



Bridging the Science-Policy Gap without Crossing the Line: A Case Study of the Swedish Climate Policy Council

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Bridging the Science-Policy Gap without Crossing the Line: A Case Study of the Swedish Climate Policy Council

Att överbrygga gapet mellan vetenskap och politik utan att gå över gränsen: En fallstudie av Klimatpolitiska rådet

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Abstract

Climate change is advancing in severity globally and the scientific community's warnings toward political representatives are proceeding. A lack of political action on scientific warnings gives rise to the idea of a 'science-policy gap', which assumes that science needs to become more politically applicable, and that politics need to act faster and better to mitigate climate change. To advance implementation of national and international climate goals, institutions called national climate councils are emerging. These organisations are created to give scientific support that is relevant for the political world. However, working between science and policy have proven to be a practice full of dilemmas and challenges. The organisations are expected to bridge worlds built on different logics that are not appropriate to merge. This thesis explores how the Swedish Climate Policy Council works between the borders of science and politics and investigates challenges and opportunities in this interaction to increase climate policy action. To unearth the scientific experts' understandings of their work, interviews were conducted and analysed through theories of boundary work. This thesis suggests, based on experiences of practitioners, that governing documents from the political practice to the scientific, and vice versa, need to hold a certain openness to enable 'double freedom of interpretation'. By not being too detailed, conditions are set for practices to contain agency on how to act. The study also illuminates the 'issue of demarcation', which brings to attention that sharp borders from the political practice seem to create an unnecessary distance toward the scientific sphere. This in turn may challenge the possibility for the climate council to develop recommendations that make sense for the Government. Finally, I highlight what I refer to as 'boundary object effect', where the space created by the climate council works as a meeting place for different practices to commonly address the science-policy gap. Further research is encouraged to explore how a variety of practices understand the science-policy interface, as this thesis illustrates the perspective of the scientific council members of the Swedish Climate Policy Council.

Keywords: Science-Policy Interface, Climate Councils, Boundary work, Boundary organisation, Science-Policy Gap, Science and Technology studies

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1. Introduction

...there is today a wide boulevard where researchers can move in a large space between ‘the social world’ and ‘the world of ideas’ (Latour 2004:11). The passage is no longer narrow, and it may never have been. (Soneryd & Sundqvist 2023, 68)

This thesis revolves around the science-policy gap that is connected to the issue of political inaction on climate change. In relation to this gap, the concept of science-policy interface is understood as the place, the bridge itself, where the world of science and politics meets. Climate councils are a rather new type of organisations that are initiated by politics to work in this interface, where they work with the aim to enrich decision-making. Boundaries and interaction between the scientific and political practice are conducted on the bridge, which this thesis explore through theories of boundary work.

In this thesis I intend to; address the problem of science-policy gap in relation to climate change in the Swedish context; unearth practitioners’ understanding of boundary work; thereby contribute to potential reflexivity to Swedish Climate Policy Council and actors in Swedish politics; and contribute to the growing empirical research in relation to boundary organisations.

1.1 The Science-Policy Gap

Action to decrease greenhouse gas emissions is called upon globally and the IPCC states that without strengthening of policies we can expect global warming of 3.2°C by 2100 (Calvin et al. 2023, 11). To avoid already evident effects of human caused climate change, politics is called to act on scientific warnings. The Paris Agreement which state that we should limit global warming to 1.5° and well below 2°, can be seen as a political response to this warning. However, the implementation of this

treaty is insufficient, and warming of 1.5° is likely to happen during the 21st century (Calvin et al. 2023, 11). The lack of action can be termed ‘science-policy gap’, as the amount and quality of political action is incoherent with scientific warnings. This gap can be described as an observation that a growing research field has a limited effect in practice (Cohen et al. 2016, 319). While collaboration between science and policy is described to be a significant component in environmental governance (Van Den Hove 2007, 808), the lacking scientific impact is seen as a lost opportunity for more sustainable policy making (Weiland et al. 2013, 1).

The description of the science-policy gap has been criticised to assume a linear assumption between the two separated practices of science and politics. The linear model suggests that science comes first, then politics act on the scientific findings, thereby science is independent from politics (Soneryd & Sundqvist 2023, 45-46). The idea that science is built on non-political truth that objectively can be transferred to the political sphere has been criticised (Pielke 2007, 13; Turnhout 2013). The idea of separated worlds between science and politics can be traced far back to Plato’s cave. In Plato’s theory, only philosophers could, through a passage, move from the cave (the social world) and the light of the sun (the world of ideas) (Soneryd & Sundqvist 2023, 32). As reflected in the introductory quote, Latour extended this narrative by suggesting that the “the narrow door has become a broad boulevard” (Latour 2004, 11). Without entering a complex philosophical argument, the metaphor of a bridge can be re-framed as a place for the world of science and politics to meet and interact.

The research field ‘Science and technology studies’ (STS) and particularly scholars studying boundaries have explored the relationship between science and policy profoundly (e.g. Gieryn 1983; Guston 2001; Halfman 2003; Latour 2004; Huitema & Turnhout 2009). They deny the idea of a linear gap and suggest the relationship to be more complex and intertwined (Huitema & Turnhout 2009, 578; Pielke 2012, 12; Weiland et al. 2013, 2; Hoffman, 2023, 78). STS scholars generally advocate that the ‘bridging’ is an activity of hybridization or co-production of science and policy, thus their relationship is mutual (Latour 1993; Jasanoff 2004; Soneryd & Sundqvist 2023, 83). Scientists formulate problems and possible solutions related to climate change (Van Den Hove 2007, 812), while they need and

are required to be policy relevant (Lidskog & Sundqvist 2018, 171). Additionally, politicians increasingly use scientific expertise to make and legitimate political decisions (Ibid 2018, 171), thus, science and politics are described to be “inseparable and mutually constitutive.” (Turnhout 2018, 369).

The interaction between science and politics is often discussed as challenging in terms of their differences, as the practice of politics is based on the ambition to reach more power while science is based on the aspiration of truth (Sokolovska et al. 2019). Where these worlds meet can be conceptualised as the ‘science-policy interface’ (Ibid 2019, 2). Following Van Den Hove (2007), the ideal interface can be understood as “...social processes which encompass relations between scientists and other actors in the policy process, and which allow for exchanges, co-evolution, and joint construction of knowledge with the aim of enriching decision-making.” (Ibid 2007, 807). This thesis emerges from the very real issue of science-policy gap which means that we are not acting fast enough to mitigate climate change. This issue is addressed by exploring researchers’ understandings and experiences of their work in the science-policy interface. This exploration is done by examining how this interface, that can be illustrated as the idea of bridging science and policy¹, is constructed and reshaped in the daily work of the Swedish Climate Policy Council.

1.2 Climate Councils working at the Boundary

Globally, the number of what can be called expert advisory bodies or climate councils have increased, with the aim to tackle climate change through interaction between science and politics (Dudley et al. 2021). Thus, they are initiated to bridge the presumed gap between science and politics. They are created to e.g. give advice to governments and assess political action in relation to climate goals (Miljand & Bäckstrand 2021, 3). The first council implemented through legislation was in 2008 in the UK (UK Climate Change Committee) and in 2017, the Swedish Climate Policy Council was created as a part of the Climate Policy Framework. The Swedish Climate Policy Council will henceforward be called “the council”. The council’s

¹ Policy, politics and politicians will be used interchangeable throughout this thesis, addressing the work of people and processes in democratic institutions. Thereby, this thesis focusses on policies as a result of political work.

overall task is to assess the governmental politics in relation to the national climate goals and point out new directions for action. The council works as a link between scientists and policymakers which puts them in the centre of the science-policy interface. The idea of an interface assumes that different practices meet, which indicates boundaries between these practices. Organisations that work as bridges between practices of science and politics can therefore conceptualise as ‘boundary organisations’ (Lidskog 2014, 683).

Boundary organisations’ work is highly contextual and dependent on being adoptive to political and societal changes (Wesselink et al. 2013; Hoppe & Wesselink 2014; Lidskog & Sundqvist 2018; Wesselink & Hoppe 2020). Thus, political developments surrounding the council can be expected to impact the council’s work. The latest developments in Swedish climate politics have been characterised by trends such as politicisation of perceptions on public institutions (Andersson & Oscarsson 2020, 41), polarised variation of trust of research (Jönsson 2020, 75) and regression in political climate action (Klimatpolitiska rådet 2023 & 2024). A few years ago, the political majority addressed strengthening the Swedish climate goals, the present Government declares that the goals are estimated not longer to be reached and are under inquiry to change (Klimat- och näringslivsdepartementet 2023, 59). A general decline in political climate ambition and action is described in the media, by agencies and experts (e.g. Naturvårdsverket 2024, 5). Further, the instructions towards the council are currently under investigation by the Government (Klimat- och näringslivsdepartementet 2023, 51-52). The Government suggests that the council are to focus more on cost-efficiency and international climate mitigation. The council needs to navigate through this changing political context while addressing the scientific call for urgent action. This development makes the relationship between the practice of science and policy particularly interesting to explore. Such an exploration aims to bring forth challenges and opportunities in how the council navigate the boundaries between science and politics.

1.3 Demarcation, Coordination and Boundary objects in the Science-Policy Interface

Previous studies about relationships between science and policy suggest that these practices entail several challenges. They need to simultaneously be both scientifically credible and politically useful (Wesselink & Hoppe 2020, 1). Additionally, they conduct a balancing act of the unwanted issues of overpoliticisation (of science) and over-scientisation (of politics) (Weingart 1999, 151; Hoppe et.al. 2013, 287; Wesselink & Hoppe 2020, 24). As an organisation working between different worlds, the council defines proper action between them and other practices, which the theory of boundary work illuminates (Gieryn 1983; Halfman 2003). Essential features of boundary work are informal rules and habits (Hoppe et al. 2013, 284), hence the practice is constantly created (Weingart 1999, 160). This indicates the need for reflexivity, as their interaction can be seen as conscious and unconscious political action (Wesselink et al. 2013, 1).

With the objective to mitigate climate change, the council practice boundary work between science and politics. They establish what they consider reasonable to do and not to do, thus what is assessed as being inside and outside the boundary of their activities, which connects to the theoretical concept of *demarcation* (Halfman 2003, 70). Their perceptions of appropriate interaction between practices links to the related concept of *coordination* (Ibid 2003, 70). Additionally, interaction is made possible through essential text documents, which ties to the concept of *boundary objects* (Star & Griesemer 1989). Hence, I will analyse the council's boundary work by focusing on how demarcation, coordination and boundary objects are understood and conducted. These theoretical concepts are explored through the council members views of their role and relationship with the political practice. I suggest that this relationship matters in relation to the issue of science-policy gap, as the council is initiated to interact in the science-policy interface. Thus, the understanding of how science and politics are co-created is of value to strengthen national implementation of better climate policy, in line with the IPCC's call for more action.

1.4 Aim & Research questions

I aim to explore the science-policy interaction, through theoretical concepts from boundary work, in Swedish Climate Policy Council's context. Through this empirical exploration of boundary work, I aim to illustrate challenges and opportunities in the relationship between the council and politics, in terms of the council's role to convey better climate policy in Sweden.

RQ1: How do the Swedish Climate Policy Council members understand and conduct boundary work in relation to the political practice?

RQ2: In terms of enriching decision-making for better climate policy, what challenges and opportunities does the boundary work practice hold?

