SJPA
24(4)

Policy Hybridization: Continuity and Change in Swedish Research Funding

Marta Cocos*

Marta Cocos,
School of Humanities, Education and Social Sciences, Örebro University, marta.zdravkovic@oru.se

Abstract

This paper follows recent calls to focus on how policy hybridity is formed using a research policy case, an area that has undergone profound changes in the last four decades. More specifically, it focuses on the case of Swedish research funding and its major institutional reorganization in 2000. Following the argument that conflicting institutional logics often prompt institutional hybridity, the paper conceptualizes and examines the role of three institutional logics present in research policy, namely academic excellence, utility of research, and funding efficiency. Using quantitative policy document analysis, a secondary literature review, and in-depth interviews, the paper reveals that, while a heated conflict existed between the proponents of the first two logics, the third was largely undisputed and, in fact, accommodated the final policy solution. The study's results show that hybridity choices in Sweden can be linked to a combination of negotiations between vested interests, the state's pursuit of better management and efficiency, strategic political action, and historical path dependency. Finally, this paper proposes several implications of segregation and other hybridity choices.

Keywords:
policy hybridity formation,
Swedish research funding,
segregation,
institutional logic,
path dependency,
strategic political action

Introduction

Research policy (RP) has been undergoing profound changes in the last four decades. The literature outlines several policy logics that together have been shaping the policy changes in Europe. These logics are formed around the twofold question of what is good research and how should it be funded? Firstly, *academic excellence* logic propagates the value of outstanding research (Braun 2003). Secondly, the *utility of research* argues that good research should be relevant for society and industry (Persson 2001). Thirdly, the *funding efficiency* logic propagates the rational allocation of available resources (Ferlie et al. 1996). These three logics provide conflicting yet legitimate guidelines for how to fund research activities. Their subsequent accommodation produces significant challenges for policy actors. For example, if policy-makers embrace one logic over another, they might risk stifling scientific freedom or decreasing scientific productivity, in addition to potential protests from proponents of the logic that has been neglected. However, these are not the only options. In this paper, I show how using institutional logics (ILs) and hybridity approaches can provide a more-complex understanding of how policy pressures are managed.

Sweden represents an interesting case of a country whose research funding system has undergone dramatic changes (Fridlund and Sandström 2000). In 2000 alone, its largest bodies managing more than 34% of public research funding were established or reorganized. Prior to that, the system had been expanding for decades, and problems of coordination and efficiency had been raised (Benner 2003). The economic crisis that struck Sweden in the 1990s revealed a clear need for restructuring. Expectations were high, and the process

Scandinavian Journal of Public Administration
24(4): 71 - 95
© Marta Cocos and School of Public Administration 2020
ISSN: 2001-7405
e-ISSN: 2001-7413

***Marta Cocos** is a final year political science PhD student at Örebro University. Her field of interest is research and higher education policy, and particularly research funding. Her PhD focuses of research policy in several European countries, analyzing how different policy beliefs shape the policy hybridity. She belongs to the new institutionalist group of researchers, and combines institutional logics, and historical institutionalist approaches to build understanding of policy hybridity.

incited heated debates and a number of failed governmental attempts at restructuring before the final solution was found. Because this institutional change was so encompassing and was seen as the solution to policy tensions avoided for decades, this particular policy change represents an opportunity to observe the management of conflicting ILs. As the country prepares for a new research policy in late 2020, looking back and reviewing lessons learned from earlier policy choices is useful.

I address the case of Sweden by combining institutional logics and policy hybridity approaches. Using an IL approach, I address and enumerate a combination of institutional cultures, structures, norms, rationales, identities and imperatives that are placed on the research funding system. Further, once enumerated, I trace ILs in the policy discussion and analyze how they shape the hybridity outcomes in Sweden. Further, using a policy hybridity approach, I unveil the complexity of policy-making and show how policy pressures from conflicting ILs can be accommodated on different policy levels and thus, by different sets of policy actors. Because my approach includes multi-layer analysis of hybridity, I combine policy (Flanagan et al. 2011, Kay 2006), organizational (Kraatz and Block 2008, Skelcher and Smith 2015) and policy instruments (Howlett 2005, Lascoumes and Le Gales 2007, Cocos and Lepori 2020). I also demonstrate how Sweden dealt with the pressures on the highest policy level by segregating ILs in separate, newly formed RFOs. Because of these policy choices, the focus of my analysis in this paper will primarily be on segregation and the highest level of policy actors, and less on other hybridization choices. Finally, I discuss several of the implications of these choices in terms of their effects not only on the research actors but also the on dynamics between ILs.

The aim of this paper is to analyze why Sweden ended up with its particular policy hybridity in 2000 and what some of the implications of this might be. More specifically:

1. *In which ways did institutional logics shape the policy hybridity in Sweden?*
2. *Which other factors contributed to shaping of Sweden's policy hybridity?*
3. *What are the possible implications of the hybridity structure in Sweden?*

In what follows, I begin by laying out my theoretical grounding, and conceptualizing three ILs in research policy. Based on a quantitative analysis of policy documents and interviews with key respondents, I then further conceptualize the three ILs as exemplified in Swedish RP and analyze their roles and those of other factors (such as strategic political action, vested interests, and path dependency) in the formation of hybridity. Finally, I propose several implications of different hybridity choices.

Theoretical Grounding: An Institutional Logics Approach

Institutional logic can be defined as an "overarching set of principles that prescribe how to interpret organizational reality, what constitutes appropriate

behavior, and how to succeed" (Thornton 2004, 70). In other words, they are "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality" (Thornton and Ocasio 2008, 101). Thornton (2004) outlined seven ideal types of rationalized ILs: family, religion, state, market, profession, corporation, and community. These are archetypes which, when applied to a particular policy field, are shaped into applicable categories.

Each organization has a central logic that guides its functioning (Thornton and Ocacio 2008), although multiple logics within organizations are common across a wide variety of fields (Besharov and Smith 2014). Policy instruments can integrate various ILs via combinations of rationales, actors and delegation design (Cocos and Lepori 2020). Organizations frequently confront environments with multiple ILs and, thus, reflect these different logics in their structures (Greenwood et al. 2011; Kraatz and Block 2008; Besharov and Smith 2014). Public administration literature also emphasizes the *hybrid* nature of public governance arrangements (Christensen and Lægreid 2011), which embed different logics instantiated in governance modes (Capano 2011), administrative paradigms (Meyer et al. 2014) and policy narratives (Polzer et al. 2016).

The presence of multiple ILs confronts policy actors with different, yet legitimate, prescriptions for how to perform certain tasks (Zilber 2002). To the extent that the logics are not mutually compatible, they translate into fragmented and contending institutional pressures (Friedland and Alford 1991; Kraatz and Block 2008; Scott 2014), inevitably generating challenges and tensions for institutions (and policy actors) exposed to them (Greenwood et al. 2011).

A way to deal with the contrasting policy demands is to "hybridize" policy by adjusting several of its elements and allowing a combination of competing ILs within institutions (Thornton and Ocasio 2008; Battilana and Lee 2014; Denis, Ferlie and Van Gestel 2015). In this process, the existing IL provides frames and narratives to guide resistance (or openness) to a new logic (Thornton, Ocasio and Lounsbury 2012).

Recent work in institutional literature recognized the need to analyze policy hybridity on multiple policy levels, including instrumental, organizational, and system level (Cocos, Lepori and Reale forthcoming). Due to the multilevel focus, their approach to the analysis included borrowing from organizational literature (Kraatz and Block 2008, Skelcher and Smith 2015), and combining it with policy and instrument mix literature (Flanagan et al. 2011, Greenwood et al. 2011, Lascoumes and Le Gales 2007, Cocos and Lepori 2020). They showed that hybridity can be accommodated via: a) *Compromising* which incorporates elements of conflicting logics within the same policy instrument (Kraatz and Block 2008)[1]. In research funding, this occurs through the design of instruments combining different evaluation criteria, such as policy relevance and academic quality; b) *Segmentation*, which is characterized by separating conflicting logics into different sections within a single organization. In research funding, this means having different instruments embedding distinct logics within the same research funding organization (RFO); c) *Segregation* which involves separating logics into distinct units, such as the establishment of new RFOs, each enacting different institutional logic (Skelcher and Smith 2015).

