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SCIENCE DIPLOMACY IN ARCTIC OCEAN GOVERNANCE

A process-tracing analysis of how – and to what degree – Science Diplomacy through epistemic communities can influence policy choices in the Arctic

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Resumé

Klimaforandringerne i Arktis skaber nye infrastrukturelle vilkår og muligheden for at etablere en grænse for den ydre kontinentalsokkel åbnes. Styringen af det Centralarktiske Ocean er særligt svær, da man ikke har overblik over konsekvenserne af klimaforandringerne, hvilket sætter beslutningstagere under pres, når politiske valg træffes. Deres beslutninger skal baseres på forskningsbaseret viden, men for at sikre stabiliteten i regionen, skal staterne i regionen også nå til enighed.

Specialet tager sit udgangspunkt i begrebet videnskabsdiplomati, men snarere end at undersøge, *hvorvidt* det kan fungere i Arktis, så opstiller det et forslag til, *hvordan* det kan fungere. Haas' (1992) teori om epistemiske vidensfællesskaber kobles med Dunlops (2009) argument om politisk læring i en teori-testende process-tracing analyse. Dette speciale vil derfor undersøge: *Hvordan og i hvor høj grad kan epistemiske vidensfællesskaber opnå indflydelse på politiske beslutninger i Arktis?*

Derfor udvikles en kausalmekanisme baseret på Haas og Adlers' (1992) politiske evolutionsproces, hvilken testes på to cases af henholdsvis lav og høj saliens. Det antages, at lav saliens ikke giver incitament til at tage kontrol over den politiske læringsproces, hvorfor forventningen er, at det epistemiske vidensfællesskab vil opnå høj grad af indflydelse. Dette testes på forløbet, der ledte til Aftalen om Søredning under Arktisk Råd. Derimod forventes det, at i cases med høj saliens, vil dette være nok til at skabe et incitament for beslutningstagere for at tage kontrol med læringsprocessen, hvorfor det epistemiske vidensfællesskab vil have en lav grad af indflydelse på de politiske beslutninger. Dette testes på processen, der ledte til indsendelsen af submissionerne for det Centralarktiske Ocean fra Canada, Danmark og Rusland til Kontinentalsokkelkommissionen ved FN.

Resultaterne af analysen viser, at det var muligt for det epistemiske vidensfællesskab at fremsætte både mål og midler til at underbygge det politiske valg i processen mod Aftalen om Søredning. For submissionerne til kontinentalsokkelkommissionen viser det sig imidlertid, at det kun var i Canada og Rusland, at beslutningstagerne tog kontrol, men gjorde sig ikke gældende i Danmark. Samtidig peger analysen på, at det er indenrigspolitiske anliggender, i dette tilfælde den "Arktiske identitet" og Nordpolen som symbol herpå, der snarere end saliens har en betydning for, om de epistemiske vidensfællesskaber kan opnå indflydelse på politiske beslutninger. Konklusionen på specialet er, at den opstillede mekanisme kan belyse, hvordan videnskabsdiplomati i form af epistemiske vidensfællesskaber kan opnå indflydelse og at inddragelsen af politisk læring giver mulighed for at vurdere graden af indflydelse på baggrund af, hvorvidt beslutningstagerne tager kontrol over processen.

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1. Introduction

Climate changes are changing our world. Not only in the literary sense by causing extreme weather, rising sea levels or endless drought, but also figuratively because it pressures our understanding of how nations can interact in the international system. However, while climate changes are perceived to be one of the biggest threats to the human civilization, new opportunities also arise.

1.1 Motivation and relevance

The Arctic is the region, where climate changes has had the biggest impact. Since measurements of the ice cap began in the 1970's, the yearly average extent of the ice cap has been decreasing in an alarming pace after the early 2000's (Turner and Marshall, 2011: 393). In 2007, September levels were 39% lower than the 1979-2000 average and the very tangible result was that the North West passage opened up completely for the first time (Newsroom, 2007). As a result, ships have been able to sail where they have never had the possibility to go before. By going north, shipping companies could potentially save up to 40% of the costs, while minimizing the risk for piracy. In addition, as the ice opened so did the opportunity to exploit whatever resources might hide underneath. As a result, decision makers[1] had to find a way to deal with the possible consequences from this development, but as the maritime Arctic was relatively undiscovered, the climate changes not only posed a political challenge, but also a scientific one.

At an event in Brussels arranged by the Danish Agency for Science, Technology and Innovation discussing future themes for European funding schemes for Arctic research amongst researchers, civil servants and NGO's, the concept of Science Diplomacy and its importance kept occurring[2]. It also started appearing in the Danish debate on Arctic research at events like the MatchPoints-conference at Aarhus University or in the 2015 prize paper from the Danish Foreign Policy Society. However, while the talks in Brussels all seemed to deem this concept important, there did not seem to be an agreement to what Science Diplomacy actually is or how it works.

1.1.1 Science Diplomacy

The implications of climate changes in the Arctic are an example of how globalization has caused many issues to become more complex, and to understand them, decision makers need to take into account different dimensions of these issues: including the scientific one. Because science is neither inherently political nor ideological, it can promote ideas in a universal language as it promotes merit, openness, civic values and citizen empowerment much like diplomacy, which is an international relations approach that promotes non-

[1] This thesis apply a narrow definition: Ministers or Governments as entities.

[2] I was an intern in Brussels for the fall of 2015 and covered several events concerning the Arctic. This attendance gave a unique insight into what issues are on the academic and political agenda in the Arctic.

violence through dialogue, negotiation and compromise (V.C. Turekian et al., 2015: 4). When coupling the knowledge acquisition aspect of science with diplomacy, Science Diplomacy can be defined as: "*the process by which states represent themselves and their interests in the international arena when it comes to areas of knowledge – their acquisition, utilization and communication – acquired by the scientific model*" (V.C. Turekian et al., 2015: 4) with the aim of promoting foreign policy goals or interstate interests.

The coupling of science and diplomacy is not necessarily without implications. While science strive to promote knowledge and is searching for an objective understanding of the world, diplomacy is about promoting state interests; two things that do not always go hand in hand. However, Science Diplomacy can work in various ways:

- By facilitating international science cooperation (*Diplomacy for Science*),
- By informing foreign policy objectives with scientific advice (*Science in Diplomacy),*
- By using science cooperation to improve international relations between countries *(Science for Diplomacy)*

(Royal Society, 2010: VI).

Diplomacy for Science is when the diplomatic core works to facilitate international science cooperation or large-scale projects, which no country can develop on their own. Here, diplomatic relations can have an effect in all parts of the project: from facilitating ideas and collaboration to coordination of the policy part of large international projects (V.C. Turekian et al, 2015: 12). *Science in Diplomacy* means that scientists can support policy development by informing objectives by equipping international decision makers with the knowledge they need in order to cope with the increasingly complex issues. To address the issue, decision makers need to understand the science driving the challenge, develop institutions to disseminate information and knowledge about it and engage with the experts on the issue (Ibid: 15f). Through *Science for Diplomacy*, it is possible to foster the development of trust and agreement between countries, even when the official relations are lacking or are very constrained. It works through different types of activities like science cooperation agreements, creations of new institutions, educational scholarships, "track II"-diplomacy (outside the official negotiation process) or science festivals and exhibitions (Ibid: 18ff). These activities allow scientists to exchange ideas, not only with each other, but also with decision makers, civil society organizations and interest groups etc.

1.2 Thesis statement

Decision makers in the Arctic states have to deal with rising uncertainties stemming primarily from climate changes and when considering what policy choices to pursue in the Arctic Ocean, the question remains who to turn to for answers. Decision makers have many options, but given the rapidly changing realities of the

climate, the scientific community has been the much-preferred place to gain knowledge. When creating policies, the decision makers need to know the conditions and possible outcomes of different policy measures. The theoretical perspective used to set a frame for how to analyze the concept of Science Diplomacy in this thesis is Peter Haas' (1992) definition of epistemic communities and how they influence the political decision makers.

Instead of suggesting that Science Diplomacy *can* work (Gleerup 2016, Goodsite et al. 2015, Sutcu, 2012), this thesis provides a way of analyzing *how* it might work by applying the theory of epistemic communities as a way to examine Science Diplomacy. Peter Haas' definition of epistemic community actions is in accordance with the actions of all three types of Science Diplomacy, why it seems reasonable to infer that epistemic community actions are in fact actions of Science Diplomacy. This does not exclude that Science Diplomacy can work in other ways than through epistemic communities.

This puzzle forms the background for this thesis and by applying the theory on two cases of Arctic Ocean governance this thesis seeks to examine: *How epistemic communities can influence policy decisions in the Arctic and to what extent that is possible?*

Furthermore, this thesis seeks to examine whether the degree of saliency on an issue can have an impact on to which extent, the epistemic community can achieve influence. Currently, the Arctic is an arena for issues of low as well as high saliency, where some issues can be interpreted as coordination-games; while others are a matter of a zero-sum game with only one winner.

My contribution to the discussion on Science Diplomacy and epistemic community theory is through developing and testing a mechanism based on Adler and Haas' concept of policy evolution and by introducing Dunlop's account of political learning as a part of the mechanism. I am testing, under which conditions of saliency that epistemic communities can gain influence on decision makers under, but the results in the second case show that high saliency is not necessarily enough incentive for decision makers to take control. This leads to a discussion of saliency and political learning as scope condition, but the analysis of the high salience case suggests that domestic structures rather than saliency can produce incentives to take control. The high salience analysis showed that while the countries rely on the scientific community for the content of the submissions, the policy goals are in some cases affected by ideas of national identity rather than scientific knowledge. This is an important insight to the discussions on Science Diplomacy as it can be a way to identify, when it can and cannot work.

1.3 Case selections

Arctic as a case is especially fruitful for investigating Science Diplomacy and the influence of science on political decision makers, because the Arctic is an area of research that is still developing. There are many aspects of Arctic politics, where the relationship between science and politics could be interesting to examine, but the Arctic Ocean provides a unique setting with some of the strong powers of the international system; Russia, North America and the Nordic countries in Europe working to cooperate even if their relationship on other issues are strained.

The first case to be examined is the development of the Search and Rescue agreement from 2011. Officially named *the Agreement on Cooperation in Aeronautical and Maritime Search and Rescue in the Arctic*, the SAR agreement was the first legally binding agreement to be negotiated with the Arctic Council as a facilitator. However, since the Arctic Council is not an institution with decision-making powers, the agreement itself is between the Arctic member states: Canada, Finland, Iceland, Norway, Sweden, Russia, The Kingdom of Denmark and The United States of America. The expectation was that when an issue is characterized by low saliency, the epistemic community can gain a high degree of influence, as the decision makers do not have incentive to take control of the process.

The second case to be examined is the *Submission to the Commission on the Limits of the Continental Shelf*, which is a case of maritime delimitation in the Central Arctic Ocean. While territorial distribution is always assumed to be a zero-sum game, the distribution of territory in the Central Arctic Ocean was suddenly elevated to be a discussion on, whether it was possible to maintain stability in the region, when a Russian scientist planted the Russian flag on the seabed at the North Pole in 2007. The expectation is that when an issue is characterized by high saliency, the epistemic community can only gain a low degree of influence, as the high saliency of the issue provides the decision makers with incentive to take control of the process. The submissions in this case are regarding the Central Arctic Ocean. As Norway's submission has already been considered[3] and the US has not yet ratified the convention, it is a process leading to the Canadian preliminary information from 2013 (expectations on a later submission), the Danish submission from 2014 and the Russian submission from 2015, which are the objects of analysis.

Maritime delimitation is governed by the *United Nations Convention on the Law of the Sea III (UNCLOS),* which was adopted by the United Nations in 1982 and came into force in 1994. The provisions for establishing the limits of the outer continental shelves were added, because disagreement on definitions could lead to overextension. Furthermore, while states with wide shelves had basis for claims, it could create an imbalance

[3] There is a 10-year deadline on submissions (UNCLOS Art. 4), but as long as preliminary information is in, the deadline is not really enforced. However, Norway ratified the convention in 1996 with a deadline in 2006, which they met.

for the geologically disadvantaged. On that ground, it was agreed that states could either claim a 200 nautical mile exclusive, economic zone (EEZ) from the baselines of which the territorial sea is measured or claim the continental shelf. The continental shelf comprises the seabed and its subsoil throughout the natural prolongation of its land territory to the outer edge of the continental margin. To avoid overextension, two measures were introduced: either through a 350 nautical mile boundary from the baseline or 100 nautical miles from the 2,500 meter depth, depending on geological structures (Division for Ocean Affairs and The Law of the Sea, 1998). If the structure is of ocean ridge character, it can never account for a natural extension of the continental shelf, while submarine ridges can, but only to the 350 nautical mile limit according to Art. 76 §6 in the UNCLOS. This paragraph does not apply to submarine elevations, why a claim supported by these structures can extend beyond the 350 nautical mile limit (UNCLOS; Art. 76, §6). These classifications becomes important to the analysis, why the connection to the submissions is explored further in the analysis.

2. Methodology

There has been conducted different case studies on Science Diplomacy e.g. the collection in the volume "Science Diplomacy – New Day or False Down" (Davis and Patman, 2015), but due to the lack of a clear structure of analysis in these studies, it can be hard to make inferences to policy coordination and international relations in a broader perspective. Therefore, it can be hard to predict whether Science Diplomacy can work through epistemic communities and how it works. To accommodate this challenge, I engage in conducting a process-tracing analysis, which gives the researcher the opportunity to open up the causal link by mapping the parts that lead to a given outcome. Process-tracing is *"the systematic examination of diagnostic evidence selected and analyzed in light of research questions and hypotheses posed by the investigator"* (Collier, 2011: 823). It can be used in various ways by identifying new political and social phenomena, evaluating or discovering new hypothesis, gain insight into causal mechanism or by providing alternative means of addressing possible problems to regression analysis (Ibid: 824).

Process-tracing is based on a mechanistic, deterministic understanding of causal mechanisms, why it differs from the correlative, probabilistic assumptions, which underlies the quantitative analysis. When applying the mechanistic approach to the analysis, the researcher becomes interested in the theoretical process from which X produces Y. It is based on the idea that mechanisms can be viewed as systems in which entities and activities interrelate. Entities are factors, which engage in activities, and activities are producers of change or they transit the causal forces through the causal mechanism. Therefore, mechanisms are comprised of a series of parts with entities that engage in activities (Machamer, Darden and Craver, 2000; Machamer, 2004, in Beach and Pedersen, 2016: 113). These parts are not considered to be variables, as they have no independent existence in relation to producing Y, but instead they are parts of an overall system (Beach and Pedersen, 2016: 398). Mechanisms are deterministic, as they do not provide the possibility for variance: if the same relevant causes and scope conditions are triggered, the mechanism in question will produce the same outcome in each case (Beach and Pedersen, 2013: 10). The cause of a mechanism is what triggers the mechanism and the scope conditions are enablers of the mechanism, but cannot be active parts (Beach and Pedersen, 2016: 125).

In process-tracing, it is important to have the aim of the analysis in mind, as different research questions call for different ways of conducting process-tracing. As my starting point is in already existing theory, it is evident to rely on a deductive rather than inductive approach by testing each stage in the process, why this thesis will conduct a theory-testing analysis with a revising perspective. When using the theory-testing variant, one is able to use logical reasoning to formulate a causal mechanism from already existing theory and test each

part of the mechanism with empirical evidence. However, due to the high salience, the mechanism is expected to break down in the second case, why the theory-revising variant proves useful to find out whether the breakdown is due to omitted causal or contextual conditions (Beach and Pedersen, 2013: 14-18, Beach and Pedersen, 2016: 398, 425). While theory-revising in its original form is conducted by a comparison of a successful case and one of failure to find the breakdown, this thesis proposes political learning as the factor determining whether the epistemic community can be successful in influencing policy choices.

