [Researchers] have lots of problems because they can't do this (Interview02).

The solution is to engage in relatively safe research:

> I think we are quite backed up when we go into a research question. We can't really afford to explore something and then notice that it was nothing because we have funding for a specific objective… We are pretty much doing step-by-step quite non-risky developments in our group. And that's pretty much because we are so dependent on external funding… We need to give them results for each of our projects to show them that 'these people know what they are doing and we can give them more money' (Interview01).

In another department a researcher explains their new research project and how the system has steered it to be seemingly conservative and predictable.

> I think you should be able to take risks, but I don't think the system is really generating that because … otherwise you don't get more research money or the permanent position you want to get. It really drives you to safer projects… The project I have now is more like that. We already set out what I am going to do, so it's a little bit boring. I mean, I guess there will be surprises, but it's not going to be the same [as previous research which was very open ended] (Interview16).

Researchers and universities have developed systems and strategies for dealing with the funding quasimarket that have become deeply institutionalized; however, there is a strong variance between established professors and other researchers in terms of how the pressures of these quasimarkets affect them. A very clear divide appears between professors who have research time built into their contracts and researchers who do not. Does the same hold for the much newer citations quasimarket?

6.4.4. The citations quasimarket

The internationalization of publications is something which has been broadly changing at the university since the turn of the century, department by department. This change is often attributed to specific leaders within the department, though not necessarily institutionalized leaders, such as the head of department, but rather highly successful researchers without an administrative role.

> I think the culture differs very much within the faculties and among the faculties… some 15 years ago there was a discussion [in the department] that we should and must go much more international. And in three years time, the culture shifted, so everyone is now in the first place trying to get published in international journals, and that has made a lot of people frustrated, because it's not so easy to get into, but also… the people that were on the top before are not any longer (Interview08).

The impetus for change comes from the researchers themselves, not only or even primarily from the administration or government. This person explains how internationalization has become the dominant culture:

> It comes from the research community as well; it's not all politics and people plotting to do it. It's sort of an urge … that you need to be part of the international research community, and you want to be part of the international research community (Interview02).

This embodies itself as well in strong peer pressure both in the departments but also across the university. The administration encourages this sort of interdepartmental comparison and competition. Although internationalization has become ingrained in all the departments I studied, the degree of implementation differed. Within departments, there were also varied opinions as to how far to internationalize. This particularly came out in the social sciences over writing and publishing in Swedish, which was considered desirable and valuable for a number of the interviewees.

The debate over how to value books in comparison with articles is a good test for the level of institutionalization of this quasimarket, which tends to downplay their value. Books are

important to many in the social sciences. This is less so in the natural sciences, but even there textbooks still have some currency. Regardless of the citation point systems' general lack of recognition for books, researchers were still working on books projects and had several ways to justify them: bringing together different strands of research which were published in dispersed outlets over a longer period of time; reaching a broader audience; reaching a higher career stage, that of professor; and simply doing something that they enjoy and see a value in. In the following quote we can see that there is even a rational choice justification for writing a book, though it is not the main rational:

> I think that we see the connections between those papers [we've written] but first of all, no one else may have read all those papers published in different journals, and even if they have, it's not necessarily so that they've seen the connections… We are hoping that we might reach a broader audience with this one. But I would say actually if I would look at in only from a career perspective, at least in the Swedish system, in order to become a full professor, you should also have published books. That is not in any way the main motivation, but it is a part of the motivation, so also from that perspective I think at least in the Swedish system it makes sense to do that (Interview03).

Here the justification is primarily academic in nature; the book will serve an academic purpose. It will repair one of the weaknesses of the system of article publishing, that is, the fragmentation which separates ideas and outputs that if connected, might have a stronger impact. The further acknowledgement of this having a career benefit underlines the fact that the academic profession has retained the symbolic value of the book.

Another researcher described his intention to write books as follows:

> I like to read people's books in that sense, when you know someone has done research for a number of years on something, and they finally sit down and take an overview of what they've done. That's an interesting piece of work for me to read, so at some point I'd like to do it with my own stuff. But it is difficult to have time to do that. You don't really apply for funding for something like that so you need to create that time and space. That's not something that the research councils will fund, if you tell them that I try to collect my research over the years and put out a monograph (Interview10).

Again, the justification is stated in terms of academic value as well as personal interest. The fact that one is highly unlikely to obtain funding to write a book, demonstrates the distortions which the system is creating. It is illustrated by this highly published professor who remarks:

> I think that the fundamental problem that I have been having is that many of the most successful publications I have were never funded by any research council. I wrote them while I was doing other things (Interview13).