The three types of hybridity do not exclude, rather most often they complement each other. They are combined in different hybridity constellations in different countries. These country-specific combinations are interesting to examine because even though confronted with the similar policy pressures, different hybridity forms emerged in various countries (Persson 2008). Some (Italy, the Netherlands, etc.) have numerous hybrid instruments; some have organizations that are highly hybrid (e.g., Norwegian Research Council); others have instead preferred system hybridity, i.e., forming new research funding organizations (Sweden; Cocos, Lepori and Reale forthcoming).

Formation of hybridity was analyzed earlier, and a number of possible shaping factors on organizational or system level were outlined. Greenwood et al. (2011) note position within a field, organizational structure, ownership and governance, organizational identity. On the policy level, Christersen and Laegreid (2010) note polity (strategic political action), culture, and environmental features, Persson (2008) notes different national policy styles, and Greenwood et al. (2011) outline specific politico-administrative traditions, geographic, historical path dependency, and cultural context as important factor shaping policy hybridity.

However, we still do not understand how multi-level hybridity is shaped, i.e. how policy demands are solved by implementation on different policy levels (including system, organization and instrument level). To understand specific policy field, which has own complex structure and specificities, in-depth studies should be conducted. In this paper I aim to examine Swedish case and I ask how can we understand why Sweden arrived at its particular policy hybridity, and what might some of its implications be?

A Clash of Three Institutional Logics in Research Policy

Following the argument that conflicting institutional logics often prompt institutional hybridity, in this section, I examine three ILs that form RP (Battilana and Lee 2014; Denis, Ferlie and Van Gestel 2015). Relying on higher education and RP literature, I find that RP is shaped by three distinct ILs (Elzinga 2012; Capano 2011; Burke 2005; Grossi, Cobija and Strzelczyk 2019; Braun 2003). They are formed around and can be analyzed by asking: What is good research and how should it be funded?

The first IL in RP represents academic excellence (AE) which has a long tradition in research policy. According to this logic, the core mission of science is the pursuit of excellent knowledge for its own value. Knowledge production is driven by Mertonian norms for science (Sörlin 2005), where the leading principles are communalism, universalism, disinterestedness, originality, and skepticism. Scientific freedom and autonomy are at the core of AE, and authority is based on professional seniority (Kubra Canhilal et al. 2016). Bottom-up, curiosity-driven research is essential for knowledge advancements that are free and open to the new and the unforeseen. Therefore, the scientific community is trusted to establish its own peer-review system where these criteria and the prospect for scientific excellence are accepted as sufficient standards for allocating public research funding (Braun 2003). In regard to Thornton's (2004) ideal-type ILs, *AE* belongs to the *Profession* logics.

The second IL stands for utility of research (UR) and is closely related to the idea of a knowledge-based society. This logic stems from the 1970s when explicit societal and economic goals started being emphasized by governments, in research funding (Guston and Keniston 1994), hence there was a shift towards strategic research and foresight (Martin and Irvine 1989) as well as the professionalization of research policy (Elzinga 2012). The logic follows a belief that knowledge and innovation will lead the future development of countries (Benner 2009), and universities are seen as central actors in producing well-being and prosperity (Virtanen, Silander and Pietila 2014; Hallonsten and Silander 2012). This idea broadens the core mission of science (Elzinga 2012; Braun 2006) as now research must demonstrate economic and societal benefits (Jacob 2009; Holmberg and Hallonsten 2015; Narvinger et al. 2004), and industrial and political interests have been integrated into the evaluation, organization, and performance of university research (Ziman 2000; Benner Sandström 2000a,b). Science is seen as a "source of strategic opportunity" (Edqvist 2003, Gibbons et al. 1994), and thereby, the selection process of "good research"should also include representatives of society and industry. In terms of Thornton, Ocasio and Lounsbury's (2012) ideal-type ILs, *UR* belongs to the *State* logics.

The third IL, standing for funding efficiency (FE)[2], is a New Public Management (NPM) inspired logic that, in many countries in the 80's, started the *age of accountability* (Elzinga, 2012) in research policy, creating what has been called *academic capitalism* (Slaughter and Rhoades, 2004). This logic propagates a belief that a system where an automatized (indicator-based), administratively less-costly system of evaluation will identify the best research rather than trusting such decisions to people. In many Western countries, FE has been associated with a broader shift in public administration toward managerialism and follows the belief that we can and we should manage science (Slaughter and Leslie 1997). In RP, this has meant a dramatic change in regard to traditional budgeting (Geuna 2001) and a shift from direct state control to management at a distance using economic incentives to steer behavior via competition for funding (Ferlie et al. 1996), or in other words, granting greater autonomy (Capano and Pritoni 2018) but, at the same time, increasing control (Persson 2012) via a *"performance-based funding regime"* or *"contracting culture"* (Sörlin 2007; Braun 2003). In regard to Thornton, Ocasio and Lounsbury's (2012) ideal-type ILs, *FE* belongs to the *Market* logics.

All three logics are found to different degrees in most Western countries. However, even confronted with similar types of policy pressures as those described above, countries have developed diverse institutional responses[3] (Cocos, Lepori and Reale forthcoming).

Methods

The institutional change in Sweden in the early 2000s has been the focus of extensive research. For example, Benner and Sandström (2000) demonstrated how diverse institutional norms are found in various funding organizations. Further, Benner and Sandström (2000b) showed how path-dependency can be traced in the changing organization and orientation of research councils.

Similarly, Persson (2008) identified historical as well as political legacies of policy development in the process of the creation of VINNOVA, an innovation agency. Benner and Sörlin (2007) examined the introduction of strategic research and its accommodation within private foundations. Other authors have focused on the emergence of innovation system notions, mode 2, the promotion of excellence and strategic priority, and their accommodation within VINNOVA (Jacob 2006; 2009; Schilling 2005; Eklundl 2007; Lundequist and Waxell 2010; Hallonsten and Silander 2012; Edqvist 2003).

The goal of my study is not, however, to repeat earlier efforts but to analytically approach this event with a focus on the three ILs and other explanatory factors, with an aim toward understanding why these specific hybridity choices were made in the Swedish case. To that end, I started by conducting a secondary literature review and in-depth interviews and then conducted quantitative mapping of ILs in different ministries at different times (with my focus on the system level hybridity).

First, I reanalyzed the findings from earlier research and policy documents with a focus on the role of institutional logics and factors shaping policy hybridity. The literature considered the events leading to the policy reorganization in 2000, a time of intensive policy changes, and the developments thereafter. With the same focus, I conducted seven key-respondent interviews with individuals who had been part of the RP formation during the selected period. Three of these were part of the scientific community, and four held politically assigned public administration positions at the time. I focused on system-level actors due to the specificity of the Swedish system, i.e., the primary method for policy adjustments has been through segregation (Cocos, Lepori and Reale forthcoming). The selection of interviewees was conducted based on available information about the involved actors in the official documentation and snowball sampling, a method shown to be suitable for reaching key respondents (Morgan 2008). Interviews were in-depth, semi-structured, and lasted an hour, on average. The questions concerned the respondent's involvement in the process, the reasons organizational changes were initiated, the policy debate, and the possible reasons for policy decisions.

After developing a broad understanding of the policy changes at the time, I conducted quantitative mapping of ILs in different ministries' policy documents at different times. The aim of the mapping was to quantitatively showcase the presence of the logics by breaking down the analysis to specific ministries and documents. The discrepancies I found between the different documents pointed toward tensions and points of agreement between policy actors that co-shaped the policy hybridity.

For the quantitative mapping, I applied a vocabulary approach for quantitative content analysis, which involves coding of text (Loewenstein, Ocasio and Jones 2012). All documents were read in detail, and paragraphs within texts were used as units of analysis. In each paragraph, reference to a particular IL was coded and noted[4]. With this aim, I developed a coding table (see Appendix 1) that incorporated a dictionary of vocabularies associated with each logic, similar to an approach used for prior research (see for example, Polzer et al. 2016; Meyer and Hammerschmid 2006; Suddaby and Greenwood 2005). The coding table was formulated by drawing on seminal publications on

RP in Europe where different policy beliefs were discussed in depth (Slaughter and Rhoades 2004; Jongbloed and Lepori 2015; Geuna 2001; Elzinga 2012; Braun 2006). Coding reliability was ensured by repeated coding, with all differences reconsidered and resolved.