2. The emergence of Climate Councils

Over 100 countries have by now formulated national net-zero goals addressing climate change (Dudley et al 2021). To achieve these goals governments have created tools for implementation, e.g. policies, instruments and ‘climate institutions’ such as climate councils (Zwar et al 2023). Climate councils are established through legislation and are in general tasked to guide state-based climate policies (Abraham-Dukuma et al. 2020, 4). Since 2008, more than 40 countries have founded different types of climate councils (Averchenkova et al. 2021). With the increasing number of national climate councils, the ‘International Climate Councils Network’ was developed in 2021. They collaborate to share experience and to formulate common messages in relation to for example COP-meetings (Conference of the Parties).

The climate councils’ composition and tasks varies nationally (Dudley et al. 2021). Miljand & Bäckstrand makes sense of this variation through four categories: “1) scientific climate policy councils; 2) stakeholder climate policy forums; 3) inter-ministerial climate policy forums with stakeholders; and, 4) in-house advisory bodies.” (2021, 4). As their names reveal, the division is generally based on the composition of the council, i.e. the council members occupations and backgrounds. The climate councils have other varying attributes; the level of evaluating, thus being a “watchdog” (by making assessments); or advising, by being a “coach” (by giving recommendations and/or policy options) for the government; as well as being “convenors” i.e. engaging in the climate policy discourse (Evans & Duwe 2021,7).

2.1 The Swedish Climate Policy Council

In Sweden, there are several institutions which in different ways assess and give advice to the Government about climate policy. For example, The Swedish Expert Council on Climate Adaptation (Nationella expertrådet för klimatanpassning) that consist of practitioners, civil workers (with leading positions in governmental agencies) researchers and experts. They guide national climate adaptation policies by providing strategic proposals and assessing climate change impacts on society. The organisation of interest in this thesis, the Swedish Climate Policy Council (Klimatpolitiska rådet), qualifies as a ‘scientific climate policy council’ (Miljand & Bäckstrand 2021) and is considered as one of the most academic councils internationally (Weaver et al. 2019, 5). They consist of scientific experts and are therefore considered independent from politics and the Government (Miljand & Bäckstrand 2021). The authors draw on Evans & Duwe (2021) that operationalises ‘independent’ as members who are primarily not employees of the government. The council was created in relation to a set of policies, ‘the climate policy framework’, to implement the Paris agreement nationally.

The climate policy framework was created in 2017 by the Swedish parliament (7 out of 8 political parties) (Miljö- och energidepartementet 2016). It consists of three parts, the climate act, the climate goals and a climate policy council. The climate act defines that the governmental policies must be in line with the climate goals, and that the Government is required to conduct a climate action plan every fourth year (among other requirements, see SFS 2017:720). The climate goals include both milestone and long-term targets for decreasing national emissions of greenhouse gases. The council is described by the Government to be an independent, interdisciplinary expert body (Miljö- och energidepartementet 2016, 33). The governmental regulation with instructions to the council (SFS 2017:1268²) state that the council should evaluate how well the government’s overall policy is aligned with the climate goals, highlight policy areas where more work is required and contribute to a public climate policy debate (see Klimatpolitiska rådet, n.d, for more details). Hence, they hold all three tasks described by Evans & Duwe (2021,

² SFS 2017:1268 will henceforward be referred to as ‘instructions’.

35); evaluating, advising and conveying to advance climate politics in Sweden. In practice, the council evaluates the overall Swedish policy agenda in relation to the climate goals on a yearly basis and delivers a report with key recommendations for further action to the Government in March each year. It has become custom for the Government to reply on the council's recommendations, which can be found in the yearly budgets, or the climate action plans (the latest comments can be found in Klimat- och näringslivsdepartementet, 2023, 240-244). To grasp the broad task given by the government, each report has a chosen theme, e.g. 'transportation sector' in 2019 and 'synergies and conflicts in the climate transition' in 2023. The council additionally is tasked to provide an ex post-evaluation of the governmental climate action plan, which was the council's theme in 2020 and 2024 yearly reports.

The council consists of 8 council members with high scientific competence and a secretariat³. In the instructions, the scientific knowledge of the council members is specified to be within the fields of climate, climate policy, economics and social science. The members have occupations within research (are professors at universities) or do other types of scientific work. Thereby they are called "scientific experts" (Miljand & Bäckstrand 2021), and together they are practicing interdisciplinary collaboration. Their term of office, as described by the instructions, is limited to three years (six for the chair). The first set of council members was chosen by the government. Nowadays, the council themselves suggests their successors and new members. However, the Government formally makes the decision to approve new members after suggestions from the council. The council meets approximately one time a month and is supported by a small secretariat. The secretariat consists of 4 full-time employees, which is located at Formas, (a governmental research funding agency) who serves as the so-called host agency for the council. The secretariat provide support to the council in writing the yearly report, conducting analyses, planning the yearly launch event in relation to the publication of their report, and other tasks to fulfil the council's mission.

³ The Swedish Climate Policy Council 'the council' regards the collective of council members (Swedish: "rådet"). The secretariat (Swedish: "kansli") regards the civil servants that work full time for the council. Hence, 'the council' only refers to the council members, not the secretariat (despite that these two groups are difficult to separate as they collaborate).

In the governmental climate action plan that was delivered in December 2023, it was declared that the council's instructions are to be assessed with the aim to increase their focus on; cost-efficiency of climate policies; increase in social acceptance of the consequences of climate policies; and a broader international perspective (Klimat- och näringslivsdepartementet 2023, 51-53). The reason for this inquiry is described to be a need for a broader perspective on climate politics, where action is to be taken but without negative side effects for people, and "with increased or maintained prosperity" (Ibid 2023, 52). The additional international focus relates to their description of climate change to be a global issue that requires global solutions (Ibid, 2023). The Government highlights the distance between them and the council and thereby tasks 'Miljömålsberedningen' with the mission to further develop the Government's ideas (Ibid 2023, 53). Miljömålsberedningen is a parliamentary committee that was created to reach broad political consensus around several different long-term environmental issues. Representatives from all parties in the Parliament are part of the committee. It's customary that questions that regard the climate policy framework are dedicated to this committee. Which means that all political parties together decide, through a process of consensus, on developments of the council. This context is described to provide a sense of the political setting of which the council acts within, which is key to have in mind in relation to the conducted interviews with the council members.

2.2 Former research

The practice of science-policy interfaces has mostly been studied from a theoretical perspective (Spruijt et al. 2014). Less studies have focused on practitioners' experience of the science-policy interface (Gluckman et al. 2021). The most similar study that I found was conducted by Huitema & Turnhout (2009). They explore boundary work through interviews with practitioners in the Netherlands Environmental Assessment Agency (PBL). The organisation and their study differ from this thesis on several levels. The organisation Huitema & Turnhout (2009) focused on are fulltime governmental employees conducting research on spontaneous governmental inquiries. Miljand & Bäckstrand (2021, 19) defines the

PBL as an agency and thereby excludes the organisation from their overview of climate councils. In addition to this, Huitema & Turnhout (2009) have a different theoretical framework and methodology as they focus on discourses based on typologies. Besides these differences, the authors provide interesting findings. They interpret that Pielke (2007) suggest that boundary organisations are particularly well fitted to deal with science-policy interaction (in contrast to individual scientists). Nonetheless, Huitema & Turnhout (2009, 591) conclude that these organisations are no magic bullet as they share the same challenges as scientists in general, such as becoming advocates for politically set goals⁴. Their conclusion further encourages this thesis aim of bringing forth opportunities and challenges that boundary organisations manage.

Another empirical research studied relations between science and policy in the UN Framework Convention on Climate Change (Lövbrand 2007). Lövbrand (2007) explored the links between science, policy & power in relation to scientists and governmental negotiators in the context of UN Framework Convention on Climate Change. She highlighted that social relations shape the practice and outcome of their work. This result thus strengthens the contextuality that this thesis draws on, which gives meaning to conducting qualitative studies on different boundary organisations. However, the group of interest worked with scientific research particularly aimed to be useful for society (regulatory science, (Ibid, 2007, 40)), not assessment work as the council. Hence, I interpret that the group studied by Lövbrand (2007) closer is to the scientific practice, while the councils work closer to the political.

Van Enst, Driessen & Runhaar (2017) explores the interface in various context in the Netherlands through interviews with people from science, policy and consultancy. They conclude that “...they see themselves as (strategically) sensitive to all stakes and stakeholders involved, possess a large network, and act without interests.” (Ibid 2017, 1) Their study asks for more in-depth empirical research and detailed analyses of specific cases. Which is something this thesis aims to contribute with. I interpret that former research illustrates how processes of

⁴ This is a simplification as Huitema & Turnhout (2009) discuss how the boundary organisation take on typified roles that I do not expand on here.

interpretation shape the science-policy practices, which blurs and problematises assumptions that these worlds are firmly divided, which other researchers also have illustrated (Wesselink et al. 2013, 7; Wesselink & Hoppe 2020). This increases the interest of providing reflexivity and awareness of these conscious and unconscious choices of action.

In sum, there are some interesting examples of qualitative research with focus on practitioners in the science-policy interface. There exists a grand and historical supply of theoretical literature on the matter (see next chapter). But no one to my knowledge has so far focused on the rather new phenomena of national climate councils through analysis of their own understandings of their (boundary) work. There is a general call for more studies close to the practice, to develop the knowledge of these types of organisations (McNie 2007; Michaels 2009; Hoppe 2009; Spruijt et al. 2014; Wesselink & Hoppe 2020; Gluckman et al. 2021), a scientific undeveloped area which this thesis aims to improve. As boundary work is highly contextual (Wesselink & Hoppe 2020, 24), this thesis does not aim to discover conditions for 'good' boundary work. Instead, this thesis aims to illustrate a case of which can be inspirational for other organisations and future research on how boundary work is performed in practice.

3. Theoretical framework

In this section I describe the interdisciplinary research field of Science and technology studies (STS), theories of boundary work and how I interpret and apply chosen theoretical concepts.

3.1 Science and technology studies

Since Kuhn (1962) developed the idea of scientific paradigms, social science has viewed science as an activity based in social practices (Soneryd & Sundqvist 2023, 14). Following Kuhn's ideas, STS was developed in relation to technoscientific research fields, where a social and political perspective was added in 'hard science' spaces. The field of research emerged in the 1970s, the aim was to illuminate the "sociology of scientific knowledge" (Soneryd & Sundqvist 2023, 55). There was a division created historically within STS, where some focused more on social movements, others on constructions of knowledge and co-production between science and social institutions (Sovacool et al. 2020, 2). As the introduction reveals, this thesis follows the latter branch.

Where the two worlds of science and politics meet connects to the concept of co-production, developed by Jasanoff (2004). She emphasises that science and policy are mutually dependent, which in turn is related to the idea that environmental knowledge-making and decision-making is inseparable (Turnhout 2018, 369). Assessing 'scientific' institutions are indeed part of a governance regime which in terms of legitimacy and accountability need "constant reflexive scrutiny by the institutions themselves" (Turnhout et al. 2016, 70). Inspired by Jasanoff, Sundqvist & Soneryd (2019, 89) conclude that scientific experts draw their legitimacy from the scientific practice while it is the political connection that

creates a meeting place for the two worlds (science and politics). This can be seen as a rhetorical distance but practical proximity (Ibid 2019, 89).