6.5. Conclusion

The chapter began with a puzzle as to why breakthrough research is declining in Sweden despite its following a broadly accepted set of policy principles. A Swedish study suggested that this was a result of systematic problems, whereas the OECD claimed that it was a matter of misconceived incentives. This chapter places the crux of the debate in the way quasimarkets function and affect the decision-making of universities and researchers. The quasimarkets for funding and publications, on which the national system of research and evaluation in Sweden has been designed, are deeply intertwined and have an increasing impact on the thinking of researchers and universities. Understanding the effects of competition, which is the primary motivating force behind quasimarkets, is crucial for understanding why the problem is better characterized as systematic than incentive-based. It points us towards several policy implications within the university and on the national and European level.

The academic environment is inherently competitive, and no interviewee argued against that; rather it is the degree of competition which makes it counterproductive. When acceptance rates fall below a particular level, the result is wasteful of both the time and money invested into failed projects, and for some at least, de-motivating, as getting funded is seen more as a lottery than a predictable reward for a well-conceived research project. As the competition level rises, so does the quality of the rejected proposals, meaning that potentially valuable

research is not being undertaken. Identifying the precise tipping point at which competition goes from being productive to being wasteful and discouraging is an important question for policymakers which requires further research.

Among the researchers interviewed there is strong independence, but also a general feeling that they should be more "strategic" in their decision-making. This is their way of saying that they should focus more on fulfilling the demands of the quasimarkets. Likewise universities are being called on to act more strategically; however, they struggle to maintain steering power and a role in the quality debate against the logic of external quasimarkets. The loss of this type of autonomy appears to contradict policy ideas both in Sweden and the EU that call for universities to strategically differentiate themselves. This paradox needs to be addressed: by what means can universities position themselves, if the steering tools for doing so are being externalized to a national and even global level?

Returning to the initial question: do competitive, quasimarket-based attempts to promote research excellence actually foster academic conservatism? The findings suggest they do: a highly competitive system which does not maintain a sufficient degree of security can hinder the process of creating groundbreaking research. The stoking of "animal spirits" leads to a survivalist approach and a more direct focus on getting cited and funded as goals in themselves, and in so doing creates conditions that foster conservatism rather than the sort of aggressive innovation and creativity that leads to breakthrough results. The challenge for policy is to promote the later, and quasimarkets, as a consequence of their systemic distortions, are inherently disadvantaged in achieving this objective.

SUMMARY AND IMPLICATIONS

This dissertation began with the hypothesis that *policy tools that are implemented for evaluating and funding research will change, and in many cases distort, the practice of research* and that we can further understand that distortion by classifying the policy tools in terms of the governance narrative that they embed. The resulting sub-hypothesis is that *the recent emergence of quantitative performance based tools for research evaluation and funding are related to the New Public Management narrative and are subject to its politics, logics, biases and distortions*. It is argued that both of these hypotheses are grounded in an interactive governance context characterized by vertical and horizontal decentering.

In order to address these hypotheses, three major scientific literatures were brought together: governance, public administration, and new institutionalism. This allowed for the creation of a theoretical model by which institutional theories were operationalized and used to study the effects of policy instruments on individual behavior using a convergence case study approach. In the future, this theoretical model can also be applied to other instruments in different countries and on various levels of governance in order to provide a better understanding of how policy is implemented and with what distortions and implications. It further challenges the theory of new institutional itself to address the complexity which is both constructed and constrained by its variants.

Four empirical case studies were undertaken at three different governance levels and were used to test the hypotheses stated above. At the supranational level, two case studies were conducted. The first looked at how the EU engaged with research policy and in what ways its governance activities could be categorized. The study found a complex set of features that combined both policy prescription and agenda setting practices with institution building and metrics construction in a way that drew all three governance levels together into what the EU

was by 2012 calling a partnership. This partnership for creating the European Research Area, fits the interactive governance paradigm. It recognizes the complexity of governing research policy and does not try to oversimplify it through a streamlined set of tools, although there are some sections within the policy documents that suggest it might be inclined to try. The partnership idea captures the decentering of power in both a vertical dimension by including other governance levels and a horizontal dimension by treating the area in market-like terms, as a "fifth freedom" for the internal market, in which governance is enacted through indirectly steering and externally managing the market rather than directly participating in it.