I analyzed official RP documents from two periods: 1997/98 and 1999/2000, conducted by the Ministry of Education and Research (MER) and the Ministry of Enterprise and Innovation (MEI). The two ministries essentially shaped the process of institutional reformation, even though other ministries were invited to comment on the propositions made to the government. The reviewed documents are official calls for investigations, ministerial reports and propositions to the government, and summaries of the comments from relevant organizations[5]. In total, 10 official governmental documents were coded containing 364 pages and 1680 paragraphs. The majority of the documents (7 of 10) were produced by the MER, and most of the documents (6) were published in 1999.

A Historical Overview and the Presence of the Three ILs in Swedish RP

A Brief Historical Overview of Tensions Between the Three Logics in Swedish Research Policy

The current organization of Swedish research funding agencies stretches back to the 1940s, when, in the aftermath of the Second World War, the value of science was demonstrated beyond a doubt (Persson 2012). In the period that followed, a research council was established to strengthen both basic and applied science. The research funding system was enriched in the 1960s when a set of mission-oriented agencies was established to promote applied research (Benner and Sandström 2000b). This layer was further strengthened in the 1970s, when new mission-oriented agencies were established (some agencies were reorganized) covering a diversity of sectoral research areas and applying a more-interventionist model of governance (Stevrin 1978). In the following period, a modest reinforcement of basic research was achieved through the formation of the Swedish Council for Planning and Coordination of Research (FRN), as well as three research councils under the control of the scientific community (for natural sciences, medicine, and humanities and social sciences). The 1980s brought the increased importance of private R&D funding as several large Swedish companies (e.g., Scania, Ericsson, and Volvo) began to invest increasingly in applied research (Edqvist 2003). Although this was private funding, it influenced the policy debate and public funding. In the early ’90s, the funding system was further enriched by a number of foundations dedicated to strategic research funding (Holmberg 2012). These were formally independent foundations with private legal status despite being publicly funded from wage-earners’ funds (Benner and Sörlin 2007). Finally, in 1995, Sweden joined the European Union, which implied access to yet another source of funding for its research. The majority of these funds were dedicated to applied research (Schilling 2005).

This brief historical overview of the research funding system elucidates that the pluralism of Sweden’s RP goals was organized via different layers of

funding organizations with fairly distinct roles and modes of operation (Persson 2008; Öquist and Benner 2012; Christersen and Laegreid 2010). Different fields of science had been kept apart to prevent "spoiling" the pure forms (Benner and Sörlin 2008). Consequently, the funding system became fragmented (Benner 2001, 2003; Sandström, Heyman and Hällsten 2005), and within it, different layers exhibited conflicting understandings of the purpose and role of science (Edqvist 2003). This structure led to a weakly governed and decentralized funding system (Persson 2012; Hallonsten 2011; Benner 2009).

In the early 1990s, an economic crisis struck Sweden, seriously jeopardizing its financial and institutional systems (Benner 2012). This event is argued to have triggered institutional reorganization and initiated the process of solving the problems of weak governance. Furthermore, the need to conserve resources was clear, and reorganization was used as a way to withdraw some of the resources dedicated to research as well as to promote strategic funding (Benner 2012).

The process was turbulent and conflict-filled. A heated policy debate was sparked in 1995 when the Ministry of Education commissioned two investigations aimed at evaluating the research funding system and offering suggestions for reform (Edqvist 2003). In summary, these investigations proposed aggregating the research councils into a single government agency, the Board of Research Councils, within which the research councils would retain a large degree of their independence (SOU 1996:29; SOU 1996:20; Edqvist 2003). Furthermore, the investigations proposed that a pluralist organizational structure of several small and large agencies should be rationalized, ideally as sectoral research councils, where research and sectoral interests were given equal weight on the board. Finally, the investigations suggested that a share of technical and innovation research resources should be transferred to universities to enrich their long-term research capability (SOU 1996:29; SOU 1996:20). When the reports came out, the universities were enthusiastic about the recommendations, the research councils somewhat less enthusiastic, and sectoral and other agencies[6] highly critical (Eklund 2007; Dnr U1998/4107/F). Consequently, when the government presented its research bill in 1996, it adopted few of the proposals; however, reducing NUTEK's[7] funding of technical research was supported (although that funding was not transferred to universities, as previously proposed). The changes were not well-received, and the government appointed a new high-level inquiry in 1997 (Edqvist 2003).

The new report (SOU 1998:128a,b) went even further in protecting university autonomy and attacking sectoral research, and although it was meant to placate the policy arena, it did the opposite (Benner 2001) by threatening to remove all resources for funding industry-relevant technical research (Eklund 2007). Its authors argued that public investment would result in better returns if channeled directly into basic research at universities rather than through NUTEK. Furthermore, instead of separate sectoral agencies, there should be academic-led research councils for the social sciences/humanities, medicine, natural sciences, and technology, as well as an organization responsible for transdisciplinary research and cooperation between the research councils (Gustavsson 2000). When it was released, the report was supported by the disciplinary research councils and most of the universities; however, it was met by a storm of protest from the other organizations involved (Persson 2008; Dnr

N1999/13161/ITFoU). Subsequently, the government's main problem was the growing mistrust between departments, and not surprisingly, it was unable to act on the proposals (Edqvist 2003).

In 1999, both the MER and MEI commissioned investigations since considered to mark the beginning of finding a solution. The first investigation[8] suggested separating the research funding system into two kinds of organizations: research councils, which should be merged as a single forum designed to strengthen coordination between different policy layers and to function as a consultative and integrative mechanism (Edqvist 2003), and three sectoral research councils reflecting the research community's strong influence (Persson 2008). Similarly, the second investigation[9] suggested that an "R&D agency" be established to manage most of the research funding functions under the MEI. When the two investigations were released in 1999, they presented a compromise in the heated RP debate, and all the relevant organizations accepted the proposals (Dnr U1999/4040/F).

The Three Institutional Logics in Swedish Research Policy

To understand the above-described policy developments in light of the underlying ILs, I applied a vocabulary approach to the key policy documents. By doing so, I found that the three ILs have been translated into the Swedish context, often aligned with the prerogatives described in the international literature but also in several country-specific ways (a more-detailed description of the logics and their constitutive prerogatives can be found in Appendix 1). Furthermore, by mapping the dissemination of the logics in different ministries at different times, I found discrepancies that point to tensions as well as agreements in shaping of the policy hybridity.

Table 1 shows that all three ILs were mixed in the two observed ministries (confirming the theoretical expectations of the coexistence of multiple ILs in organizations; Besharov and Smith 2014). In quantitative terms, the MER embraces the three logics nearly equally, which is expected as it has an overall responsibility for research activities (Benner and Sörlin 2008). By contrast, in the MEI documents, the AE logic is almost nonexistent, and the UR logic is dominant, followed closely by the FE logic (50% and 46% respectively). The fact that the MEI completely excludes AE logic may explain the lack of space for hybridity within RFOs under the MEI. These findings also quantitatively highlight earlier findings that point to a presence of a major source of tension between the MER and MEI (Benner 2001; Eklund 2007).

The results regarding the MER policy documents show that, while the majority of the reports have a balanced representation of all three logics, this is not the case with the report "Research 2000," which endorsed AE far more strongly than UR logics (52% vs 18%). This can be interpreted as a major point of contention for actors aligned with the UR logic. Interestingly, calls for an investigation made by the MER were more focused on the UR than on the AE logic (50% vs 22%), which may be interpreted as an attempt to make peace. This result is another quantitative demonstration of earlier findings about controversy surrounding the "Research 2000" investigation (Eklund 2007).

Finally, the FE logic was well-represented in both ministries, emerging as a common and major concern. While the AE and UR logics are in direct conflict

(in regard to what constitutes good research), the FE logic differs slightly because it is more concerned with the process of selection rather than with defining what good research is. Because FE does not jeopardize the other two logics, it can easily be combined with them (Besharov and Smith 2014). Through quantitative analysis, I found that the FE logic was the strongest in the last two reports that resulted in conciliation and enabled changes (see the 7th and 10th investigations in the table). The reason can be interpreted as being that the common aim for efficiency was, in fact, what united both ministries and produced the long-awaited institutional reorganization.