In theory-testing process-tracing, the researcher follows three steps. The first step is to conceptualize the causal mechanism linking X and Y and the conditions under which it will work (Beach and Pedersen, 2016: 421). In this thesis it is by theoretically linking how epistemic communities influence decision makers in different conditions of saliency. The mechanism is created from different perspectives from both the epistemic community literature and other disciplines by combining the views from Adler and Haas (1992) with Dunlop (2009) in a causal mechanism. By using the original framework for epistemic communities, this thesis writes itself into a long line of research, but by creating a mechanism that combines epistemic community theory with Dunlop's argument of political learning, it adds a new layer to the epistemic community literature. This also gives a revisionist element to the theory-testing method as it provides an opportunity to explore how political learning works under different circumstances.

The second step is to create specific expectations of entities and activities to each part of the mechanism by operationalizing the theoretical expectations into case-specific propositions of what evidence should be found in each part if the mechanism is present (Beach and Pedersen, 2016: 422). The amount of evidence needed depends on the uniqueness of the evidence, as one piece can be enough to update prior confidence in the mechanism if it is unique enough (Ibid: 422). A challenge when transferring from theory to the empirical level is that the empirical observations are only indirectly measuring the theoretical concepts, as these are analytical constructs (Ibid: 168). To secure that the empirical manifestations are actually measuring the theoretical concepts, it is important to consider how to develop reliable and valid measures. Reliability is the robustness of the measurement; would others use the same operational definitions and produce the same result. Measurement validity concerns the congruence between the empirical measure and the defined concept (Ibid: 170-172). To accommodate reliability concerns, the mechanism in this thesis is based on previous theoretical literature on epistemic communities and the evidence is clearly introduced by explaining how it is deduced from raw data and why it can count as evidence. Likewise, measurement validity is discussed throughout the analysis by assessing the coherence between the theoretical concept and the pieces of evidence as some of the measures could potentially be biased or skewed. There are four ideal types of evidence. First, pattern-evidence, which is the predictions of statistical patterns in the evidence. Second, sequence-

evidence, which is a spatial or temporal chronology of events as predicted by the hypothesized causal mechanism. Third is the trace-evidence, where the mere existence of it provides proof in itself. Fourth is account-evidence, which is the content of different types of empirical evidence: they can be both oral and written accounts (Ibid: 258). The evidence can take many forms and the use of evidence is dependent on what kinds are best suited to test a particular part of the mechanism.

The third step of process-tracing is to collect empirical evidence and test whether it indicates that each part is present. When collecting data, the researcher needs to evaluate to what extent it is evidence of the part of the mechanism, it was predicted to and to what extent it is trustworthy. If the evidence for each part of the mechanism is found and deemed trustworthy, it is possible to infer that the mechanism is present in the case based on Bayesian logic of inference (Ibid: 422-23). By using the Bayesian logic of inference[4], it is possible to enable within-case inference on mechanisms through a function of prior confidence in the hypothesis, the theoretical confirming or disconfirming power of evidence and estimations of accuracy. Prior confidence is determined by assessing the plausibility of a given theoretical hypothesis in a case. The confidence level is important when choosing whether to look for confirming or disconfirming evidence, as when working with a high confidence it is optimal to look for disconfirming evidence and vice versa. The confidence must be assessed for each part of the mechanism (Ibid: 242-43). Weight of evidence is the factor of what new evidence can tell us about the validity of theoretical claims, why the evidence is evaluated by theoretical certainty compared to the uniqueness of evidence. Theoretical certainty holds the disconfirming power of evidence, because if the evidence is not found, the prior confidence can be downgraded (Ibid: 249). Theoretical uniqueness holds a confirmatory power of evidence, as finding the evidence goes with an evaluation of possible alternative explanations (Ibid: 250). The empirical accuracy is an evaluation of evidence as validity problems most often come from only partially reading sources, not examining sources properly or not considering underlying motivations. Likewise, reliability issues can arise as the interviewee might not remember everything. To ensure accuracy, the researcher can use triangulation by investigating the same part by different sources, cross-checking with other sources or evaluate the source by criteria such as knowledge, distance, reliability and motivations of the source (Ibid: 259-268).

This thesis relies heavily on written accounts like meeting records, official parliamentary transcripts, science reports and publications as well as the official declarations, conventions and treaties. These are in some cases used as a base for creating pattern or sequence-evidence. As a result, the issues arising from using these sources is not with the accuracy, as the nature of the sources makes a valid claim for considering them as

[4] Bayesian logic is applied informally in this thesis (Beach and Pedersen, 2016; 235f), as the character of the evidence is impossible to meaningfully quantify.

highly accurate, why implications to the analysis could come from omitting aspects rather than providing false accounts, why problems with coherence in the operationalization is more likely.

These sources are supported by personal accounts, newspaper articles and scientific publications, which could cause validity issues, why these are held to the criteria of knowledge, distance, reliability and motivations of the source. These issues could especially be with oral accounts, why an argument map with these considerations are provided in Annex 1 and 2 with the considerations and methods behind the interviews.

3. Conceptualizing and Operationalizing the theory

The first step of the theory-centric process-tracing is to conceptualize the mechanism based on already existing theory. The theory of epistemic communities relies on the basic assumptions from Neoliberalism that due to norms of mutual toleration states will deal with each other in respect for international law. When people act within the scope of rationality, they can achieve cooperation across borders (Jackson and Sørensen, 2013: 100-101). Nevertheless, it is not only states that can be the drivers for progress and change, as there are many forms of connections between societies including transnational links (Keohane and Nye, 1977: 25). One of these transnational links are epistemic communities, which is knowledge communities that can influence decision makers' policy choices in situations characterized by uncertainty in the conditions, implications or the outcome for certain policy choices (Haas, 1992).

3.1 Transnationalism

While classic international relation theories study the balance of power, and whose preferred vision of the world order prevails, they do not address how preferred and alternative visions are formed or how they change (Adler and Haas, 1992: 388). Transnationalism is about exploring the connections between state and non-state actors. It is about the people in these connections: the social space they inhabit, the networks they form and the ideas they exchange (Clavin, 2005: 422, 427). Transnational relations are "*regular interactions across national boundaries when at least one actor is a non-state agent or does not operate on behalf on a national government or an intergovernmental organization"* (Risse-Kappen, 1994: 3). Where interdependence as theorized by Keohane and Nye is about patterns of interactions that is costly to disrupt or break for all involved parties, the study of transnational relations as presented by Risse-Kappen (1994) centers around the policy impact maintained by clearly identifiable actors or groups as they attempt to achieve specific policy goals. However, this still leaves a range of different actors from multinational corporations, international organizations, transnational coalitions and transgovernmental networks among state officials. The different types of transnational actors can be distinguish based on two characteristics: motivation and institutionalization. Some can be motivated by instrumental gains; others are motivated by principled ideas or knowledge (Ibid: 8-9). In one end of the spectra are the informal coalitions, like epistemic communities, that rest only on implicit rules and informal understandings, while in the other end is highly institutionalized coalitions like organizations or corporations, which also rests on formal agreements and explicit rules (Ibid: 10). Transnationalism tries to explore how non-state actors or transnational communities have an impact on global governance. This leaves many actors and networks to have the possibility of shaping the rules and norms in the system – among these, we find the epistemic communities. The epistemic community is typically, though not

necessarily, a transnational group of scientists, whose motivations are based on spreading knowledge in informal settings. However, not every group can account for being an epistemic community, which will be further elaborated in the following section.

3.2 Epistemic Communities

Epistemic communities rest on shared values of knowledge in contrast to other transnational groups that rely on shared values in regards to idealism, selfinterests or fixed agendas, exemplified by, respectively, advocacy networks, multinational corporations or lobbyists (Cross, 2012: 140-42). Epistemic communities are made up by actors with the same scientifically grounded beliefs. Haas defined the epistemic community as a *"network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue- area"* (Haas, 1992: 3). He proposed certain characteristics to what determines whether it is an epistemic community and who the members are. However, this thesis treats epistemic communties as an entity, which is why Haas' broader definition is be applied.

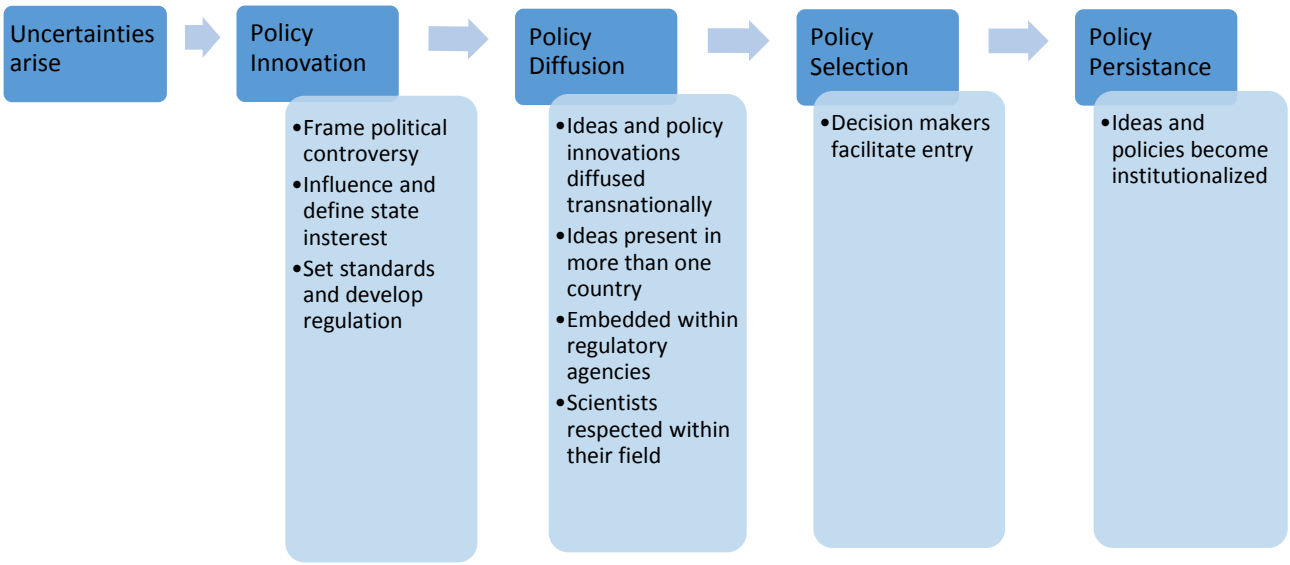
The causal logic enabling epistemic communities to shape policy is based on the basic assumption from neoliberal theory that policy coordination in the international system is needed to avoid a prisoners dilemma situation. The major dynamics are uncertaintiy, interpretation and institutionalization (Ibid). When states have a high degree of dependence – like in situations of complex interdependence – there is a need for coordination of policy choices, as they can have great impact on other states. In situations where policy choices of one state might affect others, uncertainties of the possible outcome arises and the need for information occurs. This information cannot be mere guesses on the possible outcome of an action, as the information needed are typically about the social or physical processes, their interrelation with other processes and the likely consequences of actions that require considerable scientific or technical expertise. However, the information is not purely objective; it is a result of the human interpretion, why it can provide different framings or understandings of a subject (Ibid: 3-4).

When uncertainties emerge and the need for information arise, decision makers will search for information and advice and this is where epistemic communities can provide their type of input (Ibid: 15). In traditional International Relations theory, a basic assumption is that all states know their own interests. However as the technical or scientifical issues emerge, decision makers find themselves making policy choices under conditions of uncertainties, which can be defined as making decisions without "*adequate information about the situation in hand*" (Alexander George in Haas, 1992: 13). Nevertheless, decision makers do not always recognize that they do not fully understand the issue and linkages between issues l, why it can take a crisis

or a shock to overcome inertia and to get them to seek the help of the epistemic community. This shock might even be provided by the epistemic community itself.

The help from an epistemic community can be provided in various ways. First, epistemic communities can clarify the cause-and-effect relationsship and give advice on the outcome of different actions. Second, they can give an insigth in the complex interlinkages between issues and the events that might unfold as a consequence of given actions. Third, epistemic communities can take part in defining the interests of a state - or even identify new ones. Fourth, they can help by directly formulating policies by either providing information to support a policy or to take a greater part in the policy-making process (Haas, 1992: 14-16). By adapting these different ways of influencing to an evolutionary framework, the proces of influence for epistemic communities can be termed policy evolution which consists of four stages: policy innovation, policy diffusion, policy selection and policy persistance (Adler and Haas, 1992: 373).

Figure 1: Policy Evolution (Based on Adler and Haas, 1992)



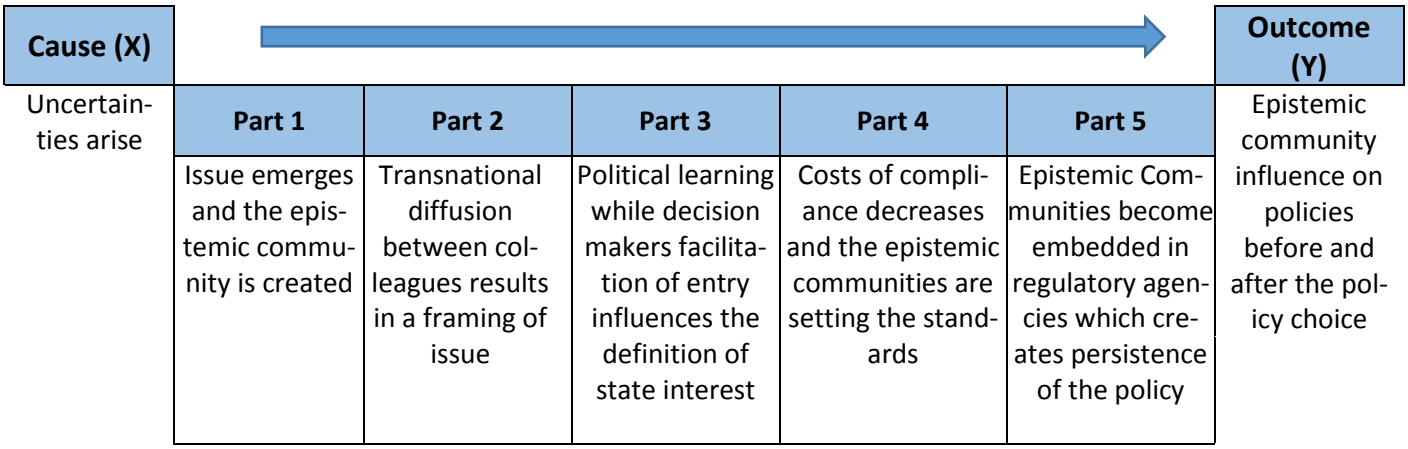
Policy innovation is the first stage of policy evolution in which epistemic communities can frame the range of political controversy, influence and define state interests and set the standards and develop regulation (Adler and Haas, 1992: 377-378). In the second stage, policy diffusion, the ideas and policy innovations of a research group can be diffused transnationally to other scientists on different platforms: through international organizations, during conferences, by publishing their research or other forms of exhanging knowledge like mobility-programs. For epistemic communities to have increasingly influence, their ideas need to be present in more than one country, their ideas can become embedded in the regulatory agencies, they can influence

parties that play a major role in negotiations but they need to be respected within their field (Ibid: 378-380). The next stage is policy selection, where the influence of epistemic communities becomes a function of the political fit – decision makers can facilitate the entry of some actors while creating barriers to others (Ibid: 382). The final step is policy persistance, which is when new ideas and policies become institutionalized, they can be almost irreversible, but only if the epistemic community keep their consensus. If they lose consensus, its authority diminishes and decision makers pay less attention to a fractioned community (Ibid: 384-385). Adler and Haas describes these stages in evolutionary terms, where one stage is followed by the next.

The policy evolution process has been critizied for assuming that given conditions of uncertainties, epistemic communities will automatically gain access to decision makers, who will adopt the normative and causal-beliefs of the community (King, 2005; Dunlop, 2009; Cross, 2012). Cross (2012) argues that conditions of uncertainties are the normal state of affairs today (p.151) while others point to the fact that policy-making is increasingly evidencebased anyway (Davies, 2012). Decision makers' demand for information can be satisfied by many options, as there among scientists or knowledge communities can be competing ideas or material interests (King, 2005; Cross, 2012). Even in knowledge communities, there might be other motivations at stake, why influence depends on whether the epistemic community is a part of a political coalition (Cross, 2012: 146).

