

1. Towards European science: an introduction

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INTRODUCTION

Over the past seven years, the European Union has had to deal with the worst financial and economic crisis since the last century. We have managed to overcome the existential threat to the Euro area and we have developed our Europe 2020 strategy for smart, sustainable and inclusive growth, with a strong focus on science, research and innovation.

The European Union remains the largest knowledge factory in the world: it accounts for almost a third of global science and technology production. And despite the crisis, Europe and its Member States have managed to maintain this competitive knowledge position.

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I am a firm believer that science, engineering and technology are vital for the health of our society, economy and environment. We must look to the future, to anticipate and prepare for new developments rather than react to them. (EC 2014; STAC report: 1)

This is the opening by the then European Commission president José Manuel Barroso in commenting on the report, “The Future of Europe is Science”, presented to him by his Science and Technology Advisory Council (STAC) in 2014. The report was presented and further discussed at a high-level conference with the same title, convened in Lisbon in early October 2014. It is part of the promotion and further elaboration of Horizon 2020, the new Framework Programme (FP) for research for the EU, guiding the EU research and innovation funding for the years 2014 to 2020. With nearly €80 billion of funding available over these seven years, it is the biggest EU Research and Innovation program ever (EC 2015a). At a time when the overall EU budget has shrunk slightly, this program provides an increase of the funding base for science, innovation and research by nearly 30 per cent compared to its precursor, the 7th Framework Programme (FP 7).

There is little doubt that science and research has become an important policy area in the European context in recent years, not least within the

EU. The past decade, since the early 2000s, has implied a steadily growing interest in these issues, and an intensification of policy discussions and initiatives to promote science, research and knowledge development within the EU (see for instance Chou and Gornitzka 2014). One of the starting points for these discussions has been the concept of the ERA, the European Research Area, launched in 2000 to present a new vision for knowledge development and growth within the union. The main aim, as it is expressed by the European Commission, is to create a “European market for research”, where knowledge, researchers and technology can circulate freely within the Union. While early analyses of the development of the ERA suggest that the initiative had a somewhat rocky start (Edler 2003; de Elera 2006), we know now that the concept and its ideas have survived. Originally a vision for 2010, it was recently renewed and is now included as one of the centrepieces of the Europe 2020 strategy (European Council 2012).

During this time, the ideas of the ERA and its ensuing policy initiatives have endured one of the more turbulent times in the history of the European Union: the global financial crisis of 2008 and the economic, political and social challenges of the union that followed. Thus despite significant financial pressures and economic recession in several member countries, spending on science, innovation and research has increased. Furthermore, the period since the launch of the ERA has been characterised by a large increase in the number and scope of policy initiatives in the area of science and research policy (Chou and Gornitzka 2014), as well as a significant focus on new policy ideals and rhetoric (Erkilää and Piironen 2014). Supported by a transnational policy discourse of higher education and research – stressing the functional role of science and education for economic competitiveness and growth (see e.g. King 2009) – the EU has taken an increasingly prominent role in discussions about science and research as well as higher education (Corbett 2005; Keeling 2006). Through explicit links to political reform agendas of the European project, most notably the Lisbon and the Bologna processes respectively, the European Commission has established a firm position for itself in the policy discourse on higher education and research, as well as securing the influence of European-level objectives in the future development of these areas within the European Union (Keeling 2006: 203).

While the political rhetoric of the commitment to science and research is evident, recent developments show that this position is not unquestioned. In early 2015, the new president of the Commission, Jean-Claude Juncker, announced an “Investment Plan for Europe” for which he plans to invest in new infrastructure to help rebuild European economies in the wake of the crisis (see EC 2015b). His suggestion involves cutting €2.7 bn from the research, space and innovation budget – a proposal to which

a large number of science organisations recently protested (EUA 2015). Not long before that, the EC president was also facing strong opposition to his decision to scrap the position of the Chief Scientific Advisor to the Commission, a decision that made science organisations across Europe heavily protest and question the intentions of the EU president to live up to his promises to protect the role of science in the developing European union context (Sense about Science 2014).

Despite these recent events, the notion of the ERA and the ideal of a common European market for science, research and education seems to persist, and the ideas and policy ideals have survived, and in some ways even thrived, during this critical period. Why has science and research policy become such a key issue and central concern for the EU? What does the expansion and elaboration of this new policy area – and the new policy mechanisms, tools and political rationales that follow along – really mean, and what does such a development entail?