Table 1: The percentage (%) of total number of occurrences of the ILs and corresponding subthemes in the coded paragraphs of official governmental documents.

		Ministry of education and research									Ministry of enterprise and innovation				
	Year of publication	1997	1997	1998	1998	1999	1999	1999			1999	1999	1999		
Institutional logics	Constitutive policy rationale / Name of the policy document	1) Call for investigation part 1: Research 2000	2) Call for investigation part 2: Research 2000	3) Research 2000	4) Some research questions	5) Research for future	6) Call for investigation: To finance research and development	7) To finance research and development	Average for Ministry of education and research		8) Call for investigation: Investigation about some authorities	9) Some organizations in the industry policy	10) Investigation about some authorities	Average for Ministry of enterprise and innovation	
Academic excellence	Quality research	0	25	32	26	17	30	13	**20**		0	1	1	**1**	
	Quality education	20	0	5	4	1	0	1	**4**	**33**	2	0	1	**1**	**4**
	Complexity of research	0	0	15	7	17	10	9	**8**		2	0	3	**2**	
Utility of research	Societal relevance	30	50	11	22	17	30	15	**25**	**34**	29	5	11	**15**	**50**
	Economic growth	20	0	8	6	13	10	5	**9**		32	44	29	**35**	
Funding efficiency	Rationalization of the funding system	30	25	13	14	7	20	15	**18**		7	21	22	**17**	
	Strong funding organizations	0	0	2	1	7	0	16	**4**	**33**	7	11	6	**8**	**46**
	Coordination between organizations	0	0	14	21	20	0	25	**12**		20	18	28	**22**	
	Total	100	100	100	100	100	100	100	**100**	**100**	100	100	100	**100**	**100**

Having quantitatively identified the roles of the three logics, I continue with a more-qualitative analysis of hybridity formation.

Factors Shaping Policy Hybridity

I found that the hybridity choices in Swedish RP are shaped by a combination of factors. In the following, I first address the role of ILs, and then consider the role of political actors and historical path dependency. The findings are developed on the basis of the policy document analysis, secondary literature review, and interviews with key actors in the policy-making process.

Academic Excellence vs Utility of Research

The reorganization of the Swedish RFOs in 2000 was strongly shaped by tensions between the proponents of AE logics and those of UR logics. The secondary literature and the interviews conducted made it clear that the conflict between the proponents of the two logics was a genuine clash of values and norms inherent in these logics. Additionally, because the RFOs' survival was at stake, the conflict between the logics became a confrontation of vested interests between the actors aligned with these logics (Terry 2015, Persson 2012)[10], thus demonstrating that institutional belonging played a significant role in the negotiations. This conflict translated into three major points: a) the number and configuration of RFOs; b) the RFOs' internal arrangements, including the constitution of decision-making bodies; and c) the titles for the heads of organizations.

The first and most important point of disagreement between the proponents of the two logics was the designation of resources to different RFOs, extending even to questioning the existence of certain ones. The highlight of the debate was the *Research 2000* investigation that attacked sectoral research, threatening to withdraw all resources for funding industry-relevant technical research (Eklund 2007). While the universities saw this as *"sobering up in research policy,"* the rest of the organizations involved saw it as a threat directed toward the kind of research they were doing (Respondent 2, Dnr U1998/4107/F).

The second point of disagreement was the way in which the funding in the established organizations would take place. Here, the composition of decision-making bodies (both on the boards and application-evaluation committees) was the central topic, with AE proponents arguing for more academics and UR proponents for including more representatives from society and industry. While the solution at the time was for all research councils to be governed by academics, it is interesting to note that, some years later in 2007, the sectoral research councils changed the composition of their decision-making bodies to include more external representatives (and, thereby, more strongly adopting the UR logic).

The third source of tension was the titles for the heads of the RFOs. Here, it is important to distinguish between the title General Secretary, which signifies an academic position with an opportunity to continue, at least partially, involvement in research, and that of General Director, which signifies a more politically aligned public servant and one who implements the signals from the government. In the negotiation process, the sectoral agencies insisted on heads with the title of General Director, signaling alignment with the state administration. The research council, on the other hand, chose the General Secretary title, marking its special status independent of the state (respondents 4

and 5). Interestingly, some years later, all RFOs including the research council switched to the title General Director. This can be interpreted as a move toward "more steering" in Swedish RPs, something that has been discussed in the literature (Engwall and Nybom 2007; Hallonsten and Holmberg 2012).

The Pursuit of Funding Efficiency

Another strong factor that shaped policy hybridity was the common goal of funding efficiency[11]. As previously noted, this was the aim that managed to unite the conflicted proponents of AE and UR logics to reach a compromise and conduct the necessary institutional reorganization. The FE logic was expressed through calls for clear objectives and the *division of responsibilities between different research funders* that would enhance "*the ability of the state powers to steer the research system through overall priorities and follow-up of efforts"* (Prop. 1999/2000:81)[12]. In practical terms, this logic translated mostly into concerns about the appropriate size and scope of RFOs[13].

At the time, the nature of research was undergoing changes and becoming more of a "big science". This included, for example, the increasing need for large, national projects and collaborative and interdisciplinary efforts. The small RFOs could not meet the upcoming needs, as it was necessary *"to put heavy money"* (Respondent 3) into large projects. In pursuit of strong RFOs, there was merging the existing research councils for basic research were merged into a larger organization with "*more muscle*" and competences (Benner 2001; Eklund 2007).

In addition, there was an aim to broaden the scope of activities for which RFOs would be responsible. For example, the establishment of the Swedish Innovation Agency (VINNOVA) was justified, in part, as a search for an "*agency with stronger financial muscles*" but also seeking to adopt a *"broader perspective"* than NUTEK, its forerunner (Persson 2012). Similarly, in the case of two "area-oriented" research councils, FORMAS and FORTE, the reasoning was that some research endeavors go beyond disciplinary borders and, hence, require a stronger and broader funding agency that can support interdisciplinary research as well as different forms of funding (Persson 2008; Prop 1999/2000:71).

Strategic Political Action

Another part of the explanation for the shaping of institutional hybridity is strategic political action. Two distinct approaches can be identified, one in a period of financial stability and the other during a financial crisis.

During the period before the economic crisis, there was extensive formation of new RFOs (Persson 2012; Hallonsten 2011). The interviews revealed that *"everyone wanted their own funding organization*" resulting in greater pressure on politicians (Respondent 3). The creation of new RFOs can be interpreted as an easy way out for politicians. Although the creation of a new RFO, in terms of financial cost, is not the least expensive option, in terms of conflict avoidance, it is. However, this is easier to pull off when additional funding is added to the system (Aagaard 2017), and since the financial crisis hit Sweden in the '90s, things had to change.

During the period of the rationalization of the system when significant savings were necessary, the role of politicians was marginal. The question of institutional changes was left mostly to the academic experts, thereby avoiding the heated debate between the AE and the UR proponents. In fact, the majority of interviewees felt that the conflict was between basic and applied sciences and not a politicized issue. It is believed that, due to the reservations of the scientific community[14], the politicians were leery about entering the debate (Respondents 2, 4, 5, and 7). It has been argued that they utilized official investigations to signal that they were actively examining the questions, without actually claiming anything (Benner and Sörlin 2008). Here the selection of experts who were conducting investigations (and later the selection of the organizational leaders) was used as a means to steer the policy process in a desired direction. The role of politicians was more visible, however, when certain aspects of official investigations were picked up (mostly those that were in line with the budget savings), while others were left out (Eklund 2007).

To conclude, the Swedish case shows that, while political actors did take part in the shaping of hybridity, their activities were limited by actors on lower policy levels. Their handling of the situation can, therefore, be described as a strategic political action achieved via a combination of knowledge-based policy-making, the strategic selection of experts (and organizational leaders), and political involvement at appropriate times.

Path dependency at work

Another factor that contributes to an understanding of the hybridity choices in Swedish RP is historical path dependency (Persson 2012; Benner and Sandström 2000b). It explains not only the consistency of the balancing of ILs in the RP but also the consistency of hybridity choices.