The way Adler and Haas connect the different aspects of each stage does not seem like a natural and logical progression in the mechanistic sense, but rather as four different aspects for a traditional case-based analysis. In a world characterized by interdependence and transnational networks, scientists with interests in a certain issue will often engage discussing and evaluating research within the epistemic community, presenting the newest breakthroughs on conferences and conduct transnational research before being able to set standards or develop regulations. Thereby, some of the factors in the policy diffusion stage will likely happen before some of the factors in the policy innovation stage. Likewise, I argue, that an epistemic community cannot influence and define state interests if the policy makers have not facilitated entry into the policy making process. Therefore, I propose a modified causal mechanism for the policy evolution proces that takes into account how the different parts of each stage would be placed in relation to the other, if accounting for natural progression of events.

Figure 2: Causal mechanism for policy evolution by epistemic communities.



In Haas' original framework for epistimic communities, the policy evolution process becomes deterministic – when uncertainties arise, epistemic communities will influence the policy choices of the decision makers. In this way, one scope condition sets the agenda for what and how epistemic communities can work. However, problems can arise in all stages, which can complicate the relationship between the epistemic communities and the decision makers. As mentioned above, one of the core scope conditions that the literature discuss is uncertainty, but what if another scope condition might be important to the mechanism as well? Some critics (Cross, 2011) argue that the only cases in which epistemic communities really matter are the ones of low saliency, as decision makers do not have the time to deal with these matters themselves. High salience issues on the other hand are controversal issues that decision makers find important to take control over (Cross, 2011: 32). However, studies of epistemic communities show that this critique does not necessarily hold as epistemic communities have been found to have influence in cases of high salience issues (Cross 2013 on European Secutrity, Adler 1992 on nuclear arms control). In most of these cases, the policy choice has been a question of international coordination, while the high salience issue of territorial distribution in the Arctic is a zero-sum game. Therefore, different mechanisms for gaining influence might occur as there is much more at stake in the distribution of territory. In these situations, decision makers' policy choices can have a great impact on generations to come, which is why there is an incentive to take control in the situation even though it is characterized by high degrees of uncertainties.

3.2.1 Political learning

Dunlop (2009) critizes the scope condition of untertainty, as she argues that decision makers may know their own policy preferences even though the technical uncertainties are high (Dunlop, 2009: 293). However, she argues that there is a connection between the epistemic community and decision makers even when the epistemic communities do not seem to have influnce on policy choices. She defines the influence of epistemic communities as *"the ability to transfer policy by assuming control over knowledge-production and in doing so guiding decision-making learning"* (Dunlop, 2009: 290).

How political learning fits with the mechanism depends on whether it is a scope condition or a part of the mechanism. The revisionist perspective in this thesis is to examine, whether saliency is a scope condition, but the preliminary research into the case of *submission to the CLCS* indicates a breakdown of the mechanism as epistemic community influence vary. Where Dunlop treats political learning as a scope condition, I argue that it can become part of the knowledge acquisition process, why it becomes a part of the policy evolution process. Political learning (defined by taking control) and the facilitation of entry is a part of the same mechanism to the definition of state interests. The methodological and theoretical implications of treating political learning as a part of the mechanism rather than scope condition is discussed in the discussion after the analysis.

The connection between the spectres of learning to the policy evolution process is not new as Adler and Haas (1992) themselves argue that sources of learning in international relations can be found in the policy evolution process by changes in the epistimological assumptions and interpretation by decision makers. This means that decision makers can change their interests and adjust to new ways of thinking. Therefore, learning is not simply acquiering new information, but also the acceptance of new ways of drawing linkages between causes and effects and means and ends, while the outcomes can be distinguished to two types: The adoption of new practices or new goals (Adler and Haas, 1992: 385-86). By combining the perspective from Adler and Haas with Dunlops perspective of control, political learning then is about the control decision makers exerts over either the content/practices or the objectives /goals[5].

Dunlop (2009) creates a framework for analyzing the influence of epistemic communities based on these two types of outcome by drawing on adult education literature on learners' control over learning objectives and means like presented in Fig. 3 (Dunlop, 2009: 294-95). The incentive to take control over political learning depends on the structural realities and decision makers' own intentions as well as political support (Stone, 2000: 66 in Dunlop, 2009: 293).

[5] This thesis will use content and goals to describe the two dimensions, as the meaning in relations to policy choices are clear, whereas practices and objectives are more diffuse.

Figure 3: Political learning (Dunlop, 2009)

		Decision makers' control over learning objectives/goals	
		High	Low
Decision makers control over learning content/ practices	High	Self-directed learning Epistemic communities' role is weak Learner-driven	In-formal learning Epistemic communities' role is moderate Task-conscious
	Low	Non-formal learning Epistemic communities' role is moderate Expert-advice	Formal learning Epistemic communities' role is high Process-driven by epistemic community

Under conditions of self-directed learning, decision makers as learners will exert control over both content and goals, as learning is learner-driven. They do not rely on a single actor to inform the content or directions of policy, but instead construct the problem themselves and establish own solutions. Therefore, the epistemic communities can be treated as one teacher amongst many, their knowledge can be contested or simply ignored. In this situation, the influence of the epistemic community on decision makers will be weak (Dunlop, 2009: 297). Evidence of critical reflection of experiences or learning-by-doing, which in the end are pieced together by decision makers to determine both the issue and solution, will point to self-directed learning.

If decision makers' control over either content or goals are high, while the other is low, a situation of moderate influence can occur by non-formal or informal learning. When decision makers' control over content is high while the control over goals are low, political learning will be in-formal learning. In situations of in-formal learning, the learning will be task-conscious as decision makers design their own policies, but the epistemic communities can set the policy targets or standards for the policy design. To identify in-formal learning, it requires evidence that decision makers recognize the policy goals set by the epistemic community as well as engagement in monitoring and evaluating these goals (Ibid: 297). However, if control over content is low, while the control over goals are high, decision makers engage in non-formal learning. This type of learning occurs when decision makers interpret the problem, while it is up to the epistemic community to provide the information to manage the often complex issues as framed by decision makers. To identify non-formal learning, evidence of the decision makers' dependence on the delivery, legitimization or justification of policy preferences by epistemic communities are required (Ibid: 298).

To be able to exert a high degree of influence on decision makers, a situation of formal learning with low degrees of control over goals as well as content from the decision makers' side are necessary. Haas' original

framework depicted this mechanism in situations of uncertainty. In situations of formal learning, the epistemic community's belief system is expected to show in policy outcomes by supplementing or changing decision makers' understanding or policy preferences (Ibid: 299).

3.3 The mechanism for testing

In process-tracing, it is important to have a clear conceptualization of the theory into the different parts of the mechanism. By adding political learning to the causal mechanism, fig. 4 depicts how the revised mechanism would look like. As discussed above, political learning is assumed to be a part of the mechanism in relation to how decision makers facilitate entry, thereby affecting how epistemic communities can have an influence on defining state interests. However, as search and rescue operations and guidelines are not public and the submissions has not yet been evaluated by the CLCS, it is not possible to examine some of part four or part five, why the mechanism for testing is as presented below:

Figure 4: Revised causal mechanism of policy evolution

Cause (X)				**Outcome (Y)**
Uncertainties arise	**Part 1**	**Part 2**	**Part 3**	**Part 4**	Epistemic community influence on policy choice
	Issue emerges and the epistemic community is created	Transnational diffusion between colleagues results in a framing of issue	Political learning while decision makers' facilitation of entry influences the definition of state interest	Costs of compliance decreases	

Based on figure 4, this section will examine how the different parts of the mechanism will be visible in regards to *who* does *what* in *which* stage of the mechanism. In process-tracing, the cause is what triggers the mechanism to produce the outcome, but the theory on epistemic communities treats uncertainty as a scope condition. However, when adapting the theory to work in a process-tracing analysis, uncertainties are working as a trigger to the mechanism. In the next stage, the ideas of the epistemic communities must diffuse through communication between colleagues in scientific bodies, international organizations, conferences, publications and exchanges to put pressure on government. If not successful, they can engage major parties, regulatory agencies or other actors like international organizations, activists, companies or the like to put the issue on the political agenda (Adler and Haas, 1992: 378). As long as members are respected within their fields, the size of the epistemic community is irrelevant (Ibid). Then the epistemic community can frame the range of political controversy surrounding the issue by identifying the nature of the issue area and frame the context in which new data or ideas are interpreted (Ibid: 375). If the decision makers are already familiar

with some of the issues, they will tend to call upon epistemic communities that already align with the preexisting political agenda, when facilitating entry to the political scene (Ibid: 379). However, in highly specialized cases it might not be possible to choose another epistemic community; if one even exists, why this thesis involve Dunlop (2009) thoughts on political learning. Therefore, when facilitating entry, the decision makers can take control over the learning process why their conclusions might align with the decision makers' preferences without it being the ideas of the community. Then, depending on the incentive to take control over the process, the decision makers will defer to the ideas of the epistemic community when defining state interests. Decision makers will then adopt the ideas if the costs of compliance are not overshadowing the benefits, while the costs can be either military, economic, social, political or so (Ibid: 383). Depending on whether decision makers take control of the process, the influence of the epistemic community on policy choices can be either low, medium or high. The next paragraph presents the working hypothesis of each case and the operationalization of the theory by observable manifestations.

3.4 Operationalization of cases

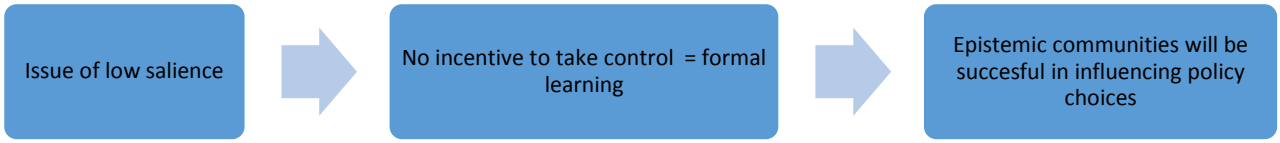
The second stage of theory-centric process-tracing is the operationalizing of the mechanism creating the link between the conceptualization of theory and the case-specific predicted indicators. This thesis seeks to explore the dynamics of Science Diplomacy in relation to how scientists and decision makers interact and explain under which conditions of saliency that epistemic communities can gain influence. The presence of the mechanism as conceptualized above (fig. 4) will be examined in two cases of policy choices in the Arctic – one of low saliency and one of high saliency – taking into account that different situations of political learning might affect the influence of the epistemic community.

3.4.1 Low salience case

The nature of a low salience issue creates a situation in which the cost of losing control is outweighed by the benefit of decision makers not having to take the time and effort to create their own understanding of cause-and-effect. Therefore, decision makers do not have incentives to take control over the policy learning process. The epistemic community can provide both the content and goals of political learning, which is why the content and goals will be highly influenced by the epistemic community's framing and understanding of the issue.

The low-salience hypothesis is that; *When an issue is characterized by low salience, the influence of the epistemic community will be high as the decision makers has no incentives to take control over political learning.*A simplified illustration of the causal mechanism demonstrates the working hypothesis below:

Figure 5: Low Salience



In this thesis, the case of low salience Arctic politics is the 2011 Search and Rescue (SAR) agreement, which was negotiated within the frames of the Arctic Council. With the thawing of the ice, new water routes opens up enabling new sectors like tourist cruises to operate, implications to the standard operation procedures in the event of distress increases. This is a new issue filled with uncertainties of how to manage and operate SAR response forces in the Arctic, why it works as a trigger to set the mechanism in motion. The expectation is that because SAR will benefit all countries with no real disadvantage to anyone, the issue is of low salience. Therefore, the decision makers will adhere to the content and goals set out by the epistemic community, why the epistemic community will have a strong impact on policy choices.

Table 1: Low Salience

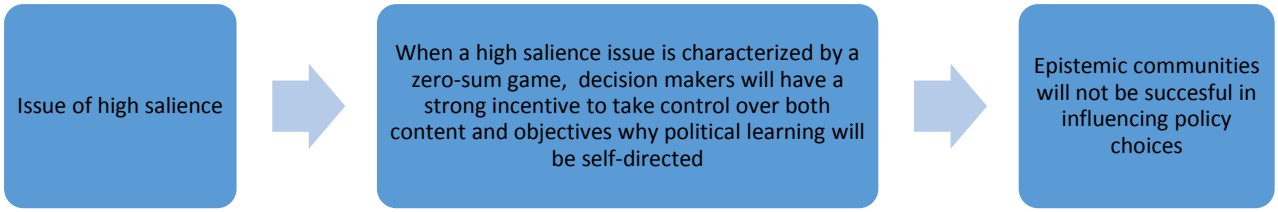
		Theory	Observable manifestations
Contextual (scope) Condition: Low Saliency	**Cause (X)**	Uncertainties arise	Climate changes are opening the Arctic waters
	Part 1	Issue emerges Epistemic community is created	The epistemic community emerges through the Arctic Council, which becomes aware of the climate changes and the implications for maritime safety.
	Part 2	Transnational diffusion between colleagues results in a framing of issue	The epistemic community discusses the issue of maritime safety, which then appears on the agenda at increasingly higher political levels. The epistemic community identifies the nature of the maritime safety issue and creates the context for interpreting new data or ideas.
	Part 3	Political learning while decision makers facilitation of entry influences the definition of state interest	Decision makers facilitate entry by depending on the epistemic community to uncover the risk/challenges and providing policy recommendations for maritime safety/security in the Arctic The epistemic community has control over both the learning contents and the goals why they both set the policy goals and propose recommendations to reach that goal.
	Part 4	Costs of compliance compared to the benefits decreases	Decision makers agree to the recommendations depending on domestic structures.
	Outcome (Y)	Epistemic community influence high on final policy choice	A legally binding multilateral SAR-agreement in accordance with epistemic community goals and content

3.4.2 High salience case

As discussed earlier, high saliency in itself does not limit the influence of epistemic communities. However, in high salience cases the structural realities or the political environment might have such a strong influence that the benefits of adopting the content and goals as presented by the epistemic community will not exceed the political cost of compliance. Therefore, the decision makers have a strong incentive to take control over both content and goals, resulting in a situation of self-directed learning. In this situation, the impact of epistemic community on decision makers will only be weak and they will not be successful in gaining influence on policy choices.

The high-salience hypothesis is that: "*When an issue is characterized by high salience, the influence of the epistemic community will be weak as the decision makers has incentives to take control over the political learning".* A simplified illustration of the causal mechanism demonstrates the working hypothesis:

Figure 6: High Salience



One high salience issue of the Arctic is the issue of maritime delimitation in the Central Arctic Ocean. In this case, there will be a strong incentive by decision makers to take control over the situation, as the distribution of territory is a zero-sum game with severe consequences for the loser. This case looks into the process behind the submissions to the CLCS from Denmark and Russia as well as the preliminary information/expected submission from Canada. The expectation is that due to strong incentives among decision makers to take control, the epistemic community will only have a limited degree of influence on policy choices.

Table 2: High Salience

Contextual (scope) Condition: High Saliency		Theory	Observable manifestations
	Cause (X)	Uncertainties arise	Climate changes are opening the Arctic waters
	Part 1	Issue emerges Epistemic community is created	Due to climate changes, new areas are opening up in the Arctic, which sparks a discussion of the legal status of the area and territorial rights. Russia's first submission in 2001 affects decision makers in Denmark and Canada to ratify the UNCLOS. An epistemic community regarding collection of scientific data emerges by funds provided by national governments.
	Part 2	Transnational diffusion between colleagues results in a framing of issue	A diffusion effect between the national epistemic communities through continuous research collaboration provides a frame of the Lomonosov Ridge as an extension of both the Eurasian and Amerasian continental shelves and as a submarine elevation, why it is possible to claim the North Pole.
	Part 3	Political learning while decision makers facilitation of entry influences the definition of state interest	Decision makers facilitate entry by depending on the epistemic community to create the basis for the submission to the continental shelf commission (CLCS) Decision makers can take control over both content and goals depending on the structural realities, the decision makers' own intentions or political support,
	Part 4	Costs of compliance compared to the benefits decreases	The decision makers consider the costs or benefits from the international arena to be lower than the perceived benefits
	Outcome (Y)	Epistemic community was not successful in affecting the policy choice	The epistemic community have a low degree of influence on Canada, Denmark and Russia's submissions to the CLCS as decision makers provide the goals and content.