The second supranational case study took a more narrow look into the central distribution tool for EU research funding: the Horizon 2020 framework programme. This was the eighth such programme in a sequence beginning in the mid-1980s. The case study focused first on the question of whether there was a break between this programme and the one preceding it as was claimed by the Commissioner. It found that there was, but that the difference was mainly in terms of the type of governance narrative. The case study showed how in Horizon 2020 the discourse became more closely aligned with New Public Management concepts and ideas. Following this, the case study looked at the concept of excellence and how it was used and interpreted by different actors, particularly government actors from countries with different levels of research intensity and quality. It found that excellence was a particularly apt example of a concepts' ability to become hegemonic through its ambiguity, that is, by allowing different actors to simultaneously hold different understandings of the concept. In doing so, it appears to encourage a model of differentiated integration in which Member States will further diverge in the knowledge-based economy.

The final two case studies, looked at the national and subnational level by examining research policies in the Czech Republic and Sweden. Both countries, in the first decade of the 2000s, introduced highly quantitative instruments for evaluating, steering and funding research. Both

of these systems were shown in the case studies to be deeply rooted in New Public Management concepts and ideas, and further, they have both become deeply institutionalized in their respective countries. Despite widespread concern and even resentment over the Evaluation Methodology in the Czech Republic, the academic community is attuned to its conditions and consequences. This impact is seen even though the tool did not manage to retain its most radical form, in which it would have been responsible for distributing all the research funding that was not allocated through the national grant agencies. Year after year, the government and committee responsible for this tool has felt the need to fine tune the mechanisms by which it operates and calculates results. In a large part, this is due to what is considered to be widespread cheating or gaming the system, that is manipulating the system to one's advantage in ways that were not intended and are thus considered illegitimate. Where the line falls between cheating and gaming is worth further exploration. Institutionalist models point us in two directions. A rational choice model would suggest that gaming the system does not exist, as using the term implies a normative stance. Gaming assumes that there is a right and wrong way to behave, whereas for a rational choice model these considerations are irrelevant so long as the explicit rules of the system are not broken. This shows us both the limitation of the rational choice model, but also its power. The Evaluation Methodology system did affect individual behavior, but just not always in the ways that the policymakers intended. In order to counteract some of the unintended effects and biases of the system, there has been a recent move to introduce peer review selectively as a technique to root out false positives, that is outputs which receive a high score but don't necessarily deserve it; however, it is not being used to find false negatives, that is excellent research which may have been published in a less prestigious outlet and that therefore does not receive the recognition it deserves.

Overall, the story of the development of the Evaluation Methodology is one of path dependence: despite strong criticism, it shows no sign of demise, rather there is more fine tuning and layering in an attempt to make it function more effectively. This is most likely because the narrative and politics embedded in this tool resonate with the policy community. Its appeal to transparency and the avoidance of human biases via a metric-based solution which exposes and creates competition and accountability, has legitimacy in the current social and political context.

The final case study looked into the two Swedish quasimarket instruments that regulate research funding and publication outputs. The case study focused on how the implementation of these two quasimarkets affected the way researchers approached their research, and in this way extended the hypotheses of the dissertation to the subnational level. The three main variants of the new institutionalist theories were operationalized and used to create a typology of behavior and its rationalization that was used to test for congruence between the policy instruments and the individual's behavior. Quasimarkets, as New Public Management type tools that are driven by competition and the maximization of utility, embed a causal logic compatible with the rational choice institutionalist model. Evidence was found that behavior is being shaped by both these quasimarkets. The choice of publication outlets, research projects, time allocation, and in general the "need to think more strategically" that was mentioned by a number of respondents, were all shaped by a rational choice logic. However, there were also found to be other logics at work; these were predominantly normative institutionalist logics but also included some logics that would be considered historical institutionalist. There were notable differences between early to mid-career academics and established professors in terms of which logics affected their approach. One important factor was the employment contract. The professors had much more stability built into their contracts, whereas those at lower levels were relatively unprotected from the competitive

forces of the respective quasimarkets leaving them in danger of not having time and resources to undertake the research in which they were interested. However, despite their contractual flexibility, the professors, were seen to be under different normative pressures for engaging in particular activities that they felt obligated to pursue. This shows us that there is no single intuitionalist model which can be used to make sense of individual behaviors even with the implementation of powerful new tools, rather there are overlapping influences and hence conflicting pressures and logics from all of the institutionalist variants.

The Swedish system of quasimarket tools has had strong criticisms directed its way, similar to what has been said in the Czech Republic, and although the system continues, the Swedish Research Council has been engaged by the government to come up with a supplementary peer review system for evaluating the quality of universities.