First, although the institutional reorganization in 2000 was seen as a major change, with the help of the ILs approach, I find that, in fact, the funding system is quite stable and that there is continuity of diffusion of the logics. The reason for this is that, even though the RFOs were reorganized, the balancing of the underlying ILs remained the same.

Second, path dependency of hybridity choices can be explained by considering the issues of institutional legitimacy and RFOs' resistance to change. Because established institutions have developed ILs, forcing an external IL onto them might create tension, the potential for conflict, or simply the symbolic accommodation of external ILs while those already in place are actually followed (decoupling; Tilcsik 2010; Pache and Santos 2013). In this context, creating new RFOs is usually a simpler strategy for introducing new institutional demands than trying to reform inflexible existing organizations with their own long-standing identities, social structures, and legitimacy (Skelcher and Smith 2015; Greenwood et al. 2011; Kraatz and Block 2008; Scott 2014). Therefore, in respect to organizational functioning, its initiation is a crucial determinant of its future, and once established, it will likely remain largely unchanged throughout the course of its existence. It should be also noted, that segregation can be seen as a privilege of strong organizations, which manage to avoid compromising and segmentation, the choices that might compromise their functioning. Based on the secondary literature and the conducted interviews, I found that this was the case

in Swedish RP and that new policy needs were accommodated via segregation (Persson 2008; Benner and Sandström 2000b; Öquist and Benner 2012).

The hybridity pattern remained the same even when the financial situation changed completely in the 1990s and when the number of RFOs needed to be cut. The choices and implications of different hybridization alternatives have not been explicitly discussed in opposition to each other. This advocates path-dependence rather than a rational-choice approach to policy- making. From the logic perspective, however, different types of hybridization bring different probable consequences, and this will be discussed in the following section.

Hybridity Choices: Several Implications

In this paper, I consider different policy levels on which hybridity can be realized (instrument, organization, and system level). By doing so, I deepen the understanding of policy hybridity and open for consideration multiple ways to manage policy tensions caused by competing institutional logics; I also ask new questions about hybridity choices and their implications.

The data analysis demonstrates that segregation has been a preferred and consistent choice of hybridization in Sweden. Based on this case study, I suggest a number of possible implications of segregation as a means to resolve tensions between logics.

An advantage of segregation is greater freedom to establish a new organizational culture with completely new modes of working and a new organizational leader and board members. Without the burden of the old organizational structure, it is easier to create something different and to innovate. Furthermore, every organization needs to maintain its identity and legitimacy (Scott 2014) internally (toward its members) but also externally (toward the government, other RFOs, and researchers). In this respect, segregation is a convenient solution because it does not force RFOs to change their organizational structure and risk being discredited (Skelcher and Smith 2015; Greenwood et al. 2011; Kraatz and Block 2008). This might however be a privilege of strong organizations only, which can withstand the pressures for compromising and segmentation.

The disadvantage of segregation, by contrast, might be that the opposing logics are never put in a context where they can be consolidated and where a higher level tolerance and even collaboration between them can be established (see Reay and Hinings 2009). The point of hybridity is to build bridges between logics, and when they are kept apart, there is a danger that they will remain opponents or rivals (and, thereby, reproduce barriers; SOU 2008:30). Consequently, the coordination of different funding activities is hardened, and the costs of maintaining the system are higher (Edqvist 2003). A number of previous studies have pointed out this problem (Benner & Öquist 2012; Persson 2012; Hallonsten 2011; Benner 2009), and an official governmental investigation argued that it persisted years later (SOU 2008:30). This is a missed opportunity, especially as it has been argued that these logics are, in fact, compatible, and that the conflict could be transformed into peaceful coexistence (Granberg and Jacobsson 2006). Much attention to policy (implementation) design is needed however.

By drawing on earlier research, I also suggest that other hybridity choices are of limited utility. Even though compromise and segmentation are both less costly (in terms of time, effort, competence, and funding), there is a limit to how large and complex instruments/organizations can become without losing functionality. Extensive compromise might lead to ambiguous instruments, while extensive segmentation might lead to hard-to-coordinate organizations (where it is difficult to balance different components and properly transfer tasks to lower levels of management). Consider as an example Norway, where hybridity was accommodated on the organizational level via segmentation (Cocos, Lepori and Reale forthcoming). Here, the hybridity choices were aimed to increase interaction between basic and applied research and between cross-organizational alliances and learning, and to make the system more efficient (Benner and Sandström 2000b). However, the downside of excessive segmentation can be the creation of a monopoly situation where one major research funding organization designates the majority of funding. If this dominant organization is unable to balance different priorities well, there will be profound effects on the whole system. In fact, an empirical study based on questionnaires with Norwegian scientists showed that the majority were dissatisfied with the ways the research council was balancing different ILs (Guldbrandsen 2005)[15].

Conclusion

Institutional hybridity has been gaining interest in the new institutional literature. While most of the earlier work on hybridity focuses on instrument level (Cocos and Lepori 2020; Flanagan et al. 2011), individual organization level (Guldbrandsen and Thune 2020; Skelcher and Smith 2015), or policy level (Greenwood et al. 2011; Capano and Pirtoni 2018), there has been very little consideration of multi-level hybridity (Cocos, Lepori and Reale forthcoming). In this paper I followed recent calls to focus on "how" multi-level hybridity is formed (Cocos, Lepori and Reale forthcoming; Polzer et al. 2016) by considering the case of the Swedish research funding system and the significant institutional changes that took place in the year 2000. Following the argument that conflicting institutional logics often prompt institutional hybridity (Thornton and Ocasio 2008), I engaged in conceptualizing and examining the role of three ILs present in the RP, i.e., *Academic excellence (AE), Utility of research (UR)*, and *Funding efficiency (FE)*. Furthermore, a vocabulary approach ensured that the paper provides a quantitative indicator of how important these logics were in different ministries at different times, confirming previous research emphasizing disparities (Persson 2008; Eklund 2007) as well as highlighting in a more fine-grained way tensions and points of agreement that shaped the hybridity.

With the help of secondary literature, policy document analysis, and key-respondent interviews, I found that institutional hybridity in Swedish RP has been shaped by a combination of the following factors:

*1. **The conflict between AE and FE logics,** which was a genuine clash of norms and values inherited from the logics and turned into a conflict between vested interests of proponents of each logic (Terry 2015; Persson 2012). In terms of practical matters, this conflict regarded the number and configuration of RFOs, the RFOs' internal arrangements including the constitution of decision-making bodies; and the titles of the heads of RFOs.*

*2. **Pursuit of funding efficiency and better/stronger steering,** which was a unifying aim that brought together the conflicted ministries and enabled the necessary institutional reorganization. Here the aim was to merge RFOs into larger and financially stronger entities with a broader scope that could support the emergence of big and interdisciplinary science (Prop. 1999/2000:81; Benner 2001).*

*3. **Strategic political involvement,** which had two completely different modes during financial stability and during the financial crisis. I found that, before the financial crisis, organizational layering was an easy way for politicians to handle the desire of all ministries to have their own RFO. However, when the system had to be made more efficient, they mostly withdrew, leaving the highly heated debate in the academic arena. This represents an interesting case of strategic political action achieved through knowledge-based policy-making, the strategic selections of experts (and later institutional leaders), and selective political involvement at appropriate times.*

*4. **Path dependency** of the hybridity choices as well as balancing the underlying ILs. Here, the neo-institutional literature provides a worthwhile contribution to understanding how predominant ILs and the pursuit for institutional legitimacy (Pache and Santos 2013; Greenwood et al. 2011; Kraatz and Block 2008) can explain organizational resistance to adopting external ILs, leaving segregation as the only available choice. Furthermore, with the help of a vocabulary approach, I find that, even though the institutional reorganization in the year 2000 was seen as a major one, in fact there is stability as the underlying ILs remained the same and were simply repackaged in a different way.*

Going back to the theoretical foundations of this paper, the results make an empirical contribution to hybridity literature illustrating how multi-level hybridity can be negotiated in a specific country setting. The paper also offers an example of how the IL approach can be combined with other shaping factors (path-dependency, strategies political action, negotiation between vested interests) to provide an explanation of institutional change. Finally, the paper proposes several advantages and disadvantages of different hybridity choices, essentially pointing to the benefit of combining them in policy arenas. In that sense, future research should further empirically examine the implications of different hybridity choices and how to strike the right balance of hybrid forms in different settings.