4. Analysis – Search and Rescue

This part of the analysis traces the emergence of the multilateral SAR-agreement in the Arctic as an example of a low salience issue. The aim is to test the low salience hypothesis, with the expectation that the epistemic community is able to set both the goals and the means for the political learning, as it is an issue of coordination.

4.1 The emergence of uncertainties.

The starting point of the mechanism (fig.4) is the uncertainties, which spark the issue to arise on the agenda while an epistemic community is formed. The first observable manifestation of the mechanism is the presence of the trigger for the mechanism, uncertainties, which comes from climate changes opening the Arctic waters. This can be accompanied by a shock or a crisis leading the decision makers to open up to the epistemic community. Evidence of the trigger could be in the form of studies showing how climate changes affect the Arctic waters by thawing the ice, while an event connected to maritime safety with the strength to work as a shock would further strengthen the collected evidence. However, studies on the SAR - agreement (Rottem, 2014; Rottem, 2015) link climate changes to the agreement, why there is already a high confidence in the trigger. This sets a high bar for theoretical certainty of finding the predicted evidence, but it does not rule out alternative explanations, which makes the theoretical uniqueness relatively low. A crisis or shock is not necessarily a part of the mechanism, but it could work as an accelerator. It would support the impact of scientific reports as a trigger, but there is only a low degree of theoretical certainty and uniqueness to it, why it cannot be a trigger in itself.

It was the third IPCC[6] report from 2001 that put focus on the implications of climate changes, which lead the Arctic council to set in motion the development of an Arctic Climate Impact Assessment (ACIA) (Barrow-declaration, 2000) and an Arctic Marine Strategic Plan (AMSP) (Inari-declaration, 2002). The area of search and rescue in the Arctic is connected to the expectation of increased shipping activities due to the impacts of climate changes as the thawing of the ice opens new shipping routes and possibilities for tourist cruises (Annex 1: C1). Therefore, the uncertainties connected to the climate changes also connect to the possibility for shipping and tourism.

In addition, in 2000 during a military exercise the Russian submarine Kursk sank leaving more than 100 sailors trapped in the bottom of the ocean. However, the Russians did not have the capability to conduct the rescue mission themselves but due to trust issues, they also refused the first offers of help from other countries and by the time they accepted the help, it was too late (Wood-Donnely, 2013: 304). This event could have been

[6] Intergovernmental Panel on Climate Change

big enough to work as a shock to the trigger taking into account that Russia in 2001 suggested creating a project dealing with accidents and disasters in the Arctic region and invited all Arctic Member states to join (Arctic Council, 2001).

To assess whether the trigger of uncertainties was present, three pieces of evidence was introduced; both written and oral account evidence as well as the sequential evidence from a major crisis followed by political attention. There is no reason not to trust the accuracy of the evidence, as the science reports and personal accounts has no reason to present inaccurate information, while accuracy-issues in the sequence evidence could lie within the inference from an event to political attention. However, this inference seems highly plausible as the refusal from Russia to let other nations help could be due to mistrust, which could be overcome by formalizing cooperation. These pieces of evidences seems to support the fact that the already high level of confidence can be updated, as the climate change can be working as a trigger for setting in motion the process that lead to the SAR-agreement.

4.2 The epistemic community and the Arctic Council

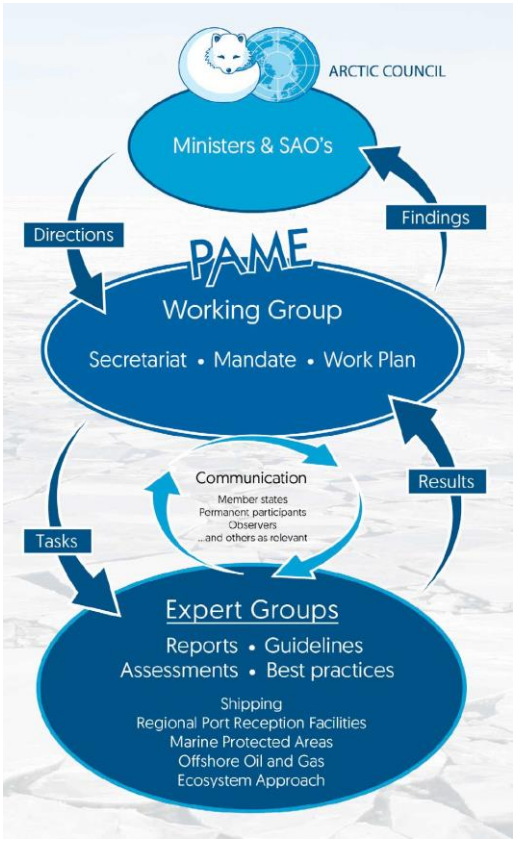
In accordance with the mechanism, as the epistemic community becomes aware of the climate changes and the possibility for increased shipping activities in the area, they turn the attention towards the maritime safety issue. The predicted evidence for the observable manifestation is that an epistemic community is present in the Arctic Council by matching Haas' definition as presented above with the characteristics of the expert- and working groups of the Arctic Council. The theoretical certainty in this piece of evidence is high, because if the Arctic Council cannot be categorized as an epistemic community, the mechanism falls. The theoretical uniqueness is relatively low as I apply the broad definition of epistemic communities as a threshold and do not go into further discussion of the internal coherence and the members' role. Evidence of the decision makers acknowledging the uncertainties and the epistemic community should be present through the adoption of policy measures, which enables the epistemic community to work with these issues. If the ministerial declarations show that these measures are being taken, it can account for a high uniqueness as there seem to be no other explanation than climate changes to why they should examine these issues further. The certainty is relatively low as the decision makers can be aware of the issue emerging on the agenda without it being present in the Arctic Council documents. As the mechanism has not been tested before, the prior confidence is low, why the uniqueness of the evidence should be enough to update the confidence.

4.2.1 Matching the epistemic community

In this case, the working groups and affiliated experts of the Arctic Council represent the epistemic community in question. The Arctic Council was established as a high-level forum for the Arctic states to promote cooperation, coordination and interaction between the Arctic States on common issues except from issues

concerning military security (Ottawa-declaration, 1996). Even though the Arctic Council is governed by biennial ministerial meetings, it is possible to view the Arctic Council as an epistemic community due to the structure of the Arctic Council as well as the powers and structural realities of the council – especially prior to the establishment of the permanent secretariat in Tromsø in 2011. The hierarchical structure between the political level and the working groups are exemplified in fig.7. There is a clear structure for the delegation of tasks, but it is also clearly separated. First, the political level with ministers and appointed Senior Arctic Officials (SAO's), who are typically from the foreign service of each member state. Second, the working groups consists of participants from the ministries specifically connected to the area (Annex 1: P1.1) and are often even further away from the decision makers as they typically works in agencies or offices, which are detached from hierarchy of the ministries. As an example, the participants from the Danish delegations in the working group meetings in PAME are typically from the Danish Environmental Protection Agency. The results from the work of the working groups and expert groups are the basis of the recommendations, the SAO's provide for the ministerial declarations. The working groups and expert groups stand out as a network of people with the expertise in their area and together, they provide the inputs for the Arctic Council and are considered by the national governments to be a valid source for research to lay ground for political decisions (Annex 1: P1.1). In this case, it is the working groups of Protection of the Arctic Marine Environment (PAME) and Emergency Prevention Preparedness and Response (EPPR). Compared to Haas' definition in section 3.2, the Arctic Council provides epistemic communities in various fields of environment and development in the Arctic, due to the expertise and claim of policy-relevant knowledge in the working groups.

Figure 7: Organizational chart of Arctic Council and PAME. Source: PAME - About us



4.2.2 Emergence of the issue

As mentioned above, the ACIA and AMSP were initiated to gain insight into what implications climate changes could have for the Arctic and due to the prospect of increased activities, the Arctic Council called for a more strategic approach (Inari-declaration, 2002). The ACIA found that the Arctic is experiencing some of the most severe climate changes on earth and documented that the Arctic sea cover was undergoing unprecedented transformation. One of the ten key findings was: "*Reduced sea ice is very likely to increase marine transport*

and access to resources." (AMAP, 2004: 11), which points to the likelihood of sovereignty, security and safety issues to arise (Ibid). Likewise, one of the significant strategic actions of the AMSP was that a comprehensive assessment of Arctic Marine shipping of current and projected levels was to be conducted (PAME 2006). This comprehensive assessment was initiated under the name of the Arctic Maritime Shipping Assessment (AMSA) to be conducted under the PAME working group (Reykjavik-declaration, 2004). The connections between the science reports and the ministerial declarations show that the issue increasingly did get on the agenda at the highest political level.

The first part of the mechanism appears to be present as the evidence points to an increasing awareness of climate changes and realization of the infrastructural uncertainties connected to the melting of sea ice, while an epistemic community can be identified within the Arctic Council. By using insights from interviews and tracing the reason behind each report to the previous and connecting them to the ministerial declarations, it is enough to update the prior confidence in the mechanism, as this was already low. The evidence used is based on fact sheets and public records of reports and declarations, why there is no reason to believe that anything should have compromised the accuracy of the sources.

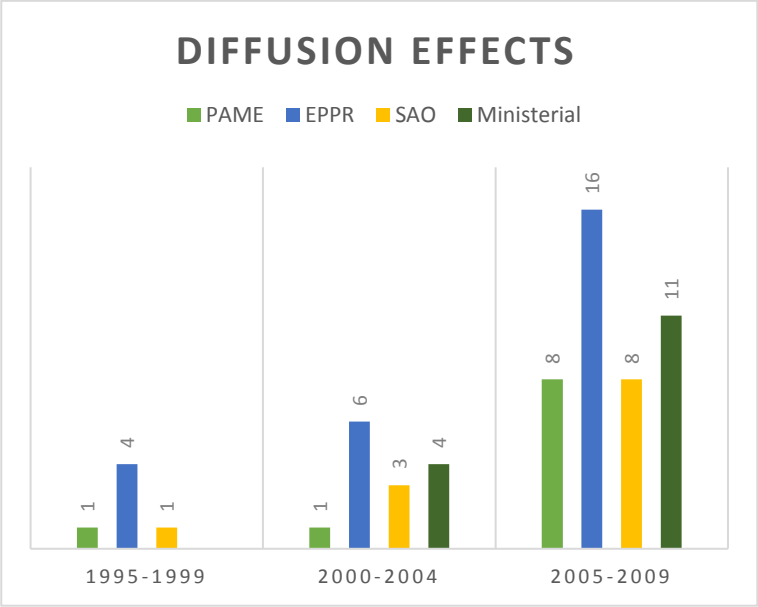
4.3 Diffusion of ideas and framing of the issue

In the next part, the diffusion of ideas between scientists lead the epistemic community to provide a frame to understand the issue at hand. The diffusion effect comes as the epistemic community discusses the issue of maritime safety, and it begin to appear on the agenda at higher political levels. This leads the epistemic community to identify the nature of the maritime safety issues and create the context for interpreting new data or ideas. As for the first part of the mechanism, prior confidence is relatively low, as the mechanism in this thesis has not been tested before. Because of the internal character of the epistemic community it should be possible trace a diffusion effect from the working group level through SAO-level and to the ministerial level by using the official meeting reports. However, even if the issue does not appear in the meeting reports, the diffusion effect could still have been there, why the theoretical certainty is low. However, if the evidence is found, little else can explain the existence, why the theoretical uniqueness is relatively high. For the framing effect to be present, the predicted evidence would show that "search and rescue" begins to appear in working group documents rather than terms like "Arctic rescue", "maritime safety" or "emergency response". The working documents and reports should point to the need for a multilateral/ international agreement. This is an important part of the mechanism, as it provides the basic understanding of the issue for the decision makers, and makes the theoretical certainty relatively high. However, framing as concept can be hard to prove out of experimental environments, why the uniqueness of this evidence is moderate. While the frame should come from the epistemic community, it could also come from the decision makers, which could be

hard to distinguish from each other. However, if the same phrases, references or understanding of context can be linked to the epistemic community rather than decision makers, the uniqueness is high.

To assess whether a diffusion effect happened in the Arctic Council, an analysis of working group meeting minutes, SAO meeting report and speeches, reports and ministerial declarations is conducted by creating an account of how often the subject of emergency response is on the agenda[7]. The problem with this type of analysis is the accuracy of the actual diffusion effect as the documents available from the Arctic Council are not complete transcripts, why the effect might be lower than anticipated. To document a diffusion effect, the analysis goes back to the beginning of the working groups (which started before the Ottawa-declaration). The analysis has been grouped in three categories due to major shifts in the acknowledgement of uncertainties: 1994-1999, 2000-2004 and 2005-2009.

Figure 8: Diffusion effects.



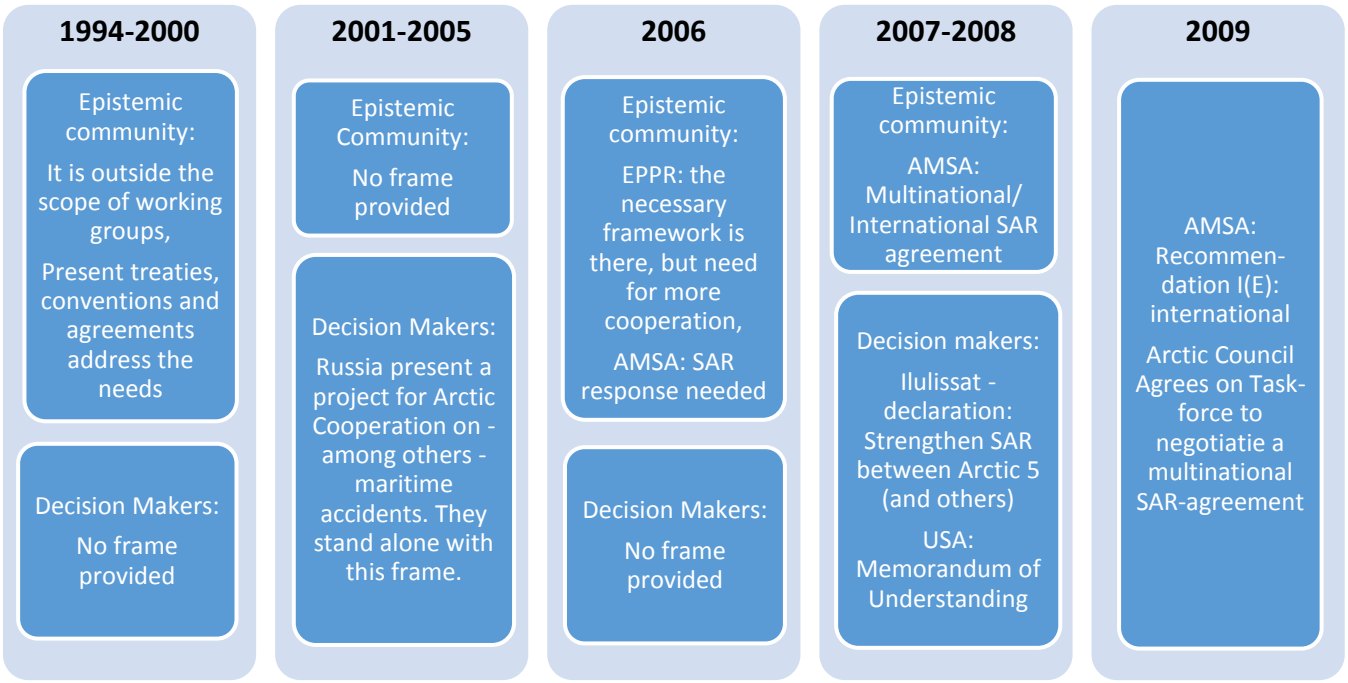
From 1994-1999 the focus was mainly on environmental challenges, but as climate changes was documented with the third IPCC report, a shift in focus was needed to research the effects on the Arctic, why the second period is from 2000-2004. The next grouping is 2005-2009; a period in which the Arctic Council started to look into the future needs for shipping infrastructure on the basis of the ACIA from 2004. The result is pictured in fig. 8, but diffusion effects as a theoretical concept is hard to trace empirically. By using this type of evidence for diffusion, it could pose some concerns on the measurement validity, because it is not certain that everything discussed on the meetings is in the reports. If omitted discussions skew the diffusion it could be problematic, as the effect could go the other way, but nothing indicates this, so it seems safe to update the confidence in the diffusion effect.