Other influential scholars have named the studies within the tradition of social construction (such as co-production and boundary work) in relation to science and policy interface ‘The Second Wave of Science Studies’ (Collins & Evans 2002). They criticise STS-scholars to “become so successful at dissolving dichotomies and classes that they no longer dare to construct them.” (Ibid 2002, 239). The authors instead suggest a ‘third wave’, where they leave Kuhn’s (1962) social perspective and instead focus on the issue of dissolving boundaries, by aiming to ‘naturally’ demarcate science from non-science. Focusing on substantive knowledge, they advocate that scientists only are useful within their own specialisms (Ibid, 2002, 270 & 250). This view is one perspective in a larger discussion within the research field of STS (Lidskog & Sundqvist 2018, 169). Collins & Evans’(2002) analysis raises several questions; what happens with the *social* in science; and how do the authors understand interdisciplinary work, where going beyond specific research fields is desired. Interdisciplinary collaboration is a condition of the council’s work as the governmental instructions specify that a variety of expertise should be represented by the council members. Another relevant question is how one determines what knowledge is useful for what issues, as suggested by Lidskog & Sundqvist (2018, 174).

Lidskog & Sundqvist (2018, 175) describes these different branches as ‘relational view’(social context conditionalize what expertise is, i.e. second wave) and ‘substantive view’(knowledge denotes expertise, i.e. third wave). Following Lidskog & Sundqvist (2018) who suggests that these views are compatible, I recognise the existence of substantive scientific knowledge. Above all this thesis suggests that boundaries between scientific experts and political practice are constructed, hence produced in a social context (Ibid, 2018). This means that it is of great interest to study how scientific experts interact with politics, how important scientific knowledge is in such activities, and what the results of the interactions are. Theories of boundary work emphasise this relation, thus, this thesis builds on their theoretical concepts and assumptions.

3.2 Boundary work – a family of theories

Gieryn (1983) is one of the pioneers of boundary work. The boundaries he explored were in relation to the division between science and non-science. These boundaries were not described as constant and obvious but socially constructed: “Thus, “science” is no single thing: its boundaries are drawn and redrawn in flexible, historically changing and sometimes ambiguous ways.” (Gieryn 1983, 781). This perspective comes from the symbolic interaction tradition, as the boundaries are seen as produced and reproduced and not stationary phenomena’s (Halffman 2003, 55). This idea is a fundamental assumption in this thesis, as well as the assumption that the construction of these boundaries has impacts on action in the science-policy interface.

A few years later Star & Griesemer (1989) formulated the concept of boundary objects in relation to museum objects. These objects represent a ‘modus operandi’ (how to conduct something) between different social worlds. The boundary objects are described as following:

”...scientific objects which both inhabit several intersecting social worlds ... and satisfy the informational requirements of each of them. Boundary objects are objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites.” (Ibid 1989, 393).

These objects are created to satisfy concerns that exist in different worlds (Ibid 1989, 412-414) thereby making interaction possible between different practices. I interpret that plasticity can be understood as flexibility/adaptability of the object, and robustness connotes that the objects are understood in a similar manner from different perspectives to create stability amongst the worlds. These in turn are characteristics that objects need to have to be salient for practices and enable interaction. I interpret ‘worlds’ as practices. For example, the IPCC Synthesis Report is a typical boundary object (Hoppe et. al. 2013, 286), where direct collaboration between the scientist and politicians creates a common text (Ibid 2013, 284). Thus, the text is approved scientifically and politically. Hence, the Synthesis Report, as a boundary object, connects the worlds of science and policy.

In this thesis exploration of the council's boundary work in relation to the issue of the science-policy gap, boundary objects may play an important role. Thereby boundary objects are one of the guiding theoretical concepts in the analysis. In relation to this case study, I interpret that *boundary objects* highlight understandings of texts that enable interaction between the council, politics, and other practices. As I only have collected material from one world, the council, the other worlds in relation to the boundary objects will be addressed through the council members perspective.

The translation issues between science and other practices continued to engage scholars and in 2001, Guston developed the term boundary organisation. As conceptualised in the introduction, I interpret that the council is a typical example of a boundary organisation. These organisations produce boundary objects, involve actors from different sides of the boundaries, and "...they exist at the frontier of the two relatively different social worlds of politics and science, but they have distinct lines of accountability to each" (Guston 2001, 401). The responsibility to satisfy both the scientific and political practice is also called 'dual accountability' (Hoppe et al. 2013, 285). These types of organisations are described to avoid the problem of politicisation of science and the scientisation of politics as they need to make sense for both worlds (Guston 2001, 405). Hence boundary organisations manage interaction between scientists and policymakers (Lidskog 2014, 683) or 'bridge gaps' between them (Wesselink & Hoppe 2020, 2; Lidskog 2014, 673, interpretations of Guston 2001). The success of boundary organisations can be described by how well they have managed to adjust to "context of policy networks and political-cultural spheres." (Wesselink & Hoppe 2020, 13).

We now know that theories around concepts of boundaries both concern separation of practices and managing interaction between them, simultaneously we know that these practices are intertwined and mutually dependent. In relation to these ideas, Halffman (2003) formulated a vocabulary to grasp boundary work without extensively defend these boundaries more than necessary. Among other ideas, he suggests that:

"Boundary work defines a practice in contrast with other practices, protects it from unwanted participants and interference, while attempting to prescribe proper ways of behaviour for

participants and non-participants (demarcation); simultaneously, boundary work defines proper ways for interaction between these practices and makes such interaction possible and conceivable (coordination).” Halffman (2003, 70)

Halffman (2003, 71) adds that his vocabulary as such “*explains* next to nothing: it is only a skeleton for the actual analysis”. In addition to boundary objects, the analysis will be guided by the concepts of demarcation and coordination developed by Halffman (2003). *Demarcations* are interpreted as phenomena that focus on differences between practices and statements of where certain boundaries seem to exist. It can also be boundaries of what is considered the council’s role or not. *Coordination* is understood as descriptions that emphasise interaction between practices, blurring of boundaries and learning beyond these boundaries. Demarcations and coordination are two sides of the same coin (Hoppe et al. 2013, 284), which have explicit implications for the analysis. Defining interaction also defines how separate practices behave in relation to each other. Thereby coordination and demarcation can be the same thing. This challenges the analytical act of separating the phenomena, thus, phenomena’s categorisation will be a generalisation.

4. Methodology and Material

This chapter will first describe the process of conducting interviews. I continue by providing my reflections of writing this thesis and finalise by describing how I made sense of the collected interview material through a thematic analysis.

4.1 Interviews

Semi-structured interviews with council members were conducted between 2024-04-03 and 2024-05-02, to explore their understanding of boundary work. My aim with the conversations was to hear about their experiences in their own words, which is the key intention in interpretive research (Magnusson & Marecek 2015, 2). This method gave the benefit to pre-decide subjects and questions through an interview guide, but also allowed flexibility regarding follow up questions and a free-flowing conversation (Robson & McCartan 2016 285). Thereby I crafted an interview guide with open ended questions with the purpose to create a flexible interview conversation (Magnusson & Marecek 2015, 47). The interview guide was structured after four overarching themes concerning; taking on the task of being a council member; the work in the council; the researchers' role in climate politics; and relations between the council and politics (Appendix 1). In line with my focus on council members' understandings of boundary work, the semi-structured interviews are a fitting method as sense making can be seen as a dialogical process (Wibeck & Linnér 2021; Magnusson & Marecek 2015, 6 & 47). Individual conversations were chosen to guarantee that all participants' individual reflections were to come forward. Focus groups, which could have been a methodological option, put larger pressure on the researcher to practice facilitation, and they are more challenging in terms of guaranteeing confidentiality (Robson & McCartan 2016, 300).

The process of conducting interviews started by inviting members of the council with a scientific background, a total of 16 people (out of total 17 current and previous council members). I briefly explained my interest and aim and invited them to contact me for more information and the possibility to contribute as an interviewee. A total of 10 people, both current and former council members, participated. One day before the interview I sent out the interview guide and received the signed consent sheet (designed by the SLU, modified by me). The average length of the interviews was 54 minutes. I recorded the interview and transcribed it through Word. After the first interviews I slightly adapted the interview guide to create a better flow in the conversations.

4.2 Reflections on writing this thesis

This section will mainly focus on my relationship with the council and how it relates to crafting this thesis. The reflection illuminates both my dependency and independency in relation towards the council.

I was an intern and a part-time employee, ‘analyst’, in the council’s secretariat during the fall and winter 2023-2024. I worked with collection of data for the report of 2024, taking notes during the councils’ meetings, as well as other tasks that the secretariat conducted. The idea of this thesis emerged in conversations with colleagues at the secretariat. Therefore, I had previous understandings of both the organisation and some of the interviewees when entering this project. It gave me the advantage of having firsthand insight on the council’s daily work. This was experienced as a benefit as it felt easy to understand the interviewees as we had shared experiences. On the other hand, when conducting the analysis, I sometimes felt like I lacked a fruitful ‘outside perspective’. A higher degree of outside perspective could have opened up the opportunity to react on phenomena more connected to everyday practice in the council. In the end, this relationship enabled the thesis to take form, and I hope that my position made it easier to avoid misunderstandings in the interpretational work. Interestingly, studies on science-policy interfaces’ often hold some level of ‘inside perspective’ as the researcher to

some degree is occupied with the scientific practice. This peculiarity is pointed out as academics in this field study their own profession (Spruijt et al. 2014, 17).

When scholars study peoples' understandings and sense making of phenomena, they inevitably become representatives of their study object (Joosse et al. 2020, 762). Hence, I experience the need to clarify that in writing this thesis, the interpretations of interviews, discussions and conclusions are solely my own. The collaboration with the council entails the ability to accomplish this thesis, i.e. being accepted to conduct interviews and having interesting discussions about my thesis with the secretariat.

4.3 Thematic analysis

Thematic analysis was the methodological tool of choice as I aimed to both read the interview-texts with the theoretical lens as well as looking for themes from the interviews itself. Hence, I conducted a deductive and inductive approach in the analysis. The core in the method is to code, analyse and write about patterns that are drawn from a set of qualitative data (Braun & Clarke 2006, 79). Thematic analysis is suitable as it has the benefit of not being tied to any pre-existing theoretical framework, which makes it flexible for a diversity of theories (Ibid 2006, 81). The thematic analysis was conducted in relation to the theoretical concepts of demarcation, coordination and boundary objects.

After using Word's automatic transcription function, I familiarised myself with the material through listening to the tapes while reading the transcription to correct for accuracy. At this point I took notes to contain ideas I got from the empirical material. This developed my understanding of what theories to use in this thesis, drawing from experience of my master studies, input from my supervisor, and reading studies on science-policy interface ahead of the interviews. In addition to the three chosen theoretical concepts, I interpreted the code of 'internal features' of boundary work. Internal features appeared in a more inductive manner, where I collected citations about internal work in the council.

I initiated the coding process by reading all the interviews while taking more organised notes in Excel where I summarised the interviewees thoughts in relation

to the theoretical concepts and ‘internal features’. Throughout this phase I developed my understandings of what the theoretical concepts meant in relation to the thesis’s particular case, which is presented in the next chapter (findings). At this point I formulated codes and subcodes, to prepare for the next step, coding in NVivo. Codes are part of the text that exemplifies the same phenomena (Robson & McCartan 2016, 467). The codes were demarcation, coordination, boundary objects and internal features. Within these codes I created subcodes where I organised general features that was interpreted both deductively and inductively (see table 1). After coding the interviews, I formulated the findings through writing.

The next step was thematically analysing the four codes and their subcodes. This was done by reading, interpreting and summarising patterns of citations in my own words. Patterns could both be chunks of citations that point to similar ideas, or citations that concern the same topic but hold different ideas. This process was guided by what I found relevant in relation to the science-policy interaction with the aim of creating better climate policy. These patterns were then organised into themes. This was made through several briefings in writing by merging, reorganising and condensation of text and citations. The themes are divided in four overarching themes and eight sub- themes. For an overview of codes, sub-codes, themes, and process, see table 1.