This book will take issue with developments in European science and research policy and governance that have taken place over the past years. While most existing studies focus on the early years of the ERA and European initiatives (Edler et al. 2003), we will take a much-needed look also at the more recent developments and at what has proven to be more far-reaching and continuous efforts to construct a European research area. While significant attention has been paid to analysing contemporary policy developments in higher education and research, this research appears rather fragmented. These studies have focused on either specific national domains or the European level, and have analysed primarily policy initiatives and developments (e.g. Chou and Gornitzka 2014; Edler et al. 2003), the development and functioning of one or a small set of new governance mechanisms or policy programs (e.g. Edler et al. 2014; Luukkonen et al. 2006; Nedeva 2013), or have focused on the political dynamics of new policies and the role of “policy entrepreneurs” in driving change (Corbett 2005). In addition, most studies are linked to a singular analytical framework, most notably starting in political science approaches to governance, or in related areas such as law or science policy studies. This book is an attempt to build on these, and other, previous studies and move towards a synthesis of this knowledge area.

AIM OF THE BOOK

In this book, we aim to take the first steps towards a more comprehensive understanding of these developments, drawing out a framework for understanding not only new policy initiatives and governance systems, but also

the potential implications of such changes on the essential relationship between science governance and research performing actors and organisations. Our starting point is that current transformations seem to go beyond the scope of a single and unified change towards what is often assumed to be a “multi-level” governance system of science in Europe (Edler et al. 2003; Chou and Gornitzka 2014). The change involves a transnational governance process, interacting with national efforts, but clearly also an attempt to create something new at the transnational level.

This “something” we analyse as the development of a European-level research space. A research space is defined as the funding and policy space of research activities and actors, within which the rules of knowledge production, knowledge legitimacy and knowledge use are negotiated (Nedeva 2013). Such a space thus holds the “essential” relationships between funding agencies, governance actors, and the researchers and research organisations of that space. These relations are essential to the extent that research practices are dependent on them for resources, support and legitimacy.

The transformation into a new research space thus involves many elements; it involves deeper integration and new political initiative for governance and funding, new means and modes of governing, accompanied by new policy ideals and rhetoric, and new ambitions and aspirations for a common European area for science and research. It also holds changes in interaction patterns, regulatory mechanisms and principles, but also a wider normative and cognitive change to the ideals, models and expectations for what research and science is, how it should be structured and governed, and what is expected of science and science organisations. It also holds changes to the research performing organisations and their researchers, and the relations between these actors and the wider policy and governance framework and actors. Thus, such changes implicate the development of a transnational space for science and research at the European level, holding what we can assume to be significant implications for science and research activities, actors and organisations.

In this book we are interested to explore the development of this European science space and what it means. The main aim is thus to explain how conditions for science are shaped at the transnational level, and what they mean for the organising of science. The following questions guide our work:

- Is a European-level research and science space developing and, if so, what does it entail?
- What are the implications of this development – for science and research and for the overall governance of the scientific field?

- What novel issues emerge in the analysis of the dynamics of interaction between the European and other research spaces?

Enhancing the understanding of the dynamics inherent in contemporary changes to European science governance is important for three main reasons. First, it is practically expedient: if we can better understand contemporary policy initiatives and their relation to changes in the overall structuring and organising of the scientific field, this knowledge can be used to enhance both the effectiveness and efficiency of policy and policy-making for science and research. Such knowledge is relevant to both policy-makers and the science policy experts and advisors that take part in forming science governance at the national as well as the European levels. Second, our study is of interest to scholars aiming to understand the dynamics of science systems more generally, and the inherently complex relationships between the governance, organisations of knowledge, and the epistemic properties of science and scientific activities. Third, a more elaborate understanding of the dynamics of science governance and organising in the European research space opens new avenues to understand the intertwined relations between research spaces at different levels of social aggregation: that is, how transnational research spaces interact with national, local or other regional research spaces. This suggests, also, that we can identify driving forces to change outside of political and policy-related domains, highlighting the role of the profession and the epistemic conditions of science as a driving force for an increasing transnational organisation of science and science policy.