What does it mean that both Sweden and the Czech Republic have decided to re-introduce peer-review into their research evaluation systems? Is this a sign that the experiment with purely quantified instruments is at an end? The failures of these metric-based systems along with the EU's recent emphasis on peer review, has pushed policies back towards a middle ground between the techniques of peer review and metrics. However, as was discussed in the outset, both techniques have downsides, and even with a renewed use of peer review, it is evident that metric-based systems are not about to disappear. The EU, for example, in 2013 introduced the "Composite Indicator for Scientific and Technological Research Excellence" which is a metric scoreboard for ranking and benchmarking national research systems. In it, the peer review system of the European Research Council has been repurposed as a quantified data source for the larger scoreboard. This is what the audit society model of the New Public Management would expect. The expert judgment of peer review is black-boxed and turned into something which policymakers can understand and make decisions with: a quantified ranking (Sorensen, Bloch, Young 2015).

The case studies taken together show that policy instruments have powerful influences over behavior, but not in an absolute manner. They must compete with the other institutions to which individuals also belong. In terms of university-based research, these other institutions include: the academic profession as a whole, which has a strong normative and historical power in terms of its belief in academic freedom, the search for truth, the interconnection of teaching and research, and Merton's (1942) four norms of universalism, communism, disinterestedness and organized skepticism; their discipline, which shapes the prestige of particular outputs, publications, theories and methodologies; their university and its mission, organizational structures, strategies, and reward systems; and finally, the department or sub-unit of the university, which can have both devolved structural elements and powers similar to the university as well as strong normative and historical traditions, rules and cultures. These together create a complex system, in which changing a particular input or variable, such as the way funding is distributed, does have an observable impact, but not in a predictable and linear manner that can be captured by a single theoretical model that strives to unambiguously predict an outcome.

The Czech system attempted to streamline its research policy and isolate a single instrument for steering research; however, that experiment was modified before it began. Had the Evaluation Methodology been allowed to run its course as proposed, a vastly reshaped academic environment would likely have emerged. It would have created variable geometries between disciplines and institutions and most likely would have undermined the government's strategically chosen long range plans about which fields and disciplines to prioritize (see Arnold 2010). This instrument was intended to bring about more competition, which in turn would have further strengthened the strongest actors, but also would have paradoxically weakened a robust and diverse ecosystem by destroying some areas of science. While creative destruction might be considered a valuable process in the business

environment, there is a lack of evidence demonstrating that it is valuable for science and higher education.

Exploring and understanding the way in which the neoliberal capitalist model has spread beyond the economic sphere into other aspects of social life, presents a major challenge for future research. Is there evidence to support the belief that markets and corporate-style control thorough competition, metrics and benchmarking are applicable to research and education? What does the academic profession have in common with other "professions" such as health care, law, and even the arts and the way in which they are currently being governed? Can we better understand complexity so as to create systems of steering that function effectively in complex policy environments? Should competition be accepted as an unqualified good in policymaking? At what point does competition become hyper-competition: that is, when does something valuable become something destructive? Is the amount of time and energy that goes into competitive failure justifiable? Finally, how are the metagovernance techniques of the Lisbon strategy affecting the other governance levels? Are they bringing Europe together or pulling it apart? Is there *integrated differentiation* or as asked in the conclusion to chapter four, *un-differentiated disintegration*, that is a passive process in which a common tool exacerbates already existing differences and leads to a less integrated Europe. This research has shown that by focusing on the policy tools themselves and placing them in an interactive governance context, we can begin to disembed the politics and policy ideas that are critical for answering these new questions.

APPENDIX

Research Interviews

Chapter four: the interview was conducted with a Policy coordinator in DG Research and Innovation on 29.5.2013.

Chapter six: the following interviews were undertaken with researchers and administrators at large, comprehensive research university in Sweden.

1. Natural Sciences, Early career, 3.12.2012
2. Social Sciences, Mid-career, 3.12.2012
3. Social Sciences, Mid-career, 3.12.2012
4. Administration, 3.12.2012
5. Social Sciences, Professor, 4.12.2012
6. Social Sciences, Early career, 4.12.2012
7. Natural Sciences, Mid-career, 4.12.2012
8. Administration, 5.12.2012
9. Social Sciences, Early career, 5.12.2012
10. Social Sciences, Mid-career, 5.12.2012
11. Natural Sciences, Mid-career, 5.12.2012
12. Social Sciences, Professor, 5.12.2012
13. Social Sciences , Professor, 5.12.2012
14. Social Sciences, Professor, 6.12.2012
15. Social Sciences, Mid-career, 6.12.2012
16. Social Sciences, Early career, 6.12.2012
17. Administration, 7.12.2012
18. Social Sciences, Professor, 7.12.2012
19. Natural Sciences, Mid-career, 7.12.2012
20. Natural Sciences, Professor, 7.12.2012

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