In qualitative studies like this, interpretation is the core of the method. This calls for an (additional) reflection on my own position as an interpreter. People understand things through previous "conscious and unconscious perceptions..." (Føllesdal & Wallöe 2001, 69, my translation. See Thornquist 2021, 150). Which affects how one makes sense of interview materials. Thus, my aim is to explicitly recognise my part as a researcher in this text. Both as someone that is a part of the interview conversations and as an interpreter in conducting the analysis. Hence, I position myself actively in the text. On this line of reasoning, inspired by Gramini (2023), the interview people are named ‘interlocutors’. The word interlocutor is being used instead of interviewee to highlight that relationship and the conversational situation takes a central part in what the interviewee utters. Braun & Clarke (2006) call for a more transparent theoretical positioning in relation to conducting thematic analysis, hence I clarify that this thesis has a social

constructivist foundation. Thereby I aim to illuminate social context and structural conditions (Braun & Clarke 2006, 85).

In the findings section, the term ‘interlocutors’ will be interchangeable with council members. It will not be apparent if the interlocutor is a former or current member of the council, if it’s obvious that I refer to a previous council member, ‘X’ will be used instead of their chosen number. This was done to maximise the interlocutors’ anonymity. I relate to the interviewees as a collective, the council, instead of making sense of them as individuals. While I do not know whether all members in the council would agree on a specific matter, the collective approach to the interviews allows a certain level of generalisation, and thereby some ideas are described as the council’s ideas. All citations are translated by Google translate and adjusted by me to make them understandable in reading.

Table 1. Overview of codebook and process.

Codes	Sub-codes	Themes
Was decided on during the interviews, where I picked boundary work as theory and started to familiarise with the interview material.	Was created during readings of the interview material to organise chunks of text within the codes in NVivo.	Was interpreted and created in the process of writing about the findings, from reading the grouped citations made in coding. There are four overarching themes and eight sub-themes.
Demarcation	Independency; Demarcation between the council and politics; Demarcation between the council and science	Making boundaries <ul style="list-style-type: none"> - Demarcations - The balancing act
Coordination	Accountability; Dependency; Coordination with politics; Coordination with science	Creating interaction <ul style="list-style-type: none"> - Bridging worlds - Dependency
Internal features	Capacity; Characteristics; Coordination; Demarcation; Secretariat	Conducting micro boundary work <ul style="list-style-type: none"> - Interdisciplinary work - The secretariats’ role of translating politics
Boundary objects	Climate policy framework; Instructions; Report	Constructing boundary objects <ul style="list-style-type: none"> - The instructions - The yearly report

5. Findings

The findings are presented in four overarching themes and eight sub-themes. Every sub-theme is summarised at the end of its chapter.

5.1 Making boundaries

In this section I aim to highlight how the interlocutors reflect on boundaries between the council and the political practice. As suggested by Halffman (2003, 70), boundary work is a practice that takes form by being in relation to other practices and describes appropriate ways of behaviour within and between these practices. This chapter is divided in the two sections ‘demarcations’ and ‘the balancing act’.

5.1.1 Demarcations

The first type of demarcation refers to the council’s understandings of their position, and how these understandings impact how they act (what they do). Interlocutors described their mission to be on: “high governance level” (I4)⁵, “system-level” (I10) “high level of abstraction” (I4, I5) or having a “helicopter perspective” (I7). Thus, it was understood as appropriate to be general. To become more specific in the councils’ work they risk overlapping other agencies’ tasks as well as governmental missions (I2). Which relates to the relativity of boundary work, as the practice position itself in relation to other practices. It’s a demarcation of the councils’ mission and positions towards politics and other agencies, hence, ‘we will reach to this point, then you take over’. The council’s positioning is also in line with the instructions that point out that the council is to evaluate the overall

⁵ ‘I’ stands for ‘interlocutor’.

politics, which was highlighted as a good thing (I8). Making broad analyses is additionally described to be in line with the view on climate change in general, that is described as something that can't be limited to a narrow 'climate field' (I6, I8, I10). The interlocutors' interpretation of the council's practice particularly impacts the creation of recommendations to the political practice, which is addressed in the chapter on boundary objects.

"we landed at a high kind of governance level because no one else has that mandate or task, or has realised that it can be done in that way too. I actually think that we ended up quite right."
(I4)

The expressions "watchdog" and "coach" were mentioned in our conversations regarding what role to take in the interaction between the council and politics. It was experienced by interlocutors that they try to find a balance between warning the Government on dangerous paths (watchdog) and helping them with fruitful advice (coach) (I4, I5, I9). When I asked about what a watchdog connotes it was said "*No but it just means that you say 'danger, danger'*" (I9). While the role of being a coach was more related to being constructive towards the Government (I9). Being a coach was associated with being closer to the government, which was expressed to be more difficult in terms of demarcations: "*This is such a formal role. So, it's hard to be a coach. You kind of have an arm's length distance in that way.*" (I4).

Another demarcation is that the council does not view themselves as a political decision-making organisation (I4) and the council are not supposed to be 'substitute politicians' (I2, I8). Thereby, not telling politicians what to do (I4), respecting and taking a step back from political suggestions and ideologies (I2). This included not addressing party politics particularly (I5, I6). Hence, they stay away from addressing political parties directly, by investigating the government's action, not specific parties' actions. These views portrayed a dichotomy between the council and politics, as the interlocutors are careful to maintain a clear distinction between politics and science in their role to present objective knowledge.

The council is not a political body. We are not appointed by politicians in that way. It is not tied to party politics and has no direct connection to the parliament [Riksdag]. It's a council for

the Government to develop wiser climate policy and the Government handle the proposals that come. (I6)

The political decision making comes with accountability, which then the council, demarcating the political, circumvent (I4). This demarcation came with reflections on how difficult it could be to draw this specific line. Particularly when creating recommendations towards the political practice (I2), as they are made to affect political decisions.

Independence is a concept that I interpret to be closely connected with demarcations. It can be seen as a way to express a distance between the council and politics, and it is a word that is commonly used in the council's context (which 'demarcations' is not). Thus, I tried to figure out what the idea of independency meant for the interlocutors in our conversations. Interlocutors mentioned that independence is something they *experience*, that they have the feeling they can conclude whatever they see fit in the yearly report directed to the Government (I1) without political interference (I2). This is also expressed through the common expression 'arm's length distance' towards the political practice (I8). Ultimately, independence has to do with being grounded in no specific interest but in "truth", knowledge, facts and logics (I3, I4, I6). Thereby being grounded in scientific traditions and literature (I1, I3, I7). This is additionally linked to the importance of using transparent methods and specific criteria in the councils' work (I8), which relates to conducting their work with a sense of 'scientific integrity' (I1, I7).

As a researcher, it is very important for me to be able to stand free, from politics, so to speak, therefore what we are doing is, after all, a scientific work. I think that the scientific approach is a clear systematic methodology, that you sort of ground yourself in the research situation. (I8)

Additionally, the connection to other boundary organisations through 'The International Climate Councils Network' (ICCN) was highlighted (I8, I10), which seems to increase the experience of independence. These connections were described to make it more difficult for the politicians in Sweden to disassemble the council (I5).

Independence from politics is furthermore connected to conditions provided by institutional design. These conditions are; the power to choose members; distance to other governmental organisations (such as the host-agency, Formas (I10)); and monetary capacity (I1,I3, I8, I9), which gives conditions to conduct analyses (I3, I9). Primarily it was emphasised by the interlocutors how important it is to have the power to recruit their own council members (I3, I6, I7, I8, I9, I10). When a new member is chosen by the council, the Government needs to approve their suggestion. This was not considered an issue; it was highlighted as a fair “check and balance” procedure as one interlocutor described (I10). Where the government’s role in the recruitment could help avoid nomination on partisan grounds.

In sum, demarcations towards the political practice and other practices, create the council’s role which mainly is to be on a high-level perspective in politics. Independency includes both physical (institutional, monetary) and psychical (experience-based) conditions for this role. Demarcations highlights the importance of having a length of an arm to politicians to be able to practice in the science-policy gap while maintaining legitimacy as researchers.

5.1.2 The balancing act

This section focuses on where interlocutors reflect on demarcations and coordination simultaneously. Which can be seen as a transition-theme towards the next chapter, creating interaction.

In contrast to the previous sub-theme, the demarcation towards the political sphere is not always understood as clear cut by the interlocutors. The idea that the council is unavoidably political was uttered, as the report is directed towards the Government (I3). This fact led to emphasising, again, the importance of scientific connection and demarcation towards the daily politics (particularly party politics) while still making sense for the political practice (I3). Hence making boundaries while maintaining connection to both the scientific and political practice. I relate these conversations to the theoretical concept of ‘dual accountability’ which boundary organisations hold. As the “...the management of the boundary organisation is accountable to representatives of both science and politics.”

(Wesselink & Hoppe 2020, 14). Stated by interlocutor 10, the council needs: *"The relevance toward politics at the same time as being scientifically anchored some way in the analysis"*.

The dual accountability concerns the need of being anchored in the political and scientific practices at the same time. To make sense for politics, one needs to understand the political reality (I10). Therefore, it's pointed out that analyses about the latest development in climate relevant politics is a major task for the council (I4, I7), especially as scientists do not work with the daily politics. In addition to this, it's important not to be too adaptive to the political context to maintain the scientific anchor (I4, I7). This illuminates the balancing act that boundary work is, both separating and including knowledges and practices at the same time.

This balancing act creates a practice in the council to position oneself between science, experience/expertise and politics (I10). The fact that they analyse and adapt to a phenomenon that is fast and dynamic makes the process different from a scientific process (I10). As it needs to be up to date and relevant for politics, their work is based on methods but also their gathered knowledge, which underscores that they are scientific experts and not conducting scientific research in the council (I4, I6, I7). It's not science but: *"Expertise or logic sometimes then? Politics doesn't really act according to the same criteria as publishing a scientific article."* (I4). They describe that the report is not scientific but is based on scientific features, such as scientific literature and analytic methods. If the report were to become more academic, it would risk being less valuable for the political world (I10), while it shouldn't lose its scientific ideal of truth (I4, I10).

In sum, the council anchors their work in both the scientific practice and the political practice, which creates their own boundary work practice. This sub-theme suggests that boundary work is an act of navigating between the political and scientific agendas.

5.2 Creating interaction

This section addresses ideas that came up in our conversations that relate to interaction and coordination between the council and the political practice. As

suggested by Halfman (2003, 70), boundary work make this interaction possible and describes what proper interaction between practices are. This chapter is divided in the two sections ‘bridging worlds’ and ‘dependency’.

5.2.1 Bridging worlds

The interlocutors highlighted their will and role of helping, sharing knowledge and doing their duties (I1, I4). Contributing to a societal sustainable development was occasionally connected to the fact that they see the council member-role as a part of the university’s “third mission” (I4, I5, I7). As they are publicly funded in their daily work a feeling of responsibility was expressed, to contribute to the society with their academic experiences (I1, I4, I5). It was connected to the experience that the council is a place where they can make a political difference in terms of climate change (I5, I7, I8). On this term it was also brought up that they recognise that politicians generally can’t understand and be updated on scientific findings, which is something the council could contribute with (I1, I7). In addition to their scientific capacity, the external analyses (“omvärldsanalys”) which the council conducts are an example of helping the politicians with fruitful examples from other countries (I2, I7). As addressed before, the council have taken a high-level perspective in their work. Instead of going into details, the council’s role was described to be someone that points out useful directions for politics and creating a shared language for the climate related politics (I8). In sum, the aim is to help the Government by giving recommendations which enable politics to better reach the climate goals (I5).