According to the mechanism, the diffusion of ideas leads to the development of a frame by the epistemic community, which presents a certain understanding of the context. In this case, the framing effect is traced through an analysis of the wording in the same documents as the above diffusion analysis. The frame in this

[7] A summation of times the issue of emergency response is mentioned in relation to shipping infrastructure

case is “need for a multilateral SAR agreement”. The evidence consists of account evidence to document the shift in wording and the occurrence of the evidence presents a case of temporal evidence by the development of the frame. If present, the analysis will show a shift from using different phrases to describe the issue to specifically using “search and rescue” and “multilateral”/”international” and “instrument”/”agreement”. It is also important to include evidence that speaks against the proposed frame. The 2011 SAR Agreement con-

Figure 9: Framing effects. For full analysis, see Annex 3



nects to the 1979 International Convention on Maritime Search and Rescue, which outlines the duties and responsibilities for states in regard to search and rescue. Therefore, the term “search and rescue” is nothing new for the 2011 agreement. The development based on Annex 3 is illustrated below:

When tracing the frame, it becomes evident that the frame of an international/multinational SAR-agreement is not used consistently in the reports or meeting minutes before initiating the AMSA. Instead, phrases like “emergency response”, “maritime safety”, “prevention of accidents” or “Arctic Rescue” are used, but is not linked to a need for a multilateral agreement – rather the contrary. As early as the first ministerial meeting, the Iqualuit-declaration calls for an assessment of the need of additional shipping measures (Iqualuit-declaration, 1998). This leads to an Analysis of Agreements and Arrangements by the EPPR, in which the EPPR concluded that the international conventions and instruments cover the need for Arctic cooperation in terms of prevention, preparedness and response to maritime accidents (EPPR, 2000b: 4). It was not until the work

on the AMSA report began that the term "search and rescue" or "SAR" began to present itself in the working papers of PAME. The first mention of SAR was in late 2006 as an anticipated need (PAME II, 2006), but the need for an international agreement on SAR is not mentioned before 2008 (PAME I, 2008). In the summary from the Arctic Marine Incidents Workshop held in March 2008, one of the key recommendations was that: "*Therefore, Arctic nations should forge an Arctic wide agreement for SAR and pollution response*" (PAME Workshop, 2009), which is the first time the need for an arctic agreement is mentioned. However, according to Lawson Brigham, the lead-author of the AMSA, it was clear from early on that a search and rescue agreement between the Arctic States was practical and one of the most achievable things to recommend to the Arctic states (Annex 1: P2.1). In the beginning, the need for search and rescue was mostly seen in an environmental light, but as the data from the shipping traffic began to appear in 2007-2008, the AMSA team was getting aware of the lack of infrastructure in remote areas (Annex 1: P2.1).

Nevertheless, as the account evidence shows, it was not only the work on the AMSA, which emphasized the need for an international agreement. As early as the SAO-meeting in 2001, the SAO's recommended that a Russian proposal on accident prevention should be discussed in the next EPPR working group meeting (SAO, 2001b). At the EPPR meeting, it received critique as it was noted that there might not be any added Arctic value in the project (EPPR, 2002). Even though the other Arctic countries were reluctant to the proposal, the Russian delegation presented the project as the "Arctic Rescue Initiative" on the SAO-meeting in Svartsengi in 2003 (Arctic Council, 2003). At the ministerial meeting in Reykjavik in 2004, the Russians highlighted the issue as a priority of its upcoming chairmanship and explicitly called for "*strengthening the Arctic cooperation*" by "*developing a mechanism for monitoring, prevention and management of emergencies in the Arctic region"* (MFA Russia, 2004). At the EPPR meeting in Copenhagen in 2005, the Russian Federation presented a draft legal agreement called "*The Agreement between the Governments-Members of the Arctic Council about Cooperation in the Field of the Emergency Prevention and Liquidation in the Arctic*" (EPPR, 2005). The response was diplomatically subtle, but still quite clear. The scope of the project was already covered by EPPR work or addressed through international conventions, treaties and bilateral agreements and a text for the 2006 Ministerial declaration was developed (EPPR, 2006). The text highlighted that while the existing treaties, conventions and agreements provide the necessary framework for EPPR, the development of cooperation and experience-sharing should continue.

Negotiations for the Ilulissat-declaration[8] and the preparations for the scenarios in the AMSA-workshop could mean that it was the object of consideration for months before the spring of 2008. This means that it

[8] A declaration on the commitment to Arctic governance and development in the five Arctic coastal states: Canada, Denmark, Norway, Russia and the US (Arctic 5)

becomes difficult to assert whether the frame was provided by the epistemic community or the decision makers. Therefore, the relationship between the Russian efforts and the AMSA-experts should be considered. If the Russian efforts initiated the frame, it is problematic to the political learning part of the mechanism, as it would be equal to taking control over the learning process. However, as figure 9 above indicates, Russia had no luck in convincing the other countries to create an international or intergovernmental agreement – rather the contrary, as the EPPR concluded the opposite, which was adopted at the ministerial level in 2006. To comparison, the work in the AMSA team already at this time showed that search and rescue would be a priority and on why the EPPR would conclude otherwise, Lawson Brigham says: *"No, and I don't know why the EPPR would recommend that"* (Annex 1: P2.2). The period between 2004 and 2006 was even the Russian chairmanship period and an agreement was one of their clear priorities (MFA Russia, 2004). Therefore, it seems plausible that the frame, which the decision makers adopted in the learning process of the 2011 SAR Agreement, came from the epistemic community rather than from Russia. However, the Russian efforts should not be overlooked, as they placed high emphasis on the search and rescue-issue when negotiating the Ilulissat-declaration, which is probably why it became a priority in the declaration (MFA Russia, 2008; Cain, 2008).

Tracing the origin of a frame is difficult when dealing with international politics, especially between a scientific and a political level. By applying a systematic approach to the public records, it points towards the epistemic community being the driver in the development of the frame, but it is an insecure measure as there can be several things hidden from the public eye. Supporting the mechanism is that the frame provided by the Russians did not manage to break through to decision makers in other countries before the epistemic community began their work on the AMSA and results started to appear. As prior confidence is already relatively low, it does seem plausible to update the confidence in this part enabling the analysis of the next part.

4.4 Entry and political learning

In the next part of the mechanism, decision makers will facilitate entry for the epistemic community by depending on them to provide the policy goals and the means to reach them. In this case, it means that the governments from the eight Arctic states depend on the AMSA to provide both policy goals and recommendations on how to reach them, why the epistemic community gains control over the political learning process. This part of the mechanism relies on a combination of multiple sources to strengthen the accuracy of the analysis: elite interviews, analysis of declarations compared to certain events, research documents related to the AMSA as well as the AMSA. This part is one of the most essential parts of the mechanism, but also one of those hardest to prove. The theoretical certainty and uniqueness needs to be high, as evidence of the decision makers taking control rather than giving it to the epistemic community breaks the low salience hypothesis. However, if the evidence found supports the predicted evidence, it will be rather unlikely that other

actors could have asserted more influence than the epistemic community due to the structure between the Arctic states, the Arctic Council and the SAR-Agreement.

In the summer of 2007, a Russian research expedition planted a Russian flag on the seabed at the North Pole. The Danish foreign minister, Per Stig Møller, arranged the Ilulissat-conference to make sure that the Arctic coastal states saw the UNCLOS as the main legal framework for the distribution of territory connected to the outer continental shelves. In this sense, the search and rescue could be a part of a bargaining chip securing that Russia respects the territorial recommendations from the CLCS. In a case study of the SAR Agreement and Norway, several Norwegian senior diplomats claim that it was not until the Ilulissat-meeting and the declaration that search and rescue made it to the top of the Arctic agenda (Rottem, 2014: 286). Additionally, the Russian Foreign Minister Sergey Lavrov stated at the press conference following the signing of the Ilulissat-declaration that it was the Russians who suggested returning to the discussion of an international search and rescue system in the Arctic (MFA Russia, 2008).

The Ilulissat-declaration states that "*The increased use of Arctic waters for tourism, shipping, research and resource development also increases the risk of accidents and therefore the need to further strengthen search and rescue capabilities and capacity around the Arctic Ocean to ensure an appropriate response from states to any accident*" (Ilulissat-declaration, 2008). It makes no reference to whether the enhanced efforts to secure search and rescue should be completed within the existing legal framework or if new agreements were needed – only that they agreed to "…*work to promote safety of life at sea in the Arctic Ocean, including through bilateral and multilateral arrangements between or among relevant states*" (Ilulissat-declaration, 2008). If the Russians really used it as a bargaining chip for an international agreement, the wording of the text could have been stronger.

The outline of these efforts illustrates that the Russian did not manage to make an international agreement happen for several years. So what did actually change from the EPPR working group stated that the existing agreements provided a sufficient framework in late 2006 and until the taskforce on a multilateral agreement was assembled in 2009 to the final agreement in 2011?

According to the lead author of the AMSA report, Dr. Lawson Brigham, it was clear from the beginning that there was an increasing infrastructural need in the Arctic, why talks on search and rescue started already then. This account of events is supported by former SAO, Ole Samsing, who during the interview repeatedly pointed to the conclusions from the ACIA-report as the starting point for talks on search and rescue (Annex 1: P3.1). However, in the beginning the focus was more on developing a Polar Code for ships under the International Maritime Organizations (IMO) than a search and rescue instrument (Annex 1: P3.1)

In November 2007 the cruise ship *MV Explorer* sank in the Antarctic region, but no one on board was harmed due to quiet weather and fast response (Revkin, 2007). Nevertheless, if the accident had happened in the Arctic waters, the outcome could have been a lot more severe, as response time in worst case can be up to 12–24 hours (PAME Workshop, 2009). Therefore, the accident heightened anxieties about search and rescue (Dodds and Nuttall, 2016: 14). Especially the summary from the 2008 workshop on Arctic Marine Incidents highlighted the need for international solutions and the scenarios presented in the workshop showed that in case of emergencies in the Arctic, several jurisdictional problems was identified. Even though bilateral SAR agreements existed between nations, there was no agreement, which addressed response procedures for incidents involving multiple Arctic nations (PAME Workshop, 2009). As this could result in increased response time due to government clearance, it would pose a delay to the services of SAR. This lead to the recommendation that "*Arctic nations should forge an Arctic wide agreement for SAR and pollution response."* (PAME Workshop, 2009). In addition, the theory on the epistemic community argues that decision makers might need to experience a crisis or shock to overcome inertia, which the sinking of the *MV Explorer* could have served as.

One of the main recommendations in the AMSA were to enhance maritime security, including the 1(e) recommendation, which became vital to the creation of the SAR agreement (Annex 3). When creating the policy recommendation, decision makers could have taken control of the policy goals, but according to Dr. Brigham, this was not what happened (Annex 1: P3.2). The policy recommendations were negotiated between the experts of the AMSA-report and the country delegations to PAM and during these negotiations, the delegations accepted all of the recommendations from the AMSA-group with only small comments to e.g. the wording (Annex 1: P3.3). The US wanted to add a recommendation, but that did not relate to the issue of search and rescue (Annex 1: P3.4). However, while the maritime part had been on the agenda from the beginning, it was not until late in the decade that the aeronautical was added to the recommendation; it was a way to bring Sweden and Finland into the agreement, as they have no coastal waters in the Arctic region (Annex 1: P3.5).

The AMSA-report was presented at the ministerial meeting in Tromsø in 2009 and the Ministers of the Arctic states agreed to *"Approve the establishment of a task force to develop and complete negotiation by the next Ministerial meeting in 2011 of an international instrument on cooperation on search and rescue operations in the Arctic"* (Tromsø-declaration, 2009). The AMSA provided a window of opportunity for decision makers to start a process of negotiating an agreement (Heather Exner-Pirot, 2012: 197; Annex 1: P3.6). With the esta-blishment of the task force at the ministerial meeting in 2009, it points in the direction of the decision

makers facilitating entry for the epistemic community to set the policy goals. However, the Ilulissat-declaration can also be viewed as a method of facilitating access to decision makers as it brought the issue to the attention of the highest political level.

Dr. Brigham underlined the importance of choosing the Arctic Council as a facilitator of the task force, because the AMSA team had expected that the Arctic States would negotiate the agreement in a closed setting. By choosing the Arctic Council as a facilitator, the Indigenous Peoples as well as maritime experts were invited to be observers in the negotiations and by choosing an open rather than closed setting for the negotiations, the Arctic States did not exclude the epistemic community. The first record of this solution came from the US delegation in a SAO-meeting in late 2008, where they proposed to create a body for negotiations reporting to the SAO's (US delegation of the Arctic Council, 2008).

Therefore, in appointing a task force to draft an agreement between the eight Arctic states with the Arctic Council as the facilitator, the epistemic community had success in the facilitation of entry. Given the combination between the timing of events, analysis of declarations and primary source accounts it points to the epistemic community being successful in providing the policy goals. However, the fact that the aeronautical part was not included until later to accommodate Finland and Sweden suggests that decision makers took partial control of the goal. However, as it was a way to include all parties rather than changing the frame from the epistemic community and the fact that the epistemic community was such a strong force in the development of the AMSA-report, it still seems plausible to update the prior confidence. Still, the Russian interests and the outcome of the Ilulissat-declaration cannot be dismissed as not being a contributing factor, but as mentioned in the discussion of Haas' original framework, this is not necessarily a contradicting factor to the influence of epistemic communities. Therefore, it works as an accelerator and facilitator of the frames of the epistemic community rather than a competing explanation.

4.4.1 Defining state interests

In this part of the mechanism, decision makers define state interests based on the policy goals and policy recommendations provided by the epistemic community. As for the previous parts, prior confidence is low. If there is a match between the policy recommendations in the AMSA and the final agreement, the theoretical uniqueness is high. The theoretical certainty is low, because even if the evidence is not found, the epistemic community could still have influenced state interests. This section relates to the previous analysis of policy goals by establishing the connections between the epistemic community, the policy recommendations and decision makers. It is focused on providing insight to state interest in a more overall perspective by comparing the policy recommendations from the epistemic community with the wording and content of the final

agreement. By using official sources, the accuracy is high on trustworthiness, but it is not the perfect measure. However, this strategy is chosen as a way to work around the fact that it has not been possible to get insight into the positions of the different countries in the negotiations due to confidentiality measures.

In the Tromsø-declaration, there was no direct link to the AMSA-report, but this is where the former steps of the mechanism gives the coupling, as the SAR-frame was developed between EPPR, PAME and the AMSA report, while the Russian suggestion in EPPR was dismissed in 2006. After the ministerial in 2009, the PAME working group created a follow-up instrument on the AMSA, including on the SAR-agreement (PAME 2009). Combined with the implementation report from 2011, where the task force is mentioned as a part of implementing the recommendation, it points towards a connection between the recommendations in the AMSA, the task force and later the SAR-agreement.

According to sources in the Danish Ministry of Defence, the starting point of the negotiations was based on a Memorandum of Understanding (MoU) proposed by the US (Annex 1: P3.7). This initial MoU was drafted on the basis of the 1999 SAR Memorandum of Understanding between the US, UK and Canada (Heather Exner-Pirot, 2012: 197). The 1999 MoU operational guidelines consist of areas of cooperation, guidelines on mutual assistance and funding/liability. The main points of these areas is cooperation: joint exercises, disaster relief, environmental responses and vessel examinations, provisions on radio frequencies, appointing liaisons, provide the free exchange of information as well as mission support. The provisions on mutual assistance constrains to the acceptance of complying with own regulations in situations of assistance, and the funding/liability part states that each state carries its own expenses and is liable to the damage coming from activities from its own coast guard (MoU between US and CA, 1999). This leads to thinking that in terms of policy content, it the decision makers took control. However, the 2011 SAR agreement is far more extensive than the 1999 MoU, why it is beneficial to compare the agreement to the recommendations provided by the AMSA-report and the Arctic Marine Incident Workshop. The comparison is not based on the exact words of each paragraph, but by matching the themes of the different parts to the policy recommendations (For comparison, see annex 4). The comparison shows that most of the themes and duties from the SAR-agreement also appears as recommendations in the AMSA report and the Arctic Marine Incident Workshop, but not in the 1999 MoU. However, the decision makers diverged on two important aspects. First, the funding scheme as the epistemic community recommended creating a fund, but the member states chose to leave the financial costs to each state itself like in the 1999 MoU. Second, whether the agreement should be legally binding. The AMSA did not mention whether the agreement should be legally binding or not; this came from the decision makers during negotiations. In the first concept of the MoU, the US delegation did not think the MoU should be legally binding (US delegation of the Arctic Council, 2008). However, the Russians favored a

binding agreement, and by the end of the negotiations, it was clear that the Russians got their way (Heather Exner-Pirot, 2012: 197).