Furthermore, in terms of future research efforts, it should be noted that the Swedish case is dominated by system-level hybridity segregation (Cocos, Lepori and Reale forthcoming) which is why my methodological approach was focusing on the system level actors and documents. Consequently, this paper has a limited ability to contribute to a better understanding of other hybridity choices (segmentation and compromising). In this respect, future studies could engage in an elaboration of countries where hybridity is negotiated on different policy levels and where different sets of policy actors may play more important roles. Interesting cases could be Norway, which experienced a great level of segmentation, and France, where instrument-level hybridity is a predominant type of hybridity (Cocos, Lepori and Reale forthcoming).

Finally, the three ILs described in the paper translate into conflicting policy demands, posing a challenge not solely for policy-making but rather trickling down all the way to the individual institution as well as to individual research groups and researchers (Grossi, Cobija and Strzelczyk 2019; Burke 2005; Jongbloed 2015; Mouwen 2000; Ek et al. 2013). In this respect, this study could represent a conceptual ground for future literature articulating the challenges of conflicting policy demands on those levels.

Acknowledgements

Thank you to Joachim Åström, Monika Berg, and Jan Olsson for their extensive and generous support during the writing of this paper. In addition, I am grateful to Bo Persson and the SWEPSA panel on Governance and Public Administration for their collegial and constructive comments and criticism.

References

Literature

Aagaard, K. (2017) The Evolution of a National Research Funding System: Transformative Change Through Layering and Displacement, *Minerva*, 55: 279–297.

Battilana, J., Lee, M. (2014) Advancing research on hybrid organizing–Insights from the study of social enterprises, *The Academy of Management Annals*, 8(1): 397-441.

Benner, M. (2001) Kontrovers och konsensus: vetenskap och politik i svenskt 1990-tal. Nya Doxa. Nora. Sweden

Benner, M. (2003) Kunskapsmiljöer I förändring: Forskningensvillkor vid dagens universitet. In Kin, L., Mårtens, P. (Eds) Den vilt växande högskolan. SISTER skrifter 8. Nya Doxa

Benner, M. (2009) Kunskapsnation i kris?: Politik, pengar och makt i svensk forskning. SISTER. Nya Doxa, Stockholm.

Benner, M. (2012). Innovation Policy in Hard Times: Lessons from the Nordic Countries. European Planning Studies: Innovating Our Way Out of the Economic Crisis, 09/2012, 20(9): 1455-1468, DOI: 10.1080/09654313.2012.709061

Benner, M., Sandström, U. (2000a). Institutionalizing the triple helix: research funding and norms in the academic system, *Research Policy*, 29: 291–301

Benner, M., Sandström, U. (2000b). Inertia and change in Scandinavian public-sector research systems: the case of biotechnology, *Science and Public Policy*, 27(6): 443–454.

Benner, M., Sörlin, S. (2007) Shaping strategic research: Power, resources, and interests in Swedish research policy, *Minerva*, 45(31):48. DOI 10.1007/s11024-006-9019-6

Benner, M., Sörlin, S. (2008) Tillstånden för forskningen-en diagnos och manga frågor. In Benner, M., Sörlin, S. (Eds) Forska lagom och vara världsbäst. Sverige inför forskningens globala strukturomvandling. SNS Förlag. Stockholm.

Benner, M., Öquist, G. (2012) Fostering breakthrough research: A comparative study. Akademirapport. Vetenskapsakademien. Stockholm, Sweden.

Besharov, M.L., Smith, W.K. (2014) Multiple institutional logics in organizations: Explaining their varied nature and implications, *Academy of Management Review*, 39(3): 364-381

Braun, D. (2003) Lasting tensions in research policy-making - a delegation problem, *Science and Public Policy*, 30(5): 309-321

Braun, D. (2006) The mix of policy rationales in science and technology policy, *Melbourne Journal of Politics*, 31: 8-35

Burke, J.C. (2005) Achieving accountability in higher education: balancing public, academic, and market demands. San Francisco. CA: Jossey-Bass

Capano, G. (2011) Governments continue to do its job: A comparative study of governance shifts in the higher education sector, *Public Administration*, 89(4): 1622-1642.

Capano, G. (2018) Reconceptualizing layering: From mode of institutional change to mode of institutional design: Types and outputs, *Public Administration*, 97(3):590-604.

Capano, G., Pritoni, A. (2018) Varieties of hybrid systemic governance in European Higher Education, *Higher Education Quarterly*, 2018: 1–19.

Christensen, T. & Lægreid, P. (2011) Complexity and hybrid public administration—theoretical and empirical challenges, *Public Organization Review*, 11(4): 407-423.

Cocos, M., Lepori, B. (2020) What we know about research policy mix, *Science and Public Policy*, 47(2): 235–245. doi: 10.1093/scipol/scz061

Cocos, M., Lepori, B., Reale, E. (forthcoming). Multilevel hybridity in research policy.

Denis, J., Ferlie, E., Van Gestel, N. (2015) Understanding hybridity in public organizations, *Public Administration*, 93(2): 273-289.

Edqvist, O. (2003) Layered science and science policies, *Minerva,* 41: 207–221.

Ek, A-C, Ideland, M, Jönsson, S., Malmberg, C. (2013) The tension between marketisation and academisation in higher education, *Studies in Higher Education*, 38(9): 1305–1318.

Eklund, M. (2007) Adoption of Innovation System concept in Sweden. PhD thesis, Uppsala University, Sweden.

Elzinga, A. (2012) Features of the current science policy regime: View ed in historical perspective, *Science and Public Policy*, 39: 416-428.

Engwall, L., Nybom, T. (2007) "The Visible Hand versus the Invisible Hand: The Allocation of Research Resources in Swedish Universities." In The Changing Governance of the Sciences: The Advent of Research Evaluation Systems, edited by R. Whitley and J. Gläser, 31–49. Dordrecht: Springer.

Ferlie, E., Ashburner, L., Fitzgerald, L., Pettigrew, A. (1996) The New Public Management in Action Oxford: Oxford University Press.

Flanagan, K., Uyarra, E., Laranja, M. (2011) Reconceptualising the policy mix for innovation, *Research Policy*, 40: 702–713.

Fridlund, M., Sandström, U. (2000) Universitet, forskning, samhälle: Bidrag till den forskningspolitiska debatten. SNS, Stockholm

Friedland, R., Alford, R. (1991) Bringing society back in: Symbols, practices, and institutional contradictions, in The New Institutionalism in Organizational Analysis, ed. Walter W. Powell and Paul J. DiMaggio, pp. 232–263. Chicago: University of Chicago Press.

Geuna, A. (2001) The changing rationale for European university research funding, *Journal of Economic Issues*, 35(3), 607-632.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., Trow, M. (1994), The New Production of Knowledge, The dynamics of Science and research in contemporary societies, Sage Publications

Granberg, A., Jacobsson, S. (2006) Myths or reality – a scrutiny of dominant beliefs in the Swedish science policy debate, *Science and Public Policy,* 33(5): 321–340.

Greenwood, R., Raynard, M., Kodeih. F., Micelotta, E.r., Lounsbury, M. (2011) Institutional Complexity and Organizational Responses, *The Academy of Management Annals*, 5:1, 317-371, DOI: 10.1080/19416520.2011.590299

Grossi, G., Cobija, D., Strzelczyk, W. (2019) The impact of competing institutional pressures and logics on the use of performance measurement in hybrid universities. *Public performance & management review*. DOI: 10.1080/15309576.2019.1684328

Gulbrandsen, M. (2005) Tensions in the research council–research community relationship, *Science and Public Policy*, 32(3): 199-209.

Gulbrandsen, M., Thune, T., (2020) Hybridity and research organisations, in Anonymous Handbook on Hybrid Organisations. Edward Elgar Publishing.

Guston, D.H., Keniston, K., (1994) Introduction: The Social Contract for Science, in Guston, D.H., Keniston, K. (Eds.), The Fragile Contract. MIT Press, Massachusetts, pp. 1-41.