I wonder how you, as a researcher, feel about working with these recommendations and assessments to the Government about climate policy? (Researcher)

It actually goes back to my basic view of what my role as a researcher is. I shall contribute with my research and my knowledge to society's development and so, for me, it is obvious that it is an important role that you have as a researcher and here there is a very clear space where you also have the mandate to do it. (I5)

Another way of interaction is how the council members bring knowledge back to their occupational origin from their work in the council (I7, I8). Learning about the Swedish and EU political system enables insights for developing new research

questions and visions to their daily work (I8, I10), which later also could be of use for the council (I3). This increasing understanding of politics can also develop sympathy for the complexity of the work that politicians conduct (I10). The position as council member furthermore comes with more connections with other people working with similar questions (I2, I4, I7). Hence, they increase their professional network and learn from people that revolve around climate governance nationally and internationally.

In sum, the council's work is based on the idea of contributing to the political practice with a helping hand. The council provides a common language for climate related politics, which is an example of how intertwined the council gets with politics. When the council better understands the political practice, their own scientific practice and personal competence evolves. This sub-theme therefore highlights how the council bridges between the political and the scientific by helping and learning, which is another way of describing the process of politicisation of science and scientisation of politics.

5.2.2 Dependency

Focusing on demarcations led to highlighting the council's independency from politics. This section instead explores the council's dependency on politics, as an example of interaction between the practices.

A saying is that in the same manner the council was created by politicians it can be disassembled by them (I2, I5). This dependence is seen as an important connection (I3, I7, I10), as it gives the council mandate to conduct their assessment and recommendations on their demand (I4, I5, I8). The relationship between the council and the politicians are therefore important to tender (I10). The fact that the council was created by the majority of political parties in the Swedish parliament gives the relation a foundation of trust (I2). The connection between the council and politics is described to be a condition to be taken seriously as a climate council (I5, I8). The positive experience of the relationship between politics and the council also came to the surface through the positive experience of being nominated by the Government when the council was created (which former council member was).

"It is the politicians who have decided that we should have a council, and I think that it has somehow given importance, in that the council relates to, like, the whole political aspects in some way." (I8)

In sum, the dependency on the political process legitimates the process of scientisation of politics, as it's a democratic decision to have a council and receive their knowledge.

5.3 Conducting micro boundary work

In this section I will zoom in on the boundary work within the council. In our conversations I found patterns of demarcations and coordination between different scientific disciplines within the council, which the sub-theme 'interdisciplinary work' addresses. This sub-theme additionally goes ahead by looking into how the boundary object, the yearly report, unites different disciplines. The following sub-theme 'the secretariat's role of translating politics' concerns their task of interpreting the daily politics and being an engine in the council's work.

5.3.1 Interdisciplinary work

The value of interdisciplinary collaboration was emphasised in our conversations (I4, I6, I7, I8, I10), which I connect to internal coordination and demarcation. Coordination in the sense that they highlighted the importance of being adaptive towards other council members, by respecting and learning from the different academic disciplines (I1, I2, I4, I5, I6, I8, I10). The disciplinary variety was described as the key factor in the council's work. For this diversity to be useful was demarcations between the academic disciplines highlighted important to practice too. In the sense that it is important to contribute to an interesting debate with reactions and different ideas, by going beyond a culture of consensus (I7, I9). Trust amongst the council members was described as important as they discuss matters that they have different levels of knowledge on (I1, I8). In those cases where one holds less knowledge, a council member could add an outside perspective on that specific matter (I1).

What is important for a functioning council? (Researcher)

No, but I think that people come from different backgrounds, have different residences of knowledge, but also have slightly different temperaments and like focusing on slightly different things is valuable... So it's [the council] composition is very important, but also that everyone is sufficiently open and have a little interdisciplinary thinking as individuals so that you have respect for others. (I4)

I interpret that the yearly report works as an internal boundary object or gathering place for the council. As they need to deliver this joint text, it's described as 'proper' interdisciplinary work.

"Then it was also very fun to be forced to work interdisciplinary. If you say so, for real. You always talk about this, but the council is very good at this, you have to sort of try to get the common text together." (I10)

Additionally, the writing of the report join the the civil servants (the secretariat with more political focus, which the next section addresses) and the council members (with different academic backgrounds) (I8, I10). They negotiate the content and work until a level of satisfaction is reached (I5). Thus, the boundary object can be interpreted as a tool for coordination and demarcation internally in the organisation.

5.3.2 The secretariat's role of translating politics

When I look at the interaction between the council and the political practice, the secretariat becomes particularly interesting. I didn't include any planned questions on the secretariat's role in our interviews, but interlocutors' descriptions of them made me realise their importance in the boundary work practice. I interpret that the secretariat's role is described primarily to be a link between the council and the political world. The secretariat is portrayed to bring knowledge about the political system and connections to the political world (I2, I9). Civil servants in the secretariat that have previous experience of political institutions are understood as important and fundamental for the council (I2). This enables practical political knowledge that the scientist in the council often lacks (I2, I4), which supports better interpretation of the political world. In contrast to the council, the secretariat works full time and performs central tasks like analysing the politics, interpreting the

instructions and writing drafts (report and other texts such as press releases) (I2, I7). Thus, the collaboration and trust between the council and the secretariat is important (I2, I8).

Many of us do research. We don't have enough time to follow, 'what is actually happening within the EU?' These, like the formality around the instructions we have, they [the secretariat] do everything. The groundwork. I think it is very valuable that they also have this understanding of politics. About how things work about various processes within the Government office. (I2)

In sum, to understand the political practice, experience of the political world, time to analyse this world and following the political development is key work. This makes the secretariat knowledge brokers of the political practice; they are thus important in the council's boundary work practice.

5.4 Constructing boundary objects

Boundary objects, initiated by Star & Griesemer (1989), is understood as texts that enable interaction. They are meant to facilitate a space where science and politics can collaborate and understand each other. This section explores two boundary objects; the instructions that are given to the council from politics; and the yearly report made by the council addressed towards politics.

5.4.1 The instructions

The plasticity of the instructions, meaning their general feature, allow the council to create their role in a flexible manner (I4, I7, I8). The instructions are thus appreciated with their suitable number of (not too many) details, which gives room for interpretation (I5, I7, I10). I believe this indicates that the instructions not only "inhabit several intersecting social worlds", (Star & Griesemer 1989, 393) but also without too much friction enable a meeting place and interaction between the council and politics. The instructions work as a foundation which the council and secretariat interpret and put to practice (I4). *"It wasn't just walking into a role that was ready, but we had to create that role together."*(IX).

One of my interview questions related to recent political initiatives on changing the councils' instructions. This initiative is a political idea to, in general, add an increased international and cost-efficiency perspective in the councils' work (as described in chapter 2.1). One pattern in our conversations about understandings of this potential change, was a demarcation towards the political process by saying it's not the council's business to have a say on the matter (I1, I5, I7). Another view was that it's natural for instructions to be re-evaluated due to the flexible dynamics of environmental politics (I2, I4, I8, I10). For example, European climate policies (e.g. the developed 'Fit for 55') have changed widely since the council was initiated in 2017. On the other hand, it was pointed out that a more international focus could cause a decreasing rhetorical focus on Swedish responsibility and action (I3, I9). Additionally, it was mentioned that the report already has an international perspective (I8) and include the cost-efficiency dimension (I2).

In our conversations it was pointed out that frequent changes (I10) or changes that would make the council's task narrower (I5, I7) could be interpreted as limiting for the council. *"That, there is a length of an arm's distance when it comes to not... changing instructions from time to time just because you feel that the council is critical."* (I10). This indicates an appreciation of long-term thinking, which could be a shared view by the government. Since they describe in their climate action plan (Klimat- och näringslivsdepartementet 2023, 53) that due to the council's independency, a suggested change in the instructions will be a parliament-based decision through 'Miljömålsberedningen' (see description in chapter 2.1).

In sum, I interpret that the appreciated plasticity the instructions seem to hold today is a central demarcation towards politics, as the Government is not supposed to manage the council too strictly. The wideness of the instructions, with appropriate number of details, allow the council to construct their own way of boundary work practice. A change in these instructions that give more detailed descriptions may affect the balance between the scientific and political agenda.

5.4.2 The yearly report

The boundary object 'The Swedish Climate Council Report' (the yearly report) has already been a central piece in this analysis as the council's work in general

circulate the report. So far, we know that it needs to be connected to academic literature with transparent methods to be scientifically grounded while not being too academic for the political sphere to digest and make use of. The report is written in collaboration between the council and the secretariat. Hence, the report has already shown to be interesting in relation to boundary objects as it ties together the micro boundary work. This sub-theme highlights that the council's report enable a place where different practices can interact.

Looking at the report, I address recommendations particularly as they are directed towards the Government directly and replied to by the Government specifically (see chapter 2.1). This makes them interesting in terms of interaction between the council and the political practices. In line with the system-level perspective that the council have adopted (shown in the sub-theme 'demarcations'), the interlocutors bring up that the council mostly makes broad recommendations (I2, I5, I6, I7, I8, I10). Avoiding details keep the council further away from the political sphere, and enables the politicians to decide on the 'how': 'how is this going to be implemented or dealt with?' (I2, I4, I6, I10).

"That you actually try to stay on the slightly more overall system level. Don't get too detailed because that's the role of politics, to actually take these recommendations and translate them into politics. " (I10)

Making the recommendations is described as a process where the council needs to find a balance between being concrete and general, so that the recommendations are usable for the politicians, while not giving suggestions that are political (I8). In relation to boundary objects, this demarcation can be seen as a way to secure the plasticity, to be adaptive of the political practice, while maintaining the scientific integrity. On the other hand, the risk of lacking applicability for politicians was brought up in our conversations. Particularly, as it is experienced that politicians practice sometimes ask for more concrete recommendations (I2). Which could mean that the plasticity made by the council puts the local need for politicians at risk, by not being useful for them. One interlocutor (9) highlighted that they wanted to develop the way of which the council conducted their recommendations, for example by setting up deadlines for the government. On the other hand, it was also

mentioned that being more concrete in these recommendations is beyond the given instructions (I2) and requires more monetary and time capacity to manage (I4, I7, I8, I9).

The media practice is an important world to consider when analysing the yearly report. When the boundary object is delivered in March each year the council organises a public seminar where they introduce the report and its recommendations and hand it over to the Minister for the Climate and the Environment. During this day the council interacts intensively with the media. It's clear in our conversations that the media context involves two important things: the messages by the council need to be straight forward and correct (I2, I4, I8) and the main messages can't be too many (I7, I9). *"That's how the media works... You can't reach out publicly with more than very, very few messages"* (I9). Thus, the media practice logics impact the council's way of communicating.

The council's yearly report is put on the public agenda through the media (I10). The attention is described by the interlocutors to increase every year. This is seen as an important public yearly reminder on the politically set climate goals (I2, I5, I8). This responsiveness creates the feeling that the council has an effect (I5). Further, the media and other organisations use the report to ask critical questions and advance on the council's conclusions and recommendations (I4, I6, I8). Thus, this attention puts extra pressure on the politicians (I8). When others use the report in different ways it can be viewed as an indirect effect of the council's work (I7, I8, I10). As the council demarcates from party politics, others can politicise and use them in different ways to affect politicians (I4, I10).