Ole Samsing points out that in general when creating regulations on Arctic issues, the governments of the Arctic states turns to the research provided by the Arctic Council (Annex 1: P3.9) and even if the initial negotiations were based on the 1999 MoU, the result resembles the AMSA recommendations to a larger degree. On this ground, the evidence seems to go in the direction of being able to update our confidence, but the decision makers was not completely passive. They did take some control with the content by not creating a joint funding scheme and – in large parts due to the Russian efforts – they took the agreement a step further than the epistemic community had imagined by committing to a legally binding agreement. Nevertheless, the overall conclusion is that decision makers did rely on the recommendations from the epistemic community and as the prior confidence is low, it can be updated.

4.5 Costs of compliance

An important factor when considering the agreement is the barrier of the costs of compliance by living up to the obligations mentioned in the SAR-agreement. In this part of the mechanism, decision makers will agree to the policy goals and recommendations depending on different costs of the agreement compared to the perceived benefits. The prior confidence in this part is moderate, as the cost-benefit analysis by states in a coordination game is a relatively established factor, but how it relates to the mechanism is new. The theoretical uniqueness of this evidence is moderate as the costs are applied in a broad; territorial concerns, implications of funding instruments or the issue of binding or non-binding.

One of the important elements in the agreement is the map dividing areas of responsibility between the Arctic States, even in areas of dispute. According to Brigham, this map is probably the last one with lines going all the way up to the North Pole, which was a major accomplishment, because it would not have been possible if the agreement had only covered maritime SAR. However, as the agreement also covers aeronautical SAR, it was a necessity (Annex 1: P4.1). A note to the agreement is that the boundaries established for SAR is not territorial boundaries and can never be viewed as such, why it should not pose an issue to the Arctic States. However, it could potentially become an issue for the Arctic states with claims on the extended continental shelf in the Central Arctic Ocean. The CLCS considers whether a claim is valid or not compared to the scientific facts, but if two or more countries have valid claims to the same areas of an extended continental shelf, the delimitation is negotiated bilaterally. The right to the extended continental shelf gives a state the right to explore natural resources in regards to mineral and other non-living resources (UNCLOS, Art.77). It is hard to imagine one state having the responsibility of SAR in an area, while another state is drilling for gas or oil in that same area – even though it should be regarded as two separate issues. However,

as the map actually was drawn, it could not have been big enough a cost to neither Canada, Denmark nor Russia.

In regards to the financial arrangements, the AMSA recommended the establishment of an international Arctic response fund while also increasing insurance costs and penalties for ships. This recommendation was not followed but instead the Arctic states decided to lay the expenses of SAR on each state itself. It could be because the Arctic States did not want further institutionalization of the Arctic Council by setting up an independent fund to be managed under the Arctic Council, but no evidence have been found to support this claim.

The question of institutionalization is also present in the choice of a legally binding agreement. When first brought to the table of the Arctic Council, the US pictured that the SAR-instrument could be in the shape of a non-binding MoU. That the US is reluctant to create legally binding instruments in the Arctic Council has been clear from the beginning, as they even in the establishment of the Arctic Council was against it being created as an institution despite hard efforts from Canada to convince them otherwise (Molenaar, 2012: 572; Rottem, 2014: 285). However, in the case of the SAR agreement the Scandinavian countries were in favor of highlighting the Arctic Council as the central forum for issues concerning the management of the Arctic (Rottem, 2014: 286). Finland, Iceland and Sweden were especially in favor of negotiating the agreement under the auspices of the Arctic Council (Rottem, 2014: 290), which could have been due to fear of the Arctic 5 creating their own agreement, like the Ilulissat-declaration suggested. Therefore, creating a legally binding agreement does not seem pose any significant political costs to either the Scandinavian countries or Canada. The Russians also favored a mandatory approach and after one and a half year of negotiating, this was established (Heather Exner-Pirot, 2012: 197). To accommodate what was most likely a fear from the US that the internal political processes would not be positive towards the concept of a legally binding agreement, it was called an agreement rather than treaty, why it only demanded the signature of the Secretary of State rather than being up for a vote (Wood-Donnely, 2013: 202-203).

The Ottawa-declaration clearly states, "*The Arctic Council should not deal with matters related to military security"* (Ottawa-declaration, 1996, *)*,* why another thing to be considered by the signatory states was the military nature of some of the assigned SAR agencies or coordination centers. The SAR-agreement could in this sense be a step away from the "no military" policies, as exercises between the operative agencies in its core could be seen as military operations as a part of the national defence departments (Wood-Donnely, 2013: 204-205). The concern of using military or defence assets has also been a concern in the US, where the Coast Guard is a civilian force (Annex 1: P4.2). However, as the Arctic Council was not the signatory, but the eight Arctic States are, and because the nature of the coast guards services does not provide the capacity to

acts of aggression[9], it could be a factor to why it became possible. In addition, the Ottawa-declaration states "should", why there is an opening for security matters, if consensus among the Arctic States is present. According to Ole Samsing because the Cold War was over there was nothing to be worried about, why it was about getting the Russians on board (Annex 1: P4.3).

By looking into areas of dispute in international relations like territorial concerns and reluctance towards institutionalization or militarization, it becomes clear that even though these issues could have been controversial, they did not hinder ratification of the agreement in any of the countries. The concern of institutionalization from some member countries was met by not creating a financial instrument under the Arctic Council. In this agreement, consensus among the member states had been important (Annex 1: P3.2), why possible obstacles to ratification among stakeholders could have been dealt with during the negotiations.

In this step of the mechanism, the analysis provides an overall picture, as it has not been possible to gain access to the relevant negotiation documents from the task force. Therefore, it could be that some of the recommendations from the AMSA was not included in the agreement due to the costs being to high. However, by taking into account some of the most salient issues in international politics, where states normally differ, it seems to make a positive case for updating the confidence in this part of the mechanism. Without conducting thorough analysis of each of the eight states domestic structures, it cannot be said for sure, but that is outside the scope of this thesis.

4.6 Subconclusion to the case of Search and Rescue

There has been two leads, which could account for the subject of search and rescue to rise on the agenda. Firstly, the continued efforts of Russia to create an instrument for search and rescue and secondly, the work of maritime experts on creating the I(e) recommendation in the AMSA. The analysis shows, that even though the Russians were the first to put it on the agenda, they did not manage to push through to the other member states, before the work on the AMSA. This points in a large degree to a success from the epistemic community in setting the policy goals and the final agreement resembled the recommendations made in the AMSA rather than the US draft for a MoU. The Russian effort is not to be diminished as the emphasis of search and rescue in the Ilulissat-declaration and the creation of a binding agreement came from them. However, while they were a major driving factor in creating the final agreement, they were not successful in doing it on their own. Therefore, it shows that the epistemic community was able to assert a high degree of influence on the policy decision by providing both the policy goal and the content, why the overall confidence in the mechanism can be updated.

[9] As the Russian overflights are not counted as such, neither should the border-crossing of ships.

5. Analysis – Submissions to the Commission on Limits of the Continental Shelf

This case examines the dynamics behind the expected Canadian submission and the Danish and the Russian submissions to the CLCS, when creating their submission for establishing their boundaries on the outer continental shelf in the Central Arctic Ocean. Canada, Denmark and Russia are the only Arctic countries, which are waiting for their submission to be evaluated by the CLCS. Norway has already had their submission evaluated and while the United States could have a future claim pending, they have yet to ratify the agreement. As Sweden, Iceland and Finland are not Arctic Ocean coastal states, possible overlapping claims will not be in the Central Arctic Ocean, which is the focus of this analysis.

5.1 Uncertainties arise

The first step is to establish the cause by examining whether the trigger of the mechanism is present. As in the previous case, the uncertainties in the case of *the submissions to the CLCS* comes as an effect of the changing climate. Likewise, this connection to the strive for creating submissions to the CLCS is established (Forsberg and Taagholt: 1998), why prior confidence is relatively high. The theoretical certainty is high, as the connection should also be present in the evidence. The theoretical uniqueness is also high, because other than the need to provide the political learning to a submission, there does not seem to be a plausible explanation of the highly expensive research projects. While the coordination game in the Arctic Ocean in the previous case was sparked by the possibility of saving transport time and increased tourism, in this case, the driver was the possibility to claim resources. At this time, the Central Arctic Ocean was relatively undiscovered as research in these remote areas had been scarce due to the challenging ice- and weather conditions as well as lack of funds (Ibid: 258). However, when the UNCLOS went into force in 1996, it presented the possibility to make a claim for the extended continental shelf. To deal with these claims, the UN created the Commission on the Limits of the Continental Shelf (CLCS). The commission was set up in 1997 and while it took some years to establish guidelines and operating procedures to assess the submissions (CLCS, 2000), the first open meeting was on May 1st 2000 and already at that stage did the commission know that some countries were in the advanced stages of preparing a claim (Ibid). In 2001, Russia was the first country to make a submission to the CLCS and the claim extended all the way to the North Pole. The CLCS considered the claim in 2002 and found that based on the scientific status of the data, it could not make a favorable recommendation, but gave Russia the possibility to collect more data by recommending them to make an updated submission (Russia Executive Summary, 2015). The Russian submission could have worked as a shocker in getting the governments in Denmark and Canada to realize that they needed to start a process. However, as explored below, the epistemic communities on the submissions evolved as early as 1994 in Canada and 1998 in Denmark, which was before the Russian submission, why it seems reasonable to assert that

the rising uncertainties connected to creating a submission was the trigger, why it is possible to update the prior confidence.

5.2 An Epistemic Community on territorial issues

According to the mechanism, the issue arises on the agenda as the epistemic community forms. In the case of Search and Rescue, the epistemic community was easy to establish as it was organized through the Arctic Council. However, in this case is both highly scientific in nature, but also highly politicized, why it can be hard to identify. As for the case of *Search and Rescue*, the match between the definition of epistemic communities and people involved in the project has to be there, why the theoretical certainty is high. The uniqueness is low, because scientists can provide inputs to decision makers without classifying as an epistemic community. The submissions are politicized in their nature as the boundary requirements in the UNCLOS are the result of political negotiations between UN member states. However, according to Haas (1992) it is not an issue if the establishments of research projects and communities come from decision makers, but it is important that their work is without interference from the political level.

As mentioned earlier, the scientific process in Denmark and Canada started before the initiation of the ratification process. The first Canadian project is from 1994 (MacNab, 1994) and was conducted by a project team under the Geophysics, Sedimentary an Marine Geoscience Branch of the Geological Survey of Canada (GSC) and the Canadian Hydrographic Service (CHS), but was drawing on existing data. The Commission for Scientific Research in Greenland initiated the first project in Denmark in 1998 (Naja Mikkelsen et al., 2001) called the Greenland Arctic Ocean Project (GRASP), which was an initiative with multiple stakeholders (Forsbjerg and Taagholt, 1998: 263). In Russia, the process was a little different as the first Russian claim was based on old seismic data collected before 1990 (Russia Executive Summary, 2015: 12). In the Canadian and Danish cases, some of the parties from the initial projects were also responsible for data collection and interpretation in the actual research programmes: Canada's Extended Continental Shelf Program and the Danish Continental Shelf Project[10]. For Russia, the scientific research was conducted under the Russian Research Institute of Geology and Mineral Resources of the World Ocean of the Federal Agency on Mineral Resources with the participation of the State Research Navigation-Hydrographic Institute (Russian Ministry of Defence) and the P.P. Shirshov Institute of Oceanology (Russian Academy of Sciences) (Russia Executive Summary, 2015: 9).

With Haas' definition of epistemic communities in section 3.2, it becomes easy to draw the parallel between the theoretic definition and the responsible research institutions. They are all specialized in their field of work

[10] Canada: GSC and GHS ((Government of Canada, 2016), Denmark: Data-responsible institutions - GEUS, DTU Space, Danish Geodata Agency (The Continental Shelf Project, 2013)

with the national governments relying on them for information, why it seems plausible to characterize them as epistemic communities within their countries. In the diffusion and framing stage of the analysis, they evolve to become a transnational epistemic community through joint research trips and sharing of data and information.

5.2.1 The issue arises: The ratification of the convention in Canada and Denmark

In the first part of the mechanism, the issue arises on the agenda on the political level, which have a low prior confidence. In this case, the observable manifestation is that while the decision makers are aware of the possibilities in the UNCLOS, the Russian submission in 2001 could work as a shock or crisis to further accelerate the ratification process in both Canada and Denmark. Theoretical certainty in the link between the ratification and the Russian submission can be low, as the shock is not a prerequisite for this part, only an accelerator. The theoretical certainty in the reasoning behind ratifying the territorial possibilities is high; if the UNCLOS was ratified on other backgrounds, it cannot account for evidence of the mechanism. As the territorial issue in the UNCLOS is one of the more contested issues, the decision makers in the countries would not be voicing this reason if not actually there, why the theoretical uniqueness is high.

On November 7 2003, Canada ratified the UNCLOS convention and thereby opened up for the opportunity to create a submission to the CLCS. According to McDorman (2004) Canada had always been a supporter of the UNCLOS, but when asked when to ratify, the response was merely ”soon” (p.104). Nevertheless, it would take them more than 20 years to ratify the convention. However, many industrialized countries did not ratify the convention before the *Agreement relating to the implementation of Part XI of the Convention of 10 December 1982* were put in place in 1994 to accommodate the industrialized countries objection to certain seabed mining provisions in the UNCLOS (Division for Ocean Affairs and the Law of the Sea, 2010). This agreement secured the ratification from most of the industrialized countries in the following years (Division for Ocean Affairs and the Law of the Sea, 2016), but it could have been the main reason why neither Canada nor Denmark had ratified the convention before 1996, when Part XI entered into force. However, at the time of the Russian submission in 2001, it was only Canada, Denmark and the US of the western industrialized coastal states, who had yet to ratify the agreement.

The evidence pointing towards the territorial possibility comes from a mixture of evidence. The Canadian Government ordered a desktop study as early as the mid 1990’s, which found that the possibility to claim the outer continental shelf was there (Higdon, 2014: 60), why it as trace evidence can prove that the Canadian Government was aware of the possibility to make a submission and that it was a priority. The other evidence lies in the order of the events, as they found the possibility in the desktop study first, then Russia submitted

their claim. Canada made a notification to the Russian submission that stated that Canada could not determine whether they agreed with Russia's claim due to lack of data, and that the notification could not be seen as an acceptance of the claim. In 2002, the CLCS rejected the Russian submission based on lack of data and urged Russia to resubmit with more data and in 2003 Canada ratified the convention.

However, an alternative explanation is that the reluctance to ratify the UNCLOS was tied to the need for a regime respecting regulation of straddling stock fishing activity (McDorman, 2004: 104). McDorman (2004) argues that the ratification was made possible with the development of the United Nations Highly Migratory and Straddling Stocks Agreement (UNFA), which connects to the UNCLOS. When the UNFA entered into force in 2001, it settled some major Canadian fishing issues connecting to the UNCLOS, but Canada wanted to ensure major states to be parties of the UNFA, and the European Community did not ratify before 2003 due to internal ratifications issues. So when the European Community announced that they would ratify the UNFA, the momentum for ratifying the UNCLOS itself was there (Ibid: 104).