Hallonsten (2011) Growing Big Science in a Small Country: MAX-Iab and the Swedish Research Policy System, *Historical Studies in tbe Natural Sciences*, 41(2): 179-215.

Hallonsten, O., Holmberg, D. (2012). Analyzing Structural Stratification in the Swedish Higher Education System: Data Contextualization With Policy-History Analysis, *Journal of the American society for information science and technology,* 64(3):574–586.

Hallonsten, O., Silander, C. (2012) Commissioning the University of Excellence: Swedish research policy and new public research funding programmes, *Quality in Higher Education*, 18(3): 367–381 .

Holmberg, D. (2012) Vem formar den strategiska forskningen? Institutionell dynamic och anslagspolitisk utveckling I KK-stiftelsen. Forskningspolitiska institutet, Lunds Universitet.

Holmberg, D., Hallosten, O. (2015) Policy reform and academic drift: research mission and institutional legitimacy in the development of the Swedish higher education system 1977–2012, *European Journal of Higher Education*, 5(2): 181–196.

Howlett, M, (2005) What is a policy instrument? Policy tools, policy mixes, and policy-implementation styles. In: Eliadis, P., Hill, M., Howlett, M. (Eds.), Designing Government: From Instruments to governance. McGill-Queens University Press, Montreal.

Jacob, M. (2006) Utilization of social science knowledge in sci nce policy: Systems of innovation, triple helix and VINNOVA, *Social Science Information*, 45: 431-62.

Jacob, M. (2009) Out with Humboldt and in with the Knowledge Society: On the Consequences of the Redefinition of the Role of Higher Education and Research. In The Routledge International Handbook of Higher Education, edited by M. Tight, K. H. Mok, J. Huisman, and C. Morphew, 501–509. London: Routledge.

Jongbloed, B. (2015) Universities as hybrid organizations: Trends, drivers, and challenges for the European University, *International Studies of Management & Organization*, 45(3), 207–225. doi:10.1080/00208825.2015.1006027

Jongbloed, B. and Lepori, B. (2015) The funding of research in higher education: Mixed models and mixed results. In Souto-Otero, M., Huisman, J., Dill, D.D., de Boer, H., Oberai, A.S., Williams, L.(Ed.) Handbook of Higher Education Policy and Governance (pp. 439-461) New York: Palgrave.

Kay, A., (2006) The Dynamics of Public Policy: Theory and Evidence. Edward Elgar Publishing, Cheltenham.

Kraatz, M.S. and Block, E.S. (2008) Organizational implications of institutional pluralism. In R. Greenwood, C. Oliver, K. Sahlin, R. Suddaby(Eds.) The SAGE Handbook of Organizational Institutionalism (pp. 243-275) London: SAGE.

Lascoumes, P., Le Gales, P., (2007) Introduction: understanding public policy through its instruments—from the nature of instruments to the sociology of public policy instrumentation, *Governance*, 20 (1), 1–21.

Loewenstein, J., Ocasio, W., Jones, C. (2012) Vocabularies and vocabulary structure: A new approach linking categories, practices, and institutions, *The Academy of Management Annals,* 6: 41-86.

Lundequist, P. Waxcell, A. (2010) Regionalizing "Mode 2"? The adoption of centres of excellence in Swedish research policy. Geografiska Annaler: Series B. Swedish Society for Anthropology and Geography.

Martin, B.R., Irvine, J., (1989) Research Foresight. Priority-Setting in Science. Pinter, London

Meyer, R. E., Egger-Peitler, I., Höllerer, M. A. and Hammerschmid, G. (2014) Of bureaucrats and passionate public managers: institutional logics,

executive identities, and public service motivation, *Public Administration*, 92(4): 861–885.

Meyer, R.E., Hammerschmid, G. (2006) Changing institutional logics and executive identities. A managerial challenge to public administration in Austria, *American Behavioral Scientist*, 49(7): 1000–1014.

Mouwen, K. (2000) Strategy, structure and culture of the hybrid university: Towards the university of the 21st Century, *Tertiary Education and Management,* 6(1): 47–56. doi:10. 1080/13583883.2000.9967010

Narvinger, A, E Lindsö, W Lundby-Wedin, M Krantz, U Bengtsson, M Caesar, S Normark, L Torell and U Larsson (2004) Låt näringslivets behov styra forskningen. Dagens Nyheter, 11 April, 2004

Pache, A. and Santos, F. (2013) Inside the Hybrid Organization: Selective Coupling as a Response to Competing Institutional Logics, *Academy of Management Journal*, 56(4): 972-1001.

Persson, B. (2001) Motsträviga myndigheter: Sektorforskning och politisk styrning under 1980-talet. Tema Teknik och social förändring/SISTER. Linköping/Stockholm.

Persson, B. (2008) The Development of a New Swedish Innovation Policy a Historical Institutional Approach. WP 2008/2

Persson, B. (2012) Constructing an innovation policy agency: The case of the Swedish Governmental Agency for Innovation Systems. In Rickne, A., Laestadius, S., Etzkowitz, H. (Eds) Innovation Governance in and Open Economy. Routledge. New York

Polzer, T., Meyer, R. E., Höllerer, M. A., Seiwald, J. (2016) Institutional Hybridity in Public Sector Reform: Replacement, Blending, or Layering of Administrative Paradigms. In Research in the Sociology of Organizations (Vol. 48B, pp. 69-99) (Research in the Sociology of Organizations). Emerald Publishing.

Reay, T., Hinings, C.R. (2009) Managing the Rivalry of Competing Institutional Logics, *Organization Studies,* 30(06): 629–652.

Sandström, U., Heyman, U., Hällsten, M. (2005) Forskningfinansiering: inriktning och styrning. Vetenskapsrådet. Stockholm.

Schilling, P. (2005) Research as a source of strategic opportunity? Re-thinking research policy developments in the late 20th century. Doctoral thesis. Umeå Studies in Economic History 32. Print & Media Umeå University

Scott, W,R. (2014) Institutions and organizations, 3rd ed. Thousand Oaks, CA Sage.

Skelcher, C. and Smith, S. R. (2015) Theorizing hybridity: Institutional logics, complex organizations, and actor identities: The case of nonprofits, *Public Administration*, 93(2): 433-448.

Slaughter, S., Leslie L. (1997) Academic Capitalism: Politics, Policies, and the Entrepreneurial University. Baltimore, Johns Hopkins University Press

Slaughter, S., Rhoades, G. (2004) Academic capitalism and the new economy: Markets, state, and higher education. JHU Press.

Slaughter, S., Rhoades, G. (2004) Academic capitalism and the new economy: Markets, state, and higher education JHU Press.

Stevrin, P. (1978) Den samhii/lsstyrdaforskningen: en samhiillsorganisatorisk studie av den sektoriella forskningspolitikens framviixt och tilliimpning i Sverige, Stockholm: Liber förlag.

Suddaby, R., Greenwood, R. (2005) Rhetorical strategies of legitimacy, *Administrative Science Quarterly,* 50(1): 35–67.

Sörlin, S. (2005) Trust and Universities: Management of Research and Education under Changing Knowledge Regimes. CESIS electronic working paper studies. Stockholm. Sweden

Sörlin, S. (2007) Funding Diversity: Performance-based Funding Regimes as Drivers of Differentiation in Higher Education Systems, *Higher Education Policy*, 20(4). 413-440.

Terry, M.M. (2015) Vested Interests and Political Institutions, *Political Science Quarterly*, https://doi.org/10.1002/polq.12321

Thornton, P. H., Ocasio, W., Lounsbury, M. (2012) The institutional logics perspective: A new approach to culture, structure, and process. Oxford, UK: Oxford University Press.

Thornton, P.H. (2004) Markets from culture: Institutional logics and organizational decisions in higher education publishing. Stanford, CA: Stanford University Press.

Thornton, P.H., and Ocasio, W. (2008) Institutional logics. In R. Greenwood, C. Oliver, K. Sahlin, R. Suddaby (Eds.) The SAGE Handbook of Organizational Institutionalism (pp. 99-129). London: SAGE.

Tilcsik, A. (2010) From ritual to reality: Demography, ideology, and decoupling in a post-communist government agency, *Academy of Management Journal*, 53(6): 1474-1498.