"I think I've seen a shift... I see it when journalists ask questions now, they sometimes refer to our reports and that the council 'say so and so', and the politicians need to respond to that. And it also means that I can feel that we are doing a certain good, that there is something for those who hold those in power to account to lean towards." (I8)

I interpret that the yearly report not only is magnified by the media but additionally works as a space for interaction between the council and politicians. Hence the political reaction on the report is partly interpreted through the media (I4, I6). The recent report (2024) was commented on in the media by the Prime Minister Ulf

Kristersson, where he stated that the evaluation is one out of several exciting opinions. This was brought up in our conversations:

“I experienced that the majority of the media seemed to understand us correctly. And picked up the right things and so on... Then I think it was a bit unfortunate, some things that both the Minister for Climate and Environment and the Prime Minister said. For example, the Prime Minister said ‘yes, but you can have different opinions on this’. It wasn't really our intention to just come, ‘We were like a group of elves who came up with our own opinions about this’. It was a serious, a serious review of their [climate action] plan. And it is a bit unfortunate if politics doesn't take, things with, so to speak, claims of truth and logic taken more seriously.”
(I4)

This is part of a disappointment of the governmental response in relation to the last report from 2024 (I4, I6). Nevertheless, it is also described that politicians in general take the council seriously (I4, I8, I10). However, the feedback from politicians that receive the recommendations is understood as limited (I5), due to demarcations from their direction (I7). As the politicians don't want to influence the council too much, they didn't really give any feedback on the councils' work (I7). Which makes me think that the little interaction that takes place through media is of importance. Thus, the media practice relation to the council are three folded; the council needs to adjust to their norms to reach out with their messages; their messages lives on through the media practice as they use the council's conclusions to create critical questions towards the government; and the media practice can be viewed as a base for communication between the council and politicians as other types of communication is rare. Lastly, interlocutors experience, through their interpretations based on media, that the reports have been used as a political tool (Swedish: ‘slagträ’) by the political opposition to de-constructively challenge the government (I1, I3 I4, I5, I8, I10). It was described as unfortunate if the council's messages disappear in a political game (I5).

I interpret that boundary objects context, i.e. culture, time and pace, matters for the boundary work. The societal context of which the council interacts in was brought up in our conversations, which was described as more polarised than some years ago (I1, I2, I6, I8). *"There have become two camps in the climate issue in some way"* (I1). The polarisation of views on climate change made it more

important to anchor scientifically and to provide a more qualitative conversation where different perspectives can interact (I8). Some specific areas were mentioned as more complex to address due to the political tensions that they hold, such as nuclear power (I1) and eating meat (I7). I interpret that the polarised context puts extra pressure on their work of constructing the yearly report. When it needs to fit in a society where the political topic of climate change can be described as a hot potato. Additionally, I interpret that it makes it more difficult for the council to contain the view of being ‘objective’ or simply ‘scientific’, when perceptions of climate change polarised and politicised.

In sum, the council relies on the media to share and reach out with their report, which can be seen as a form of collaboration. However, the council needs to create messages that work well in the world of media, where simple and short messages often succeed. Media additionally seems to work as a middleman between the council and the political sphere, thus shaping the interaction based on what fits media to communicate. From this perspective, setting sharp boundaries that limit direct communication between the council and politics seems unfavourable to the science-policy interaction. The broader social context where the report is received may challenge their communication further, as it might be more important to be (or seem) far away from the political practice to perceive impartial.

The four overarching themes shows the variety in perspectives of the relation between the council and politics. Table 2 provides a summary of the findings.

Table 2. Overview of findings

Overarching theme	Summary
Making boundaries	<i>Making boundaries</i> partly allowed a clear divide between science and policy, while additionally illuminating the balance between the scientific and political attention that the council practice in their boundary work.
Creating interaction	<i>Creating interaction</i> emphasised that the council bridges between the political and the scientific practices by ideas of helping and learning, it is also pointed out that the council has an important and unique connection to the political practice.
Conducting micro boundary work	<i>Conducting micro boundary work</i> illustrated how demarcations, coordination and boundary objects also occur internally and simultaneously within the boundary work practice.
Constructing boundary objects	<i>Constructing boundary objects</i> emphasised the instructions plasticity and illuminated that the yearly report can be understood as a meeting place for multiple practices.

6. Discussion

This thesis begun by describing how decades of scientific warnings have not developed into enough political action to decrease emissions of greenhouse gases. I continued by arguing that climate councils, such as the Swedish Climate Policy Council, have a particular place on the bridge between the worlds of science and politics. The findings offer a nuanced and complex analysis of a variety of perceptions of the relationship between science and policy. This chapter discuss the two research questions that focuses on understandings of boundary work practice and challenges and opportunities in the science-policy interaction for better climate policy.

6.1 Understandings and the making of boundary work

The findings in large confirm the assumptions that boundary organisations engage in demarcation and coordination simultaneously as suggested by for example Halfman (2003) and Wesselink & Hoppe (2020, 25). The balancing act illuminates the paradoxical work that the council conducts, how demarcations and coordination both are a practical contrast while being possible to perform simultaneously. In contrast to Sundqvist & Soneryd's (2019, 89) interpretation of Jasanoff (1990) that highlights how scientific experts particularly draw legitimacy from the scientific world and tone down their political connections – I suggest that the council's link to the political sphere creates a democratic legitimacy which interlocutors rhetorically emphasise, in addition to the scientific legitimacy. This deviation from previous literature can be caused by the lack of studies that are based on 'backstage' understandings of these practices. Primarily I interpret the democratic legitimacy as an outcome of the legislative connection to politics that the council exclusively hold. Additionally, I interpret that the political connection makes the council

advocators for the politically set climate goals, as council members see their work as yearly reminder of these goals; like the organisation studied by Huitema & Turnhout (2009). On the other hand, the council clearly demarcated itself from party-based politics, which in turn was associated with the idea of not being political. It can be seen as the council's definition of its connections (and non-connections) to politics.

The council conducts boundary work through processes of micro boundary work, which entail collaboration with the secretariat and internal interdisciplinary work. As the interlocutors highlight the importance of the interdisciplinary collaboration in relation with their work towards politics, I interpret that this diversity adds something particular to their boundary work, which would be difficult for an individual scientist to fulfil. In contrast to Huitema & Turnhout (2009) that emphasises boundary organisations drawbacks in relation to challenges they are expected to manage (Pielke 2007), this thesis unearths boundary organisations unique way of conducting micro boundary work. The yearly report would simply not be as wide and filled with different perspectives if researchers would have had the same origin. I believe that this additionally challenges the narrow view provided by Collins & Evans (2002, 250), that states that researchers only have something to add in their own specialisms.

This thesis partly continues the empirical work that Lövbrand (2007), Huitema & Turnhout (2009) and van Enst, Driessen & Runhaar (2017) conducted on science-policy interaction. Commonly we address the conscious and unconscious decisions that are made in the boundary organisations' work. The examples of earlier empirical studies have several differences, nevertheless, highlight ideas that relate to one another. These ideas are how social relations (Lövbrand 2007), relational way of thinking (van Enst, Driessen & Runhaar 2017) and discourses (Huitema & Turnhout 2009) create roles between science and policy. In the case of legally embedded climate councils, I suggest that a dual legitimacy from both the academic and democratic world shape their science-policy interaction. I consider this as both a blessing and a curse, as it gives the council certain power to describe the developments in climate politics which can be seen both as a privilege and heavy role to manage. Additionally, it is a reminder of the responsibility this power entails

(Turnhout, 2018). Finally, the democratic legitimacy can be expected to depend on public trust in democratic institutions which could be seen as an uncertainty.

6.2 Challenges and opportunities

In demarcations and coordination between the council and the Government I interpret a phenomenon that I name '*double freedom of interpretation*'. The council highlights and appreciates the broad nature in the politically given instructions, i.e. freedom to interpret the instructions that is considered to entail an appropriate number of details. The boundary object 'instructions' illuminates that they (only) lay a foundation that enables flexibility in the council's work, which ensures the possibility to keep the council anchored in the scientific practice, and an arm's length from the political arena. Similarly, it's emphasised that the council aims to make broad recommendations toward the government, which gives the politicians opportunity to interpret and apply the recommendations in the political context. Hence, from the council members' perspective, I interpret that not being detailed in the instructions and recommendations are part of the definition of proper interaction and demarcations in the boundary work. The question is then if this flexibility in the science-policy interaction overturn or assist better climate policy. This modus operandi might be counteracting the aim of the council's existence, if the council does not provide a 'how' to the political practice and the political practice does not ask specific questions that needs to be answered. Thus, the phenomena of 'double freedom of interpretation' can both be seen as a challenge, and the core of the relationship between the political and scientific practices. Aiming to achieve 'double freedom of interpretation' allows plasticity that might be necessary in creating a role in relation to other actors and maintaining agency in the different practices. It can also be seen as a result of trust between the practices, as they don't aim to strictly govern each other. Thereby, the idea of 'double freedom of interpretation' is a necessary condition for the science-policy interface, *and* an obstacle for more sustainable policy making. Consequently, erasing the 'double freedom of interpretation' is not the answer for better climate policies, as such an act would threat destabilising the council's scientific anchor.

I interpret a practical distance between the council and the Government that may challenge the council's work in enriching policy making for better climate politics. I name this distance '*issue of demarcation*'. In the example of the IPCC, researchers and politicians work closely together, making boundary objects and discussing summaries for policy makers intensively. In the light of their work, the distance between the council and the political sphere seems far. Despite that the Government replies on the council's recommendations in formal documents, feedback from the Government is partly understood as limited by the interlocutors. This seems to be due to demarcations from the political sphere, which I interpret to impact the science-policy interaction. Disproportionately sharp boundaries might challenge the council's ability to adjust to the "policy networks and political-cultural spheres.", which is a key factor in successful work between science and policy (Wesselink & Hoppe 2020, 13). The 'issue of demarcation' thus points out the other side of the issues of (over) politicisation of science and the (over) scientisation of politics. In short, the council might make less sense for the Government due to limited insights on politicians' understandings of their own work, which decrease their ability to enrich decision-making. Additionally, media seems to act as a middleman between the council and the government, which I infer challenges the communication further. The political (over) demarcation towards the council could in the worst-case scenario cause a 'reason' not to act on the council's work. The 'issue of demarcation' indicates a need for more informal communication in addition to the formal and public one. As I assume that genuine feedback is important in any work being made. On the other hand, this phenomenon might be mitigated by the secretariat's connections and understandings of the political world. Furthermore, this (over) demarcation may be part of creating the independence that the council now experiences.

This thesis illustrates that the science-policy interaction includes more practices than science and politics. It creates a space for several practices to collaborate to reach the Swedish climate goals, this is called '*boundary object effect*'. The boundary object 'the yearly report' highlights how the council's work is extended by collaboration with media and other practices. As addressed in the previous section, the council works as a yearly convenor, reminding on the politically

decided climate goals publicly. As media, politicians, and other organisations draw attention to the council's work, the report and corresponding launch event seems to create a place to meet for actors working in the science-policy interaction. This space can be understood as a part, a brick if you will, of the bridge that is constructed to connect the practice of science and politics. Hence, a societal space is made that enables not only the scientific and political practice but several practices to interact with similar goals. This 'boundary object effect' may therefore be a central part and opportunity in the council's interaction with the political practice to improve climate related policy and keep citizens up to date on the developments of climate related politics. Lastly, this phenomenon is challenged by the polarized context of the boundary objects, where addressing the subject of climate change can be perceived as provocative.