In that view, the Canadian delay could be seen as bargaining chip to secure the ratification of the UNFA of the European states. Evidence supporting this alternative explanation comes from the Canadian parliamentary records. When ratifying a treaty like the UNCLOS, it does not need to be voted on nor discussed in the House of Commons (McDorman, 2004: 104), but because members of parliament can ask questions to the ministers, it is possible to find these questions through the online search tool. Through the questions, it becomes evident that the government's policy at the time was to ratify the convention as soon as possible, but they also found that their primary duty was to protect the fishing stocks (Graham, 2002[11]; Carrol, 2002[12]). However, the MP's asking the questions also pointed to the Russians advantage that Canada was not able to make a claim; also, that the Vienna law of treaties Convention obliged Canada refrain from acting inconsistently to the UNCLOS and that the Bill C-98 Oceans Act harmonized rules and boundaries to the convention (Caccia, 2002). Considering that all requirements in amending the law to fit with the UNCLOS was in place in 2002, it points towards it being the ratification of the UNFA by the countries of the European Union that removed the last barrier to ratification. However, the press release announcing the ratification does not mention fish. Instead, it is about the possibilities of claiming the continental shelf (McDorman, 2004: Appendix), which points toward the territorial question playing an important part of the reason for ratifying.

While the Canadian ratification process showed that it was not the Russian claim that made the Canadian Government ratify the UNCLOS, it also showed that the reasoning behind the ratification was based on concerns of establishing the outer continental shelf, why it seems certain to assert that the issue did rise on the

[11] Minister of foreign affairs in Canada in 2002
[12] Parliamentary Secretary to the Minister of Foreign Affairs

agenda amongst political decision makers. It becomes interesting to look into the Danish ratification process to see, whether it has been affected by the Russian claim or by other causes.

Denmark ratified the convention on November 16, 2004 – a while after the Canadians. As for the Canadian ratification process, in order for the mechanism to be in place, the documents enlightening the process need to point towards arguments for ratification based on the possibility of creating a submission or point to the Russia's submission. The answer is not simple, as many considerations need to be taken into account when ratifying international treaties and conventions. The evidence points towards a process that were driven by the prospective of claiming especially the territory north of Greenland in the hope that the area would contain a vast amount of resources, while it came to a halt due to issues between Denmark and Poland of what delimitation principle to use (Gorski, 2005: Abstract).

The first mentions of the possibility to extend the continental shelf in public records like newspapers and scientific journals appears from 1997 and onwards. It appears in a search in the Danish collection of newspapers, *Infomedia*, and the library databases for Copenhagen University and Aarhus University on words like "Law of the Sea" or "Continental Shelf"[13]. This method gives two types of evidence: account evidence as well as trace evidence. The account evidence gives a perspective on what scientists and public voices thought of the idea at the time without the bias of time altering the memory. The trace evidence by its mere presence provides an insight into when the issue began to appear on the agenda. The reasoning behind is to map whether it was members of the epistemic community or decision makers, who drove the process. For the mechanism to be present, it does not need to be the epistemic community that initiates the issue, but could be a strong indicator for the next stages.

In 1997, Jørgen Taagholt from *Dansk Polarcenter* wrote a commentary brought in *Polarfronten*, which highlights that more countries were expected to ratify the convention after resolving the sea mining- issues. The possibility to claim the outer continental shelf beyond 200 nm should give an incentive to develop a strategic approach to polar research, as the international commission to consider the submission would expect thorough research to back the claim, which could take years to gather (Taagholt, 1997: 11). Also, former minister of Greenland, Tom Høyem, points toward the need for decision makers to take action on the research front and by ratifying the UNCLOS (Høyem, 1997). Jørgen Taagholt also reveals that the Danish Ministry of Foreign Affairs had been in contact with him in March 1997 about the need for scientific data, why his commentary

[13] The search was in Danish: "Havret", "Havretskonventionen" or "Kontinentalsokkel" in full text, not just headline. One problem with this type of search is that not all articles can be found in online form, why they might not appear in a search. Therefore, I have used the snowballing approach, so if an article provided a useful reference, I followed it. This approach was not taken in the Canadian case, as it has not been possible to gain access to the Canadian newspaper databases.

could have been the element setting things in motion (Taagholt, 1998: 254). Furthermore, he provides the first notion of when Denmark was supposed to ratify the UNCLOS, which in 1998 was expected to be in the next 2-3 years (Taagholt, 1998: 248). While it in the late 90s looked quite straightforward, it would take the Danish Government six years to ratify the convention.

To give an insight into the causes of delay for the ratification process, the online search tool for parliamentary official documents is used find information on the reluctance to ratify. In the Danish case, it was not a dispute on the ratification of the UNFA, as the Danish Government had already prepared the legal framework in 2001 (Udenrigsudvalget, 2002). The former Prime Minister Poul Nyrup Rasmussen revealed that the government was looking into the possibility to create a submission on the continental shelf north of Greenland, but he also stated that the ratification process had come a halt due to maritime delimitation issues with Poland (Rasmussen, 2001). The problem was that they each relied on different principles for delimitation; Denmark wanted to use the median line principle for delimitation, while Poland adhered to the equitable principle[14] (Gorski, 2005). If Denmark ratified the UNCLOS, it would have to follow the rulings from the International Court of Justice (ICJ) in case the parties could not reach an agreement. The Danish Government feared that a ruling might be in disadvantage of Danish interests, why the ratification process came to a halt (Udenrigsudvalget, 2003). This issue was already settled in 2001, when the ICJ accounted for their practice on the issue, which confirmed the use of the median principle. In a document sent to the Foreign Affairs Committee[15] during the legislative process of enabling ratification, the former Minister of Foreign Affairs, Per Stig Møller, stated that there were still ongoing consultations between Denmark and Poland on the delimitation of their exclusive economic zones (Udenrigsudvalget, 2003).

The issue concerning the ICJ was solved, but the delimitation issue with Poland was still ongoing, when the ratification process was initiated in early 2003. The timeline suggests that the sequence in which the submissions, recommendations and ratification happened could provide an explanation. The Russian submission was delivered to the CLCS on December 20, 2001, the recommendations were adopted on June 27, 2002, and the legislative process in Denmark was initiated in late January 2003. In this perspective, the Russian submission could have been a driver for initiating the ratification, but according to sources in the Danish Ministry of Foreign Affairs, the Russian submission was expected (Annex 2: P1.1). The issue was getting all parts of the Kingdom of Denmark to agree to the UNCLOS. While the Danish legislation was more or less in place, it would also involve changes in legislation at the Faroese Islands and in Greenland. The legislative process in Denmark was initiated in early 2002 with reference to the ratification being valid for the entire

[14] Which considers geographic, geophysical and proportionality calculations, whereas the line equidistant from the shores of neighboring states gives the median line.
[15] "*Udenrigsudvalget*"

Kingdom of Denmark, why it needed to be approved by both the Greenlandic and Faroese parliaments (B 75, 2003). While the Faroese government approved the ratification in April 2003, it took a little longer to settle the legislative process in Greenland with approval on December 8, 2003 (EM 2003/147) and the last amendments to the legal basis in May, 2004 (Landstingsforordning nr. 4, 2004).

It is certain that the prospect of extending the limits of the continental shelf was a major driver for the Danish Government in ratifying the UNCLOS, but they would have initiated the ratification process at some point regardless of the Russian submission. The prior confidence can be updated on the territorial issue arising on the political agenda, but the Russian submission did not work as a shock.

To sum up, the prior confidence was low, as the mechanism has never been tested before. There is found enough supporting evidence to suggest that the confidence can be updated, as there is a match between the characteristics of the scientists and civil servants working the project and the definition of the epistemic community. In addition, the evidence shows that the territorial issue arises on the agenda in both Canada and Denmark, but only circumstantial evidence in regards to the timing of events suggests that the Russian submission had impact on the ratification process in either Canada or Denmark.

5.3 Diffusing ideas and framing the issue

In this step of the mechanism, the ideas from the epistemic community diffuse transnationally through exchanges between colleagues, and produce a frame to set the context for understanding the issue. It means that the interpretation of the underwater ridges diffused between scientist from Canada, Denmark and Russia through different types of information exchanges and science collaborations. These interactions take part in creating a frame to understanding the issue. In this case, it enables the interpretation of the Lomonosov Ridge as natural extensions of the Eurasian and Amerasian continental shelves and that it is a submarine elevations, why the delimitation can go beyond the 350 nm line. This interpretation of data makes it possible for Canada, Denmark and Russia to lay claim on almost the entire seabed under the Central Arctic Ocean. However, as funds are provided from the decision makers, it could affect the interpretation of data in favor of their political goals. In the case of *Search and Rescue*, the diffusion and framing effect could be unfolded due to the accessibility of the Arctic Council document, but the submissions are in large parts confidential and internal documents are not publicly available. Therefore, the theoretical certainty is low, as the diffusion and framing can be hard to find, but it does not mean that is was not there. If evidence is found of two competing frames and the frame provided by the epistemic community is adopted, the theoretical uniqueness is high, why it can be possible to update the prior confidence, as this is low.

Transnational diffusion of ideas are hard to trace, but by listing the science projects that each country participated in, it enables the argument that the diffusion effects were present as the framing of the issue was developed. This part of the analysis goes in-depth with the spreading of the understanding that the Alpha, Mendeleev and Lomonosov Ridges are natural extensions of the Amerasian and Eurasian Continental shelves and that the ridges are submarine elevations rather than oceanic ridges or submarine ridges.

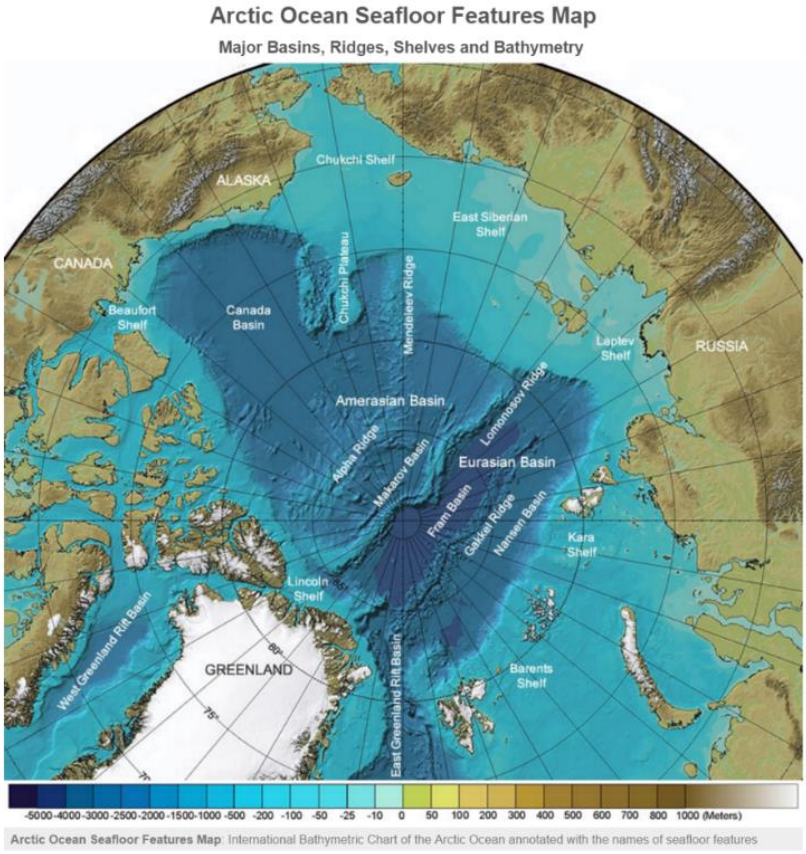


Figure 10: Arctic Ocean Seafloor Features. Source: IBCAO, 2012

While the Alpha Ridge is important to both the Canadian and Russian Submission, the Mendeleev Ridge only concerns the Russian submission and the Lomonosov Ridge is important to the all three submissions (See fig. 10). Therefore, the focus in this analysis is the Lomonosov Ridge as it holds the key to claiming the North Pole, while the Alpha and Mendeleev Ridges are included if necessary to understand the effect. The first frames for understanding the complex nature of the seabed came with the Russian submission in 2001. It is not possible to find evidence of, how the Russians interpreted the data in 2001, as the submissions are confidential, but the map (fig.11) on the submitted area shows that Russia considers the Lomonosov Ridge a natural extension of its own continental shelf. In addition, the only possibility to extend a claim beyond 350

nm in case submarine elevations and because the Russian claim stretches fair beyond the 350 nm line[16], they must consider it such, which provides the first frame.

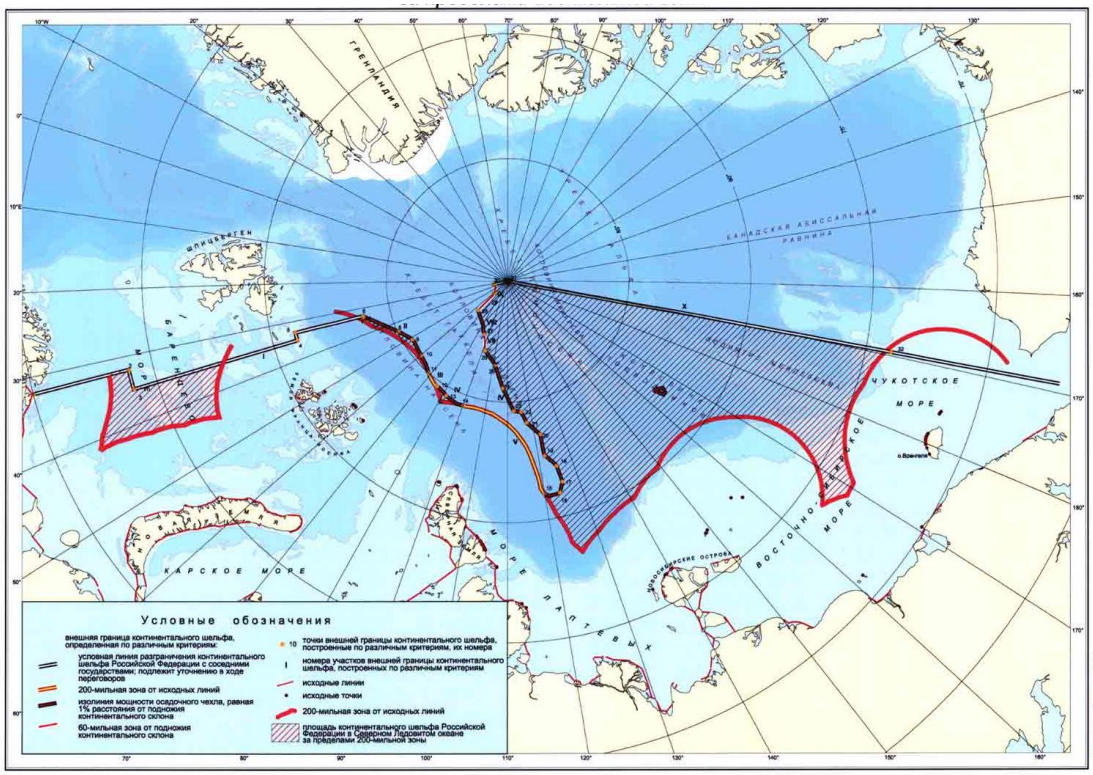


Figure 11: The 2001 Russian Claim. Source: Russian Federation, 2001

The other frame is evident through the US' response to the Russian Submission. They find that neither ridge (Alpha, Mendeleev or Lomonosov) is a natural prolongation nor could it ever account as being a submarine elevation. In particular, they state that the Alpha and Mendeleev Ridges has volcanic features of oceanic origin and is not part of any state's continental shelf and that the Lomonosov Ridge is a freestanding feature (US Notification, 2002). The recommendations from the CLCS in 2002 was that according to the materials provided in the submission or state of scientific knowledge, neither the Lomonosov Ridge nor the Alpha-Mendeleev Ridge complex could be considered submarine elevations. The CLCS also recommended that Russia should make a revised submission (Russia executive summary, 2015: 5). In both recommendations, it seems like the Russian framing did not succeed, in contrasts to the one from US. It is important to note that the reference to the state of materials or scientific knowledge, which indicates that it was not possible to make final recommendations, as the data did not show either-or. This provided the baseline for the scientific studies from both Russia, Canada and Denmark, as they had to prove that the ridges are natural extensions

[16] On the map, the red line is the 200 nm EEZ boundary and the distance between the EEZ and the North Pole is far more than the distance from the red line and into shore, why it is safe to say that the claim extends beyond 350 nm

of their continental shelf and all countries would gain most if the ridges have the character of submarine elevations.