Virtanen, T., Silander, C., Pietila, M. (2014) National steering and profiling of academics: Research in Finland and Sweden. Book chapter

Zilber, T. B. (2002) Institutionalization as an Interplay between Actions, Meanings, and Actors: The Case of a Rape Crisis Center in Israel, *Academy of Management Journal*, 45(1): 234-254.

Ziman, J. (2000) Real Science. Cambridge University Press, Cambridge.

Öquist, G., Benner, M. (2012) The Royal Swedish Academy of Sciences. 68 p. Akademirapport

List of official governmental documents

Dir 1997:67, 154- Governmental directive

Dir 1999: 68- Governmental directive

Dir N99/6651/TFoU- Additional governmental directive

SOU 1998:128a,b- “Research 2000”

SOU 1997:88- “Upphandling för utveckling”

Ds 1999:68- “Att finansiera forskning och utveckling”

Anders Flodströms investigation “Utredning om vissa myndigheter”

Prop 1998/99:94 “Vissa forskningsfrågor”

Prop 1999/2000:71 “Vissa organisationsfrågor inom näringspolitiken”

Prop 1999/2000:81 “Forskning för framtiden - en ny organisation för forskningfinansiering”

Dnr U1998/4107/F- Summary of the comments from relevant actors
Dnr N1999/13161/ITFoU- Summary of the comments from relevant actors
Dnr U1999/4040/F- Summary of the comments from relevant actors

List of interviewees

Interviewee 1: Policy expert, lead official governmental investigation, 26. September. 2019
Interviewee 2: Politically assigned public servant, engaged in official governmental investigation, 11.October.2019
Interviewee 3: Policy expert, lead official governmental investigation, 16.October. 2019
Interviewee 4: Policy expert, lead official governmental investigation, 23.October. 2019
Interviewee 5: Politically assigned public servant, engaged in Council for research funding, 28. October. 2019
Interviewee 6: Politically assigned public servant, engaged in Council for research funding, 28.October. 2019
Interviewee 7: Politically assigned public servant, engaged in Council for research funding, 13.November.2019

Appendix 1

Abbreviations

FORMAS - Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning
FORTE - Swedish Research Council for Health, Working Life and Welfare
VINNOVA - Swedish Innovation agency
RFO- Research Funding Organization
IL - Institutional logics
AE - Academic Excellence
UR - Utility of research
FE - Funding efficiency
RP - Research policy
MEI - Ministry of enterprise and innovation
MER - Ministry of education and research

The institutional logic that stands for AE is exemplified in Swedish research policy by three prerogatives. The most important argues that academic freedom and autonomy are prerequisites for new knowledge breakthroughs. Second, a less-strong prerogative is that knowledge production is closely connected to general education quality. The third prerogative is very robust and refers to the complexity and unpredictability of science, and the challenges of establishing unambiguous boundaries between basic and applied science and between different disciplines. Because policy consistently lags behind the forefront of research, steering research activities too much might inhibit knowledge advancements (Fridlund and Sandström 2000).

The institutional logic that stands for UR, also labeled the interventionist model (Holmberg 2012), incorporates two main prerogatives. First, research should be utilized to address societal challenges and to contribute to society by spreading knowledge (Öquist and Benner 2012). The second prerogative is that research should contribute to economic growth by collaborating with the private sector. Research is seen as only one part of the innovation system, which is a complex process (Fagerberg, Movery and Nelson 2005) and needs to be managed in an integrative way (Edqvist 2003).

Finally, the institutional logic standing for FE incorporates three prerogatives. The first relates to the rationalized organization with a clear role as an RFO. Interestingly, almost no policy text referred to the saving costs; rather, a much sharper focus was devoted to the long-term benefits of the more-efficient system. The second relates to the strength of individual RFOs in terms of competence and the funding amounts they would allocate. While in many Western countries organizational efficiency has been aligned with NPM, this was not the case in Sweden (Respondent 4). Instead, efficiency was seen as enlarging the size of RFOs. This was part of broader changes in Swedish policy and the pursuit of large organizations by merging many smaller ones. The third prerogative relates to the importance of coordination and collaboration between the RFOs and with other governmental and semi-governmental actors.

Table 2: Institutional logics, corresponding constitutive prerogatives, and associated vocabularies.

Institutional logics	Constituting prerogatives	Associated vocabulary
Academic excellence	**Quality research**	High quality research, ground research, higher scientific quality, curiosity-driven research, academic quality.
	Quality education	Quality education, Higher education, Universities, teaching, educating.
	Complexity of research	Interdisciplinary research, multidisciplinary research, basic vs applied research, close aligned research areas, complex character of research, working over disciplinary borders, complementary research areas, connection points between scientific areas.
Utility of research	**Societal relevance**	Interdisciplinary, strategic research, workers competence and wellbeing, relevance of research, societal benefits of research, coming to use, research usage, need-driven research, transferring benefits to society.
	Economic growth	Triple helix, supporting industry and businesses, consultancy for businesses, development, needs of businesses, stimulating businesses, benefiting industry, product development, collaborate with private sector, contribute to companies, capacity to produce innovation, wholesome perspective on innovation system, complexity of innovation.
Funding efficiency	**Rationalization of the funding system**	Increasing efficiency, clarify the organization and responsibilities, make the responsibilities more precise, simplifying the system, efficiency in funding and steering.
	Strong RFOs	Gathering strength, gather capacity, create institutions with strong profiles, clearly defined roles and identities, competence and funding, institutional strength, institutional flexibility, ability to foresee, institutional power, institutional identity, role and legitimacy.
	RFO Coordination	Collaboration, coordination, between political areas, between RFOs, information gathering and consultancy for government, more efficient funding efforts, advising of the steering governmental bodies, strengthen the competence and knowledge base for decision-making, evaluation, analyzing, comparative studies.

Notes

[1] Cocos, Lepori and Reale (forthcoming) apply Kraatz and Block (2008) work to research policy, finding that what they refer to as compromising in organizational setting, can be conceptualized as instrument hybridity in research policy. Compromising can also take place in form of blending or layering of logics (Polzer et al. 2015). But for the sake of clarity, and saving space, I continue to use term compromising as a term that encompasses more ways of putting logics together on instrument level.

[2] This logic is not completely aligned with the first two as it is more preoccupied with the selection process rather than with defining what "good science" is.

[3] Institutional change can also be a result of a purely technical reasons. These are not within the scope of this paper.

[4] In some cases, a single paragraph referred to two or three logics. In these cases, every single code was counted.

[5] The selected study approach does not deny the relevance of other communication arenas; however, research and innovation policy can be regarded as a rather "technocratic" policy area, and therefore, it is reasonable to expect that the role of the ministries is central (Persson 2008).

[6] IVA, NUTEK, the Swedish Trade Union, the Federation of Swedish Industries, industry associations, committees and unions, directors of five research-supporting sectoral agencies.

[7] Agency for business development, the predecessor of VINNOVA.

[8] "To finance research and development", Hans Wigzell

[9] "Investigation about certain authorities", Anders Flodström, and Suzanne Håkansson.

[10] Vested interest is also one of the factors that can be assigned to the creation of FORMAS (funded by the Ministry of Agriculture; today, Ministry of Rural Affairs) and FORTE (funded by the Swedish Ministry of Health and Social Affairs). More specifically, their research funding comes from different ministries, which were unwilling to send their funds to a unified research council (Respondents 2 and 4).

[11] Here, it should be noted that this study is concerned with the organization of the research funding system in general (the constellation of the RFOs and their modes of working). It does not examine how higher education institutions are funded, which is an area where the issue of funding efficiency is highly disputed.

[12] This is something that Hallonsten and Silander (2012) argued the government continued to do in the following years.

[13] Other aspects of the institutional organization were addressed in later stages, when a special, politically selected board designed the newly founded RFOs.

[14] In the the mid-1990s, a major Swedish daily newspaper, *Dagens Nyheter,* published open letters signed by hundreds of researchers protesting the situation with the funding system (Eklund 2007).

[15] Gulbrandsen writes about tensions between basic and applied science, disciplinary and cross-disciplinary work, and monitoring and reviewing processes.