The discussed ideas: 'double freedom of interpretation'; 'issue of demarcation'; and 'boundary object effect' relate to and complement each other in different ways. The modus operandi 'double freedom of interpretation' highlights the (experienced) importance of demarcations in the relation between the council and the Government. The 'boundary object effect' can be seen as a compliment to these very demarcations, as other practices continue the council's demarcated work and take it closer to the political practice. While the 'issue of demarcation' indicates a need for softer demarcations in the relation between the Government and the council, as this could lead to better understandings between them. So, perceptions of boundary work shape interaction between science and politics, and by unearthing their nature, relations can evolve.

7. Conclusions

During the writing of this thesis, the idea of bridging a gap has evolved in meaning for me. I must admit that the linear idea is surprisingly hard to abandon. Even when reading about its shortcomings, I roughly started by viewing the scientists as a messenger that is sent over to the island of politics to make a difference. By reading, discussing and thinking, the bridge evolved from a narrow path to a broad boulevard, an idea origin from Latour (2004), described by Soneryd & Sundqvist (2023, 68). The islands of science and politics still exists, but their connections are filled of interactions and of people travelling between one island to another. It is the interaction on this bridge that this thesis came to attend, with the aim of illuminating practices that matters for climate related politics.

This thesis explores the Swedish Climate Policy Council understandings of boundary work and the belonging challenges and opportunities. I suggest that boundary work can be understood as a balancing act between giving science and politics simultaneously attention in the internal work in of the council. The council is a practice where scientifically trained people make sense of the political world, and then share their views of this world publicly. The council is a boundary organisation that holds a particular role in the Swedish society in relation to environmental governance as they embrace both scientific and democratic legitimacy. There are different challenges and opportunities of the current science-policy interaction, which could be improved by reflexivity and genuine interaction to better understand each other.

The strength of this thesis is the depth of which it explores the council's boundary work. This causes the natural limitation of only including one perspective, which is a weakness as this thesis studies interaction between different practices. STS scholars study the science-policy interaction most often from the

scientific perspective, I think that it would be fruitful to expand on understandings from the political and media practice too. How do politicians understand boundaries in relation to the scientific sphere? What is considered interesting to publish as a journalist in relation to science-policy interaction? Furthermore, this thesis does not analyse how power structures shape the science-policy interface. What has not been analysed is the council's organisational similarities to a board, where the chairperson has a particular influence on for example agenda setting. Lastly, I would like to call for further empirical research in relation to a variety of climate councils. As they differ on many levels, a better understanding of other ways of making boundaries and interaction could inspire and develop both practices and the research field of boundary organisations.

This thesis' implications are several. i) It can be seen as a call for caution for the current process of changing the instructions toward the council. As 'freedom of interpretation', gives conditions for agency and is seen as 'good' science-policy interaction. ii) It can be seen as a need for more direct interaction between the council and the government, particularly an increased political response on the council's work. iii) Hopefully I have provided a foundation for reflexivity for boundary work practices by illuminating ways of understanding the council's role and developed a language for further discussion. iv) For the research field, I have provided the first in depth analysis of a national climate council's understanding of the relationship between science and policy. This thesis has the possibility to work as an input for new scientific ideas to improve the science-policy interaction, thus 'bridging the science-policy gap'.

References

- Abraham-Dukuma, M.C., Dioha, M.O., Bogado, N. et al. (2020). Multidisciplinary Composition of Climate Change Commissions: Transnational Trends and Expert Perspectives. *Sustainability*, 12 (24), 10280.
<https://doi.org/10.3390/su122410280>
- Andersson, U. & Oscarsson, H. (2020) (Parti-) politiserat institutionsförtroende i Ulrika Andersson, Anders Carlander & Patrik Öhberg (ed.) *Regntunga skyar*. Göteborgs universitet: SOM-institutet.
- Averchenkova, A., Fankhauser, S. & Finnegan, J.J. (2021). The influence of climate change advisory bodies on political debates: evidence from the UK Committee on Climate Change. *Climate Policy*, 21 (9), 1218–1233.
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2), 77–101.
<https://doi.org/10.1191/1478088706qp063oa>
- Calvin, K., Dasgupta, D., Krinner, G., et al. (2023). IPCC, 2023: *Climate Change 2023: Synthesis Report*. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland. Intergovernmental Panel on Climate Change (IPCC).
<https://doi.org/10.59327/IPCC/AR6-9789291691647>
- Cohen, S.A., Higham, J., Gössling, S., Peeters, P. & Eijgelaar, E. (2016). Finding effective pathways to sustainable mobility: bridging the science–policy gap. *Journal of Sustainable Tourism*, 24 (3), 317–334.
<https://doi.org/10.1080/09669582.2015.1136637>
- Collins, H.M. & Evans, R. (2002). The Third Wave of Science Studies. *Social Studies of Science*, 32/2 (April 2002) 235-296.
- Dudley, H., Jordan, A. & Lorenzoni, I. (2021). *Independent expert advisory bodies facilitate ambitious climate policy responses*. Critical Issues in Climate Change Science, ScienceBrief <https://doi.org/10.5281/ZENODO.4633677>
- Evans, N. & Duwe, M. (2021). *Climate governance systems in Europe: the role of national advisory bodies*. Ecologic Institute, Berlin; IDDRI, Paris.
- Gieryn, T.F. (1983). Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists. *American Sociological Review*, 48 (6), 781. <https://doi.org/10.2307/2095325>
- Gluckman, P.D., Bardsley, A. & Kaiser, M. (2021). Brokerage at the science–policy interface: from conceptual framework to practical guidance. *Humanities and*

- Social Sciences Communications*, 8 (1), 84. <https://doi.org/10.1057/s41599-021-00756-3>
- Graminius, C. (2023). *Research communication in the climate crisis: Open letters and the mobilization of information*. Diss. Lund University.
- Guston, D.H. (2001). Boundary Organizations in Environmental Policy and Science: An Introduction. *Science, Technology, & Human Values*, 26 (4), 399–408
- Halfman, W. (2003). *Boundaries of regulatory science*. Diss. University of Amsterdam.
- Hoppe, R. (2009). Scientific advice and public policy: expert advisers' and policymakers' discourses on boundary work. *Poiesis & Praxis*, 6 (3–4), 235–263. <https://doi.org/10.1007/s10202-008-0053-3>
- Hoppe, R. & Wesselink, A. (2014). Comparing the role of boundary organizations in the governance of climate change in three EU member states. *Environmental Science & Policy*, 44, 73–85. <https://doi.org/10.1016/j.envsci.2014.07.002>
- Hoppe, R., Wesselink, A. & Cairns, R. (2013). Lost in the problem: the role of boundary organisations in the governance of climate change. *WIREs Climate Change*, 4 (4), 283–300. <https://doi.org/10.1002/wcc.225>
- Huitema, D. & Turnhout, E. (2009). Working at the science–policy interface: a discursive analysis of boundary work at the Netherlands Environmental Assessment Agency. *Environmental Politics*, 18 (4), 576–594. <https://doi.org/10.1080/09644010903007427>
- Jasanoff, S. (2004). The idiom of co-production. In: Jasanoff, S. (ed.) *States of knowledge: the co-production of science and social order*. Routledge. 1-12
- Joosse, S., Powell, S., Bergeå, H. et al. (2020). Critical, Engaged and Change-oriented Scholarship in Environmental Communication. Six Methodological Dilemmas to Think With. *Environmental Communication*, 14 (6), 758–771. <https://doi.org/10.1080/17524032.2020.1725588>
- Jönsson, A.M. (2020). Polariserat forskningsförtroende – utbildningsnivå och partisympatier vattendelare. In: Ulrika Andersson, Anders Carlander & Patrik Öhberg (ed.) *Regntunga skyar*. Göteborgs universitet: SOM-institutet.
- Klimatpolitiska rådet. (2023). *Årsrapport 2023*. (2023-00013/K). Klimatpolitiska rådet. <https://www.klimatpolitiskaradet.se/2023-klimatpolitiska-radets-rapport/>
- Klimatpolitiska rådet. (2024). *Årsrapport 2024*. (2024-00005/K). Klimatpolitiska rådet. <https://www.klimatpolitiskaradet.se/rapport-2024/>
- Klimatpolitiska rådet. (n.d.) Our Mission. <https://www.klimatpolitiskaradet.se/en/our-mission/> [2024-08-15]
- Klimat- och näringslivsdepartementet. (2023) *Regeringens klimathandlingsplan – hela vägen till nettonoll*. (Regeringens skrivelse 2023/24:59). Regeringskansliet.
- Kuhn, T.S. (1962). *The structure of scientific revolutions*. 3rd edition. University of Chicago Press.
- Latour, B. (1993). *We have never been modern*. 3rd edition. Harvard University Press.
- Lidskog, R. (2014). Representing and regulating nature: boundary organisations, portable representations, and the science–policy interface. *Environmental Politics*, 23 (4), 670–687. <https://doi.org/10.1080/09644016.2013.898820>

- Lidskog, R. & Sundqvist, G. (2018). Environmental Expertise. I: Boström, M. & Davidson, D.J. (ed.) *Environment and Society*. Springer International Publishing. 167–186. https://doi.org/10.1007/978-3-319-76415-3_8
- Lövbrand, E. (2007). Pure science or policy involvement? Ambiguous boundary-work for Swedish carbon cycle science. *Environmental Science & Policy*, 10 (1), 39–47. <https://doi.org/10.1016/j.envsci.2006.10.003>
- Magnusson, E. & Marecek, J. (2015). *Doing Interview-based Qualitative Research: A Learner's Guide*. 1st edition. Cambridge University Press. <https://doi.org/10.1017/CBO9781107449893>
- McNie, E.C. (2007). Reconciling the supply of scientific information with user demands: an analysis of the problem and review of the literature. *Environmental Science & Policy*, 10 (1), 17–38. <https://doi.org/10.1016/j.envsci.2006.10.004>
- Michaels, S. (2009). Matching knowledge brokering strategies to environmental policy problems and settings. *Environmental Science & Policy*, 12 (7), 994–1011. <https://doi.org/10.1016/j.envsci.2009.05.002>
- Miljand, M. & Bäckstrand, K. (2021). *Climate Policy Councils: Success Factors and Lessons Learned*. Global Challenges Foundation.
- Miljö- och energidepartementet. (2016). *Ett klimatpolitiskt ramverk för Sverige*. (Regeringens proposition 2016/17:146). Regeringskansliet.
- Naturvårdsverket. (2024). *Naturvårdsverkets underlag till regeringens klimatredovisning 2024*. (Skrivelse NV-03980-23). Naturvårdsverket.
- Pielke, Jr, R.A. (2007). *The Honest Broker: Making Sense of Science in Policy and Politics*. First edition. Cambridge University Press. <https://doi.org/10.1017/CBO9780511818110>
- Robson, C. & McCartan, K. (2016). *Real world research*. 4th edition. Wiley.
- SFS 2017:720. *Klimatlag*. Klimat- och näringslivsdepartementet.
- SFS 2017:1268. *Förordning med instruktioner för Klimatpolitiska rådet*. Klimat- och näringslivsdepartementet.
- Sokolovska, N., Fecher, B. & Wagner, G.G. (2019). Communication on the Science-Policy Interface: An Overview of Conceptual Models. *Publications*, 7, 64. <https://doi.org/10.3390/publications7040064>
- Soneryd, L. & Sundqvist, G. (2023) *Science and Democracy*. 1st edition. Bristol University Press. ISBN: 978-1529222142.
- Sovacool, B.K., Hess, D.J., Amir, S., et al. (2020). Sociotechnical agendas: Reviewing future directions for energy and climate research. *Energy Research & Social Science*, 70, 101617. <https://doi.org/10.1016/j.erss.2020.101617>
- Spruijt, P., Knol, A.B., Vasileiadou, E., et al.(2014). Roles of scientists as policy advisers on complex issues: A literature review. *Environmental Science & Policy*, 40, 16–25. <https://doi.org/10.1016/j.envsci.2014.03.002>
- Star, S.L. & Griesemer, J.R. (1989). Institutional Ecology, "Translations" and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science*, 19 (3), 387–420.
- Sundqvist, G. & Soneryd, L. (2019) *Vetenskap och Demokrati*. 1st edition. Studentlitteratur. ISBN: 9789144116938.