STRUCTURE OF THE BOOK

We begin our exploration of the development of a European space for science and research by elaborating a framework for understanding the current shifts in European science policy and organisation, and the dynamics that this change may create in the field of science and research. Thus, in Chapter 2, we describe the current and past transformations of the European science space as a transition between two relatively stable and persistent stages of science support, from what we term an era of “Science in Europe” to the development of a coherent space that we term “European Science”. This transition involves, we argue, three significant parts: 1) a change in the rationale for supporting research and building research capacity at the European level; 2) changes in the targets for policy intervention; and 3) a transformation of the organisational architectonics of the European science space. What this shift contains, and what it entails,

is further elaborated in Chapter 2. What we can note here, however, is that this framework takes account not only of specific policy and governance mechanisms and initiatives being developed, but attempts to bring these changes into context to understand how these implicate the conditions for science and scientific activities and how these are continuously negotiated and revised. Building on the notion of “research spaces” elaborated by Nedeva (2013), we set out to explore the multifaceted relationships and interactions between governance, institutional context(s) and the organisations of science at different socio-political levels, for example, the national, the European and the global levels.

Our framework sets the stage for an increasing focus on the dynamics of change in contemporary governance of science and research. Particularly, we focus attention beyond the formal policy development process and the specific policy initiatives involved, to enhance understanding of the related and supporting developments in the wider European research space, as well as in related national – or other regional – research spaces. Our framework highlights the intertwined changes in rationales, governance mechanisms, and the organisational dynamics and structures that carry such changes with them.

Based on the distinction of the three factors involved in the transition from “Science in Europe” to “European Science” – policy rationales, target of intervention (particularly funding), and organisational architectonics – we explore the development and shape of the new European research and science space, and what it entails. The remaining chapters focus on each – or a combination – of these three factors. The chapters thus provide an overview, or an exclusive selection, of the kinds of processes and dynamics involved in the construction of a European research space, rather than an exhaustive list. Our contributors represent different research fields and analytical traditions, including political science, sociology of science, science and technology studies, and organisation studies. They are brought together here to begin the journey towards integration of this knowledge domain. Our selection of chapters is thus primarily intended to inspire, to guide and to illustrate the potential dynamics of a developing European research space, and to put focus on a new set of issues and a new agenda for the study of science dynamics and science policy developments.

We begin this journey into new empirical territory in Chapter 3, with an analysis of the development of a new rationale for science policy in Europe: the evolution of the concept of the ERA, the European Research Area. In this chapter Terttu Luukkonen explores the development and continued revision of the ERA concept over its first ten years. She shows how the agenda gradually has changed from being a policy for the promotion and development of science, to one where the role of science has

become elevated to promote the social and economic development of Europe, thus serving the broader European Union agenda. In this way, the ERA concept has become a “science for policy” agenda. In her account of the changes, Luukkonen stresses the development of the ERA concept as an active and dynamic process, uncovering an interaction between the overall policy concept, and the more specific policy tools or mechanisms promoted within it. Particularly, the central role of the new funding mechanism, the ERC, is stressed, which was both an element in the ERA agenda but also contributed to shaping the subsequent policy agenda and legitimising the new policy rationale.

The centrality of the ERC for the development of the European research space is further elaborated in Chapter 4, where Dietmar Braun focuses attention to the role of the ERC as a new target for policy intervention in the developing space. He analyses here the dynamics of the evolving European Funding Area: the space where a multitude of funding agencies and mechanisms at both the national and the transnational levels interact to form a coherent whole. Braun directs attention to the dynamics and, potential or real, conflicts between the different actors and actor constellations in this developing space, exploring how the creation of the ERC alters the interactions and relations of actors in this space. Particularly the interaction between the national and the European research spaces is highlighted, as the ERC has opened new avenues for direct interaction between the European research community and European funding, thus in part bypassing the national level of funding support. This hosts one of the strengths but also one of the potential sources of conflict within the developing European space.

In Chapter 5 we turn our attention to the third aspect of change, the organisational architectonic of the European research space. In this chapter, Åse Gornitzka analyses the changes in the executive governance capacities of the European Commission (EC) that are forming the organisational backbone of the European research area. The EC is one of the central actors in this space, hosting debates of the ERA as well as organising the ERC. This chapter thus analyses the development of governance structures and procedures for hosting the new policy rationales of the EU in science policy, highlighting both the striking inertia in the governance system and the parallel signals of change in terms of the introduction of new research policy instruments developed outside or on the fringe of existing governance systems. Gornitzka discusses, from these developments, the possibilities and prospects of realising the policy imperative of a common European research space.