- Weaver, S. Lötjönen, S. Ollikainen, M. (2019). *Overview of National Climate Change Advisory Councils*. (Report 3/2019) The Finnish Climate Change Panel. <https://ilmastopaneeli.fi/en/hae-julkaisuja/overview-of-national-climate-change-advisory-councils/>
- Thornquist, E. (2021). *Vetenskapsfilosofi och vetenskapsteori: För samhällsvetenskaplig och medicinsk fakultet*. Gleerups. ISBN: 9789151102979.
- Turnhout, E. (2018). The Politics of Environmental Knowledge. *Conservation and Society*, 16 (3), 363. https://doi.org/10.4103/cs.cs_17_35
- Turnhout, E., Dewulf, A. & Hulme, M. (2016). What does policy-relevant global environmental knowledge do? The cases of climate and biodiversity. *Current Opinion in Environmental Sustainability*, 18, 65–72. <https://doi.org/10.1016/j.cosust.2015.09.004>
- Van Den Hove, S. (2007). A rationale for science–policy interfaces. *Futures*, 39 (7), 807–826. <https://doi.org/10.1016/j.futures.2006.12.004>
- Van Enst, W., Driessen, P. & Runhaar, H. (2017). Working at the Boundary: An Empirical Study into the Goals and Strategies of Knowledge Brokers in the Field of Environmental Governance in the Netherlands. *Sustainability*, 9 (11), 1962. <https://doi.org/10.3390/su9111962>
- Weiland, S., Weiss, V. & Turnpenny, J. (2013). Science in Policy Making. *Nature and Culture*, 8 (1), 1–7. <https://doi.org/10.3167/nc.2013.080101>
- Weingart, P. (1999). Scientific expertise and political accountability: paradoxes of science in politics. *Science and Public Policy*, 26 (3), 151–161. <https://doi.org/10.3152/147154399781782437>
- Wesselink, A., Buchanan, K.S., Georgiadou, Y. & Turnhout, E. (2013). Technical knowledge, discursive spaces and politics at the science–policy interface. *Environmental Science & Policy*, 30, 1–9. <https://doi.org/10.1016/j.envsci.2012.12.008>
- Wesselink, A. & Hoppe, R. (2020). *Boundary Organizations: Intermediaries in Science–Policy Interactions*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190228637.013.1412>
- Wibeck, V. & Linnér, B.-O. (2021). Sense-making Analysis: A Framework for Multi-Strategy and Cross-Country Research. *International Journal of Qualitative Methods*, 20, 160940692199890. <https://doi.org/10.1177/1609406921998907>
- Zwar, C., Edenhofer, J., Ruzelyte, V., Edmondson, D. & Flachsland, C. (2023). Mapping variation in institutions for climate policymaking: Climate institutions in Germany, the United Kingdom, Sweden, and Australia. *Potsdam Institute for Climate Impact Research*. <https://doi.org/10.48485/PIK.2023.017>

Popular science summary

Climate change is advancing in severity globally and the scientific community's warning toward political representatives are becoming louder and sharper. A lack of political action on scientific warnings gives rise to the idea of a 'science-policy gap', that assumes that science needs to become more political usable, and politics need to act faster and better to mitigate climate change. To accelerate implementation of national climate goals, 40 countries have created climate councils that consist of different types of experts. These organisations are created to give scientific (or expert based) support that is relevant for the political world. However, working between science and policy has proven to be a practice full of dilemmas and challenges. The organisations are expected to bridge worlds built on different logics that are not appropriate to merge, as politics is based on the ambition to reach more power and science based on academic methods and the aspiration for truth. This thesis explores how scientific council members in the Swedish Climate Policy Council (the council) experiences the relationship between science and politics.

This thesis suggests, based on experiences of practitioners, that steering documents from the political practice to the scientific, and vice versa, need to hold a certain openness by not being too detailed. This openness creates conditions for the council and politics to decide how to act. The study also brings forth that sharp borders from the political practice seem to create an unnecessary distance toward the scientific sphere. This may challenge the possibility for the council to support in a way that make sense for the Government, which in turn limits the council's function of being a 'coach'. Finally, I highlight that the council's work can be seen as a meeting place for different practices to commonly address the science-policy gap. These conclusions might take us closer in understanding features in the relationship between science and politics, which affect our societies as science takes

a larger and larger part in our democracies. The implications of this thesis are several. i) It can be seen as a call for caution for a current process of changing the instructions toward the council. As a more detailed instruction could be limiting for the council's work. ii) It can be seen as a need for more direct interaction between the council and the government, particularly an increased political response on the council work. iii) Hopefully I have provided a foundation for reflexivity for the council by describing and analysing the council's work in this thesis, at least I have provided a language for further discussion. iv) For the research field, I have provided the first in depth analysis of a national climate council's understanding of the relationship between science and policy. This thesis has the possibility to work as an input for new scientific ideas to improve science-policy interaction, thus 'bridging the science-policy gap'.

I will now explain how this thesis was conducted. Firstly, this thesis explores how the Swedish Climate Policy Council works between the borders of science and politics and investigates challenges and opportunities in this interaction to increase better climate policy. To unearth the scientific experts' understandings of their work I interviewed ten current and former council members. The interviews were recorded and transferred to text. Then an analysis process begun by listening and reading the interviews while taking notes. This was followed by coding the interview texts, which is a process of sorting pieces of citations into different categories. This is named thematic analysis. The themes were based on theories about the relationship between science and politics, called boundary work. I used mainly three ideas when I analysed and coded the interview text, which were; borders, where different lines appeared to be between the council and politics; interaction, how the council and politics are connected and collaborates; and understandings about central texts documents that are shared by the council and politics. The conclusions presented in this summary is based on this process, which focuses on understandings and experiences of the council members and is analysed through an interpretive, qualitative, method.

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Appendix 1 – Interview guide

Interview guide Swedish (original)

Tack så mycket för att du tackade ja till att delta i mitt studentarbete! Den planerade tiden för intervjun är cirka 45 minuter, men kan förkortas/förlängas enligt ditt önskemål. Intervjun är semistrukturerad med fyra intresseområden med relaterade frågor. Designen ger utrymme för dig att lyfta dina intressen. Intervjun kommer att spelas in för att sedan transkriberas och innehållet används som underlag till studentarbetet med arbetstiteln ”Researchers in institutionalised Science and Climate Policy interface”. Jag ser fram emot att prata med dig och lära mig mer om dina uppfattningar om att delta i Klimatpolitiska rådets arbete i egenskap som forskare!

1. Frågor om valet att bli rådsledamot

- Berätta om när du fick din roll på Klimatpolitiska rådet – hur upplevde du det?
- Kan du berätta om när du beslutade att tacka ja till din plats i rådet?
 - o Varför tog du det beslutet? Fanns det något specifikt syfte?
 - o Fanns det något som gjorde att du först behövde fundera innan du tog ditt beslut, eller något som gjorde ditt val enkelt?

2. Frågor om arbetet i Klimatpolitiska rådet

- Berätta om din upplevelse av att vara rådsledamot i Klimatpolitiska rådet
 - o Vad uppskattar du med ditt arbete i Klimatpolitiska rådet?
 - o Hur ser utmaningar ut i ditt arbete med Klimatpolitiska rådet?
 - o Beskriv hur dessa utmaningar tagit sig i uttryck?
- Hur upplever du Klimatpolitiska rådets instruktioner?
 - o Vad tänker du om politikens diskussion om att ändra dessa instruktioner?

- Hur ser du på rådets uppgift som ofta beskrivs att vara ett oberoende utvärderande organ?
 - Vad betyder det för dig att vara oberoende?
- Hur upplever du som forskare att jobba med att ge rekommendationer och bedömningar till regeringen om klimatpolitiken?
 - Hur utförs det arbetet bäst tycker du?
 - Av vilken karaktär anser du att rekommendationerna till politiken skall vara?
- Vad tycker du är viktigt för ett fungerande klimatpolitiskt råd?

3. Frågor om forskarens roll i klimatpolitiken

- Hur ser du på vetenskapens roll i klimatpolitiken generellt?
- Hur ser du på forskarens ideala roll i klimatpolitiken?
 - Speglar dina erfarenheter det idealet?
- Påverkar deltagandet i Klimatpolitiska rådet hur du ser på dig i din forskarroll annars?
- Vad verkar dina kollegor eller närstående tycka om ditt deltagande?
 - Berätta gärna hur detta tyckande visar sig

4. Frågor om relationen mellan Klimatpolitiska rådet och klimatpolitiken

- Hur upplever du att Klimatpolitiska rådets bedömningar och rekommendationer har tagits emot vid eller efter lansering?
- Hur ser du på effekten av Klimatpolitiska rådets arbete på klimatpolitiken?
- Hur upplever du politikens syn på rådet?
 - Har synen på rådet förändras?
 - Beskriv i så fall hur?

Avslutningsvis:

- Finns det något som du skulle vilja tillägga som vi inte kommit in på idag?
- Har du några frågor till mig?

Tack så mycket för ditt deltagande!

Interview guide English (translated version)

Thank you so much for agreeing to participate in my student work! The planned time for the interview is approximately 45 minutes, but can be shortened/extended according to your wishes. The interview is semi-structured with four areas of interest with related questions. The design gives you room to highlight your interests. The interview will be recorded and then transcribed and the content will be used as a basis for the student work with the working title "Researchers in institutionalised Science and Climate Policy interface". I look forward to speaking with you and learning more about your perceptions on participating in the Swedish Climate Policy Council's (the council) work as a researcher!

1. Questions about the choice to become a council member

- Tell me about when you got your position in the council - how did you experience that?
- Can you tell me about when you decided to accept your position in the council?
 - o Why did you make that decision? Was there a specific purpose?
 - o Was it something that made you think twice before making your decision, or something that made your choice easy?

2. Questions about the work in the council

- Tell me about your experience of being a council member in the council
 - o What do you appreciate about your work in the council?
 - o How does challenges look like in your work with the council?
 - o Describe how these challenges manifested themselves?
- How do you experience the council's instructions?
 - o What do you think of the political discussion of changing these instructions?
- How do you view the council's task, which is often described as an independent assessment body?
 - o What does being independent mean for you?
- As a researcher, how do you feel about working with giving recommendations and assessments to the Government about climate policy?
 - o How do you think that the work is best carried out?
 - o Of what nature do you think that the recommendations to politics should be?
- What do you think is important for a functioning council?

3. Questions about the researcher's role in climate politics

- How do you see the role of science in climate politics in general?
- How do you view the researcher's ideal role in climate politics?
 - o Do your experiences reflect that ideal?
- Does participation in the council affect how you see yourself in your research role otherwise?
- What do your colleagues or relatives seem to think of your participation?
 - o Please describe how this opinion manifest itself

4. Questions about the relationship between the council and climate politics

- How do you experience the reception of the council's assessments and recommendations at or after the launch event?
- How do you experience the effect of the council's work on climate politics?
- How do you perceive the politicians' view of the council?
 - o Has the view of the council changed?
 - o If so, describe how?

In conclusion:

- Is there anything you would like to add that we haven't covered today?
- Do you have any questions for me?

Thank you so much for your participation!

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