While Chapters 3 to 5 focus directly on each of the three notions of change – policy rationales, target of intervention and (the most policy

relevant part of the) organisational architectonic – the remaining chapters of the volume broaden the view of the organisational dynamics of the new policy rationales and the influence of the changing policy targets. We here explore, in various ways, the interrelation between policy rationales – both European ones but also global ones inherent in the science and research fields more generally – and the changing forms of organising and organisation that both signifies the development of policy and policy rationales, and which may follow from such policy changes. The new funding mechanisms and policy target – the ERC – is a central but largely implicit aspect of such dynamics, which is evident from all the remaining chapters.

Linking directly on to where the previous chapter ended, Chapter 6 explores the interaction between the policy ambitions and agendas of the EC with other organisational actors and attempts to build a European science space. Here, Linda Wedlin and Tina Hedmo analyse the development of what is largely a global policy rationale for enhancing “quality” and “excellence” in higher education and research, and how this plays out in the European space. They analyse the development of two mechanisms for governance at the European level, the European Quality Assurance Register (EQAR) and the ERC, stressing the interaction between the EC and national governments and intergovernmental processes (such as the Bologna process), national funding agencies, national and transnational policy and interest organisations, scientific organisations and many others, in shaping new governance mechanisms and policy rationales for European science. By legitimising both the increasing role of the EU and other transnational attempts in governing European science, this policy rationale and the rhetoric of quality and excellence have become important elements in the evolving European research space.

In the following chapters, we elaborate on the role of research performing organisations and academic associations and their role in the European science space. First, in Chapter 7, Ivar Bleiklie, Gigliola Mathisen Nyhagen, Jürgen Enders and Benedetto Lepori reflect on the developing knowledge ideals and their implications for university organisation. Linking directly to the issue of quality assurance and measurements of excellence of the previous chapter, the authors here elaborate on the role of these mechanisms for university organisation. Arguing that the promoted knowledge ideals surrounding higher education and universities show evidence of standardisation as well as diversity, the universities are facing a complex set of models and ideas on which to react. Through the influence of funding arrangements, evaluations and other governance mechanisms, including those at the European level, a space has opened for a partly new set of actors in

university organisation and management. Rather than simply more tightly managed, university hierarchies have thus been penetrated by influential academic elites that influence and shape knowledge organisation within universities. This has also opened new ways for universities to interact and build networks with other organisations in the evolving new, largely transnational, space for science.

Elaborating in part the arguments from the previous chapter, the next one, Chapter 8, explores the role and prominence of a particular kind of science organisation: the academies of science. These academies are to a large part learned societies organising the elites, and as such these have been a more or less central organising force in science almost since the Middle Ages. In this chapter Lars Engwall describes the emergence and expansion of the academies in Europe, and shows how these very recently have expanded and taken form as European-level cooperative bodies. Analysing the basic characteristics and functions of these academies, Engwall argues that these organisations have taken an increasingly important role in policy-making in the European science space. These academies have a dual role, as they partake in both “policy for science” and “science for policy” discussions (see also Chapter 3 for this distinction). As partakers in policy-making and debates, the academies are likely to have a continuing prominent role in the development of the European science space.

Following the exploration of the role of universities and of academies in the developing European space for science and research, we turn to a much less studied yet prominent form of organisation in the European landscape, namely research institutes. In Chapter 9, Laura Cruz-Castro, Koen Jonkers and Luis Sanz-Menéndez analyse the strategies employed by different kinds of research institutes to meet the challenges of internationalisation and, particularly, Europeanisation. Building an analytical framework for understanding how the organisational characteristics of public research organisations may influence the strategies chosen for internationalisation, the authors here suggest that internationalisation at the organisational level of public research institutes is dependent on the external autonomy and internal authority of the institutes. As most research institutes have limited organisational autonomy as well as managerial discretion, this seems to significantly limit the potential of strategic Europeanisation of such research organisations and, thus, likely constrain the further development of a coherent, fully transnational, European science field for these organisations.

The book ends with a concluding chapter, where we draw together the main findings of the previous chapters and discuss the interrelations between the three dimensions of change and the implications for

understanding the creation of the new era of European science and a coherent European research space.

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