As mentioned in the section 5.2, the scientists of all three countries had national epistemic communities, but during time it became transnational in character due to the various joint research projects, joint publications and collaboration on interpretation of data (Annex 2: P2.1, See below).

Table 3: Research cooperations

Survey	Date	Lead	Participation
Project IODP\ACEX	2004	RUS	
Pilot	2004	DK	
Arctic 2005	Summer 2005	RUS	
LORITA	Spring 2006	DK	CA
Bathymetric/Seismic Survey	2007	CA	
LOMROG I	Summer 2007	DK, SV	CA, RU
Project Cornerstone	2008	CA, DK	
Joint Survey - Bathymetric and seismic surveys	2008	CA, US	
ARTA	2008	CA	
LOMGRAV/LOMBOG	Winter 2009	CA, DK	
LOMROG II	Summer 2009	DK, SV	CA, RU
Joint Survey - Bathymetric and seismic surveys	2009	CA, US	
Shelf 2010	2010	RUS	
Joint Survey - Bathymetric and seismic surveys	2010	CA, US	
Joint Survey - Bathymetric and seismic surveys	2011	CA, US	
LOMROG III	Summer 2012	DK, SV	
Bathymetric and seismic surveys	2014	CA	
Bathymetric and seismic surveys	2015	CA	
(The Commission on the Continental Shelf, 2014, Canada's Extended Continental Shelf Program, 2016, All-Russian Research Institute of VNIIOkeangeologia, 2010			

While each program began with national research trips, collaboration amongst the countries quickly started to expand, especially between Canada and Denmark. The Canadian and Danish scientists joined forces in 2005 as the GSC (CA) and GEUS (DK) signed a memorandum for cooperation on the Lomonosov Ridge north of Greenland (The Continental Shelf Project, 2005). There has been regularly contact between all countries and from 2007-2013 an annual workshop was held to discuss the collection of data and differences in interpretations of data. In the beginning, these workshops were held between Canada, Denmark and Russia, but later on Norway and the US joined (Annex 2: P2.2). Sources in the Danish Ministry of Foreign Affairs reveal that the coffee-breaks were also used to discuss current national interests at civil servant level, as representatives from the Foreign Ministries started to join the discussions from 2009 (Annex 2: P2.3; Riddell-Dixon, 2011: 374). Furthermore, on the Arctic 5 meeting in Canada in 2009, the five Arctic coastal states decided to

create an Arctic Regional Hydrographic Commission under the International Hydrographic Organization (IHO). The states meet annually to exchange progress on research in the Arctic Sea to increase the science collaborations between the Arctic states (Udenrigsudvalget, 2010).

However, some scientists still disagree to the frame (Carpenter, 2009; Byers, 2014: 93). One of the major issues is that it is not possible to create a debate amongst scientists on the interpretation of data from the submissions, as the confidentiality measures prevent outside scientists from evaluating the data. Nevertheless, while the US objected the Russian frame in 2002, this had changed a decade later. When Denmark handed in their submission in 2014 and Russia resubmitted their Arctic claim in 2015, the US did not object to the commission. Furthermore, the chair of the US Continental Shelf Task Force, Margaret F. Hayes wrote that the Arctic geology is more complex and unsettled than what the US notification in 2002 perceived it to be (Hayes, 2010: 475).

This point towards a diffusion and framing effect as Russia, Canada and Denmark agreed to this interpretation and managed to convince the US. On that ground, it seems plausible to assume that the epistemic community provided the frame to the political decision makers and that the frame was developed from within the epistemic community, why the prior confidence can be updated.

5.4 Facilitation entry and defining state interest

In this stage of the mechanism, decision makers facilitate entry for the epistemic community to influence the definition of state interests. In this case, decision makers depend on the epistemic community to create the base for submissions to the CLCS, but decision makers could be inclined to take control of the learning process. By either meddling with the interpretation of data in relation to the provided frame or by wanting to set other policy goals than what the epistemic community provides, the influence of the epistemic community on policy choices could decline. However, due to the high saliency of the issue, it can be difficult to get the information, why the theoretical certainty is low. However, the theoretical uniqueness is high, because if decision makers say they took control, it is highly likely what happened, why it can be possible to update the confidence.

5.4.1 The Preliminary submission from Canada 2013

Because Canada ratified the UNCLOS in December 2003, their submission deadline was in 2013. The submission was on the continental shelf in the Atlantic Ocean, but it provided preliminary information on the Arctic submission, stating that the continental shelf of Canada in the Arctic Ocean extends beyond 200 nm and for the Alpha and Lomonosov Ridges beyond the 350 nm constraint (Preliminary information, 2013: 2).

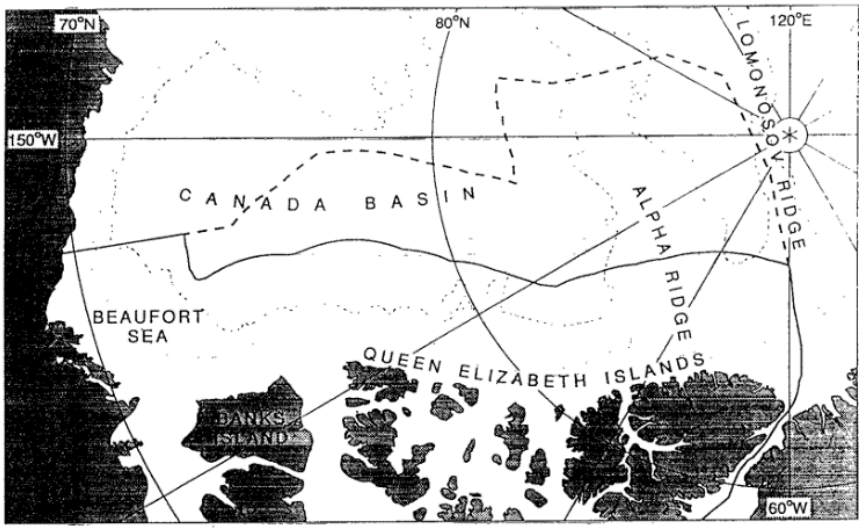


Figure 12: The expected Canadian claim. Source: Macnab and Monahan in Taagholt, 1998

The executive summary for the Canadian submission only notes that a partial submission for the Arctic sea will be submitted later on (Government of Canada, 2013). Fig. 12 shows what the maximum expected claim was in 1998, but even from the beginning it did not include the North Pole (Taagholt, 1998: 252). After years of research, the Canadian government still hold their cards close, but the expectations to the claim from outside the government project is quite close to the initial expectations (fig. 13).

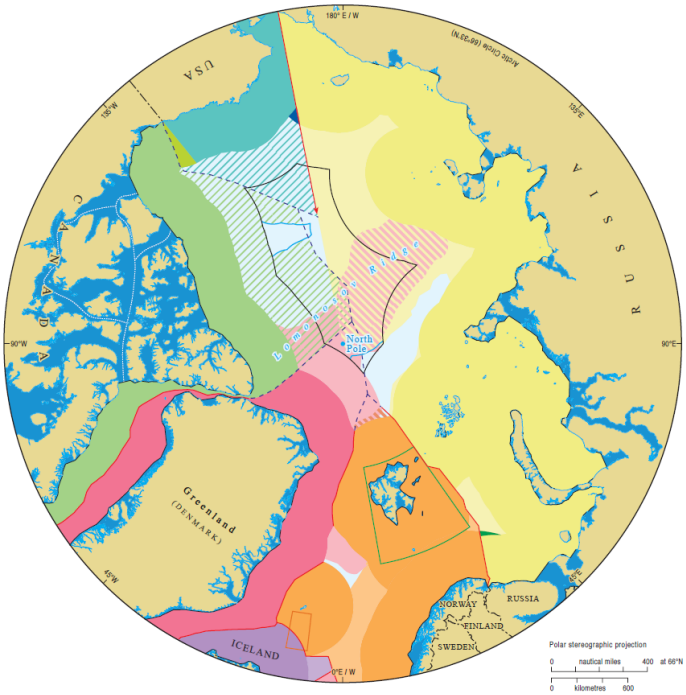


Figure 13: Maritime Jurisdiction and boundaries in the Arctic Region. Source: (IBRU, Durham University, 2015)

The analysis points to the epistemic community taking control of the policy goal, but in the days before the submission were due, this drastically changed as the Canadian Prime Minister at the time, Stephen Harper, took control of the process. The Canadian newspaper, The Globe and Mail, revealed that the Canadian Prime Minister staged a last minute intervention, when the final submission was sent to him close to the deadline. Allegedly, Harper asked the bureaucrats to create a more extensive claim (Chase, 2013). This is supported by the statements from the former Minister of Foreign Affairs, John Baird, who in a press conference on the partial submission stated that the bid for the Arctic Ocean would be delayed until scientists could gather the sufficient data and that his government intended to lay claim to the North Pole. When asked about the delay, the answer was: "*I think in many respects, you can say we ran out of time*" (Chase, 2013). It could be true, but as shown in table 3 above, the continental shelf program did not conduct any surveys between 2011 and 2014, why it seems rather plausible that the last minute interference happened. Ron MacNab, one of the lead scientists in the first study from 1994, unveiled that following the decision to delay the submission for the Arctic Ocean, the members of the continental shelf program were stunned and it triggered the departure of key members (MacNab, 2015).

In changing the policy goal and asking the epistemic community to create a claim including the North Pole, it shows a clear example of how decision makers can take control. As explained in section 3.3, decision makers take control depending on structural realities and decision makers' own intentions and political support. In this case, as the delay on the submission happened at the last minute, there is no evidence pointing towards structural realities such as lack of time or money. Instead it point towards it being the act of the decision makers' own intentions, as the political elite surrounding the prime minister must have known about the expected claim. As quoted from Michael Byers, who is the Canada Research Chair in Global Politics and International Law at the University of British Columbia: "*He didn't want to be the prime minister who surrounded Canada's claim to the North Pole"* (Sevunts, 03.05.2016). After elections in 2015, the new Prime Minister, Justin Trudeau, could have put a halt to the continued research, but he continues the line of the former Prime Minister. The submission on the Arctic Ocean is expected to be handed in to CLCS in 2018 (Sevunts, 08.05.2016).

5.4.2 The 2014 Danish submission on the area north of Greenland

While the first GRASP project had many stakeholders, the Danish Continental Shelf project was rooted in the Ministry of Higher Education and Science and directed by a committee with representatives from the Prime Minister's Office, the Ministry of Foreign Affairs, the Minister of Finance and the Faroese and Greenlandic self-rule. The institutions responsible for collecting data are state institutions, which are decoupled from the ministerial hierarchy, but because of the composition of the steering committee, the process is still relatively close to the political decision makers. When asked about the considerations behind the claim, the Danish

MFA states that the intention from the beginning was to let the data guide the claim rather than taking political considerations into account (Annex 2: P3.1). The submission to the continental shelf is a sensitive issue even if the claim is supported by scientific evidence, why the official sources might conceal information. On that ground, this analysis looks into the "footprints" left during the years of preparing for the submission of the area north of Greenland to question, whether the picture provided by the Danish MFA is consistent with other pieces of evidence.

The first map of the presumed area shows that scientists did not consider the Lomonosov Ridge to be a submarine elevation at first, as the area only stretched to the 350 nm boundary (Annex 5: 1998). This changed in the initial phase of the preparations to send a research expedition to the area in 2003. Hauge Andersson from *Dansk Polarcenter* said to Politiken in 2001 that the North Pole might be on Danish grounds, but that nothing was certain (Schilling, 2001). After fieldwork had been conducted in 2004, the possible claim area grew to entail the area around the North Pole and stayed that way at least until late 2009 (Annex 5: 2005, 2009). Furthermore, statements from the Danish MFA in the Danish press show that the idea of claiming the area around the North Pole was present, but also that the delimitation principles guided the claim. The ministry's expert on the law of the sea, Jørgen Lilje-Jensen, said to a Danish national newspaper that it would be easy to negotiate with the Canadians as it was merely to extend a median line into the Arctic Ocean (Hundevadt, 2005). According to Christian Marcussen, they used the median line principle to determine which areas to examine, as it would be impossible to survey the entire Lomonosov Ridge because of the costs. However, he says that in retrospect, it was not the best choice to speculate on possible delimitation lines, as this is was job for the diplomats (Annex 2: P3.2). In addition, as the Russian submission in 2001 was based on the sector principle rather than the median line principle, it would still require negotiations to set delimitation lines (Hundevadt, 2005).

Denmark made a submission claiming the largest possible area based on scientific evidence, which is in accordance with the principles of the UNCLOS (Annex 2: P3.3). Nevertheless, there might be an alternative explanation to why the final claim extended further than first pictured. The Danish journalist, Martin Breum, claims that Denmark and Canada had an agreement to keep their claim in accordance with the median line, when Stephen Harper chose to delay Canada's submission on the Arctic Ocean (Breum, 2014). This broke the agreement and according to his sources in "the system", the Danish Government extended their claim in spring 2014 from around 150.000 km^2 to at least 400.000 km^2 (Breum, 2014). This is supported by Canadian sources (MacNab, 2015; Mered, 2014; Mered et al., 2015). The final submission did not only extend to 400.000 km^2, but to 895.000 km^2. Even if no evidence confirms the narrative directly, there is nothing that contradicts this – rather the contrary. The maps and statements from people connected to the project are

consistent with the narrative that Denmark at first planned to make a submission with the median lines as the boundaries, but then changed course[17]. However, as one of the lead scientists in the project points out: There never was any talks about an agreement with the Russians (Annex 2: P3.4).

This creates a peculiar case for the mechanism as rather than letting jurisdictional and political customs guide the claim, decision makers in Denmark opened up to extending the claim to its full potential. By going away from letting median lines guide the claim, the decision makers could have allowed the epistemic community to set the goal by getting to control both content and goals. High saliency projects of these kinds are never entirely out of the political scope, but if the learning process on facilitating the final claim was driven by the epistemic community, it is not an issue. If the decision makers actually did step away from the median line principle due to discontent with Canada's actions, they actually gave up control rather than take it. The incentive to take control is, as mentioned for the Canadian case, reliant on either structural realities, the decision maker's own intentions or political support. There is nothing which point towards structural realities or political support as the Danish parliament showed unity on supporting the submission (KNR.gl, 2014).

If something other than the Canadian actions could have caused the extension, it would be the case of the delimitation with Norway from the 1960's. Denmark and Norway came to an agreement based on the median lines leaving the *Ekofisk*-oil fields with some of the largest oil- and gas deposits in the polar region to Norway (Hundevadt, 2005). While Stephen Harper did not want to be the one, who gave up the North Pole for the Canadians, no Danish minister wants to cause a new *Ekofisk*-scandal. While officials have made the reference several times in the early-mid 2000's, recent surveys show that most of the oil and gas in the Polar area lies within the EEZ's (Markussen, 2013), why it should not matter (Hundevadt, 2005). However, as for the *ekofisk,* the future is uncertain. Nevertheless, as Christian Marcussen points out, the only political in the process was the mandate to extend the claim as far as data would allow, because the complexity of the issue hindered decision maker interference, as they cannot interpret the data (Annex 2: P3.4). The theory on epistemic communities does not assume that for epistemic community influence to be high, they have to alter the perception of the decision makers; if the goals and content provided by the epistemic community is in line with decision makers' interests they are probably more inclined not to take control over the learning process.

5.4.3 The 2015 Russian submission on the area in the Arctic Sea

When looking into the relationship between the epistemic community and decision makers in Russia, it is hard to trace, whether the decision makers took control of the process, because of the language barrier. The first Russian submission was based on the sector principle rather than the median line principle. By following

[17] This view has been developed and confirmed with sources that does not wish to be cited.

the sector principle, it was possible for Russia to lay claim to the North Pole compared to if they had used the median line principle (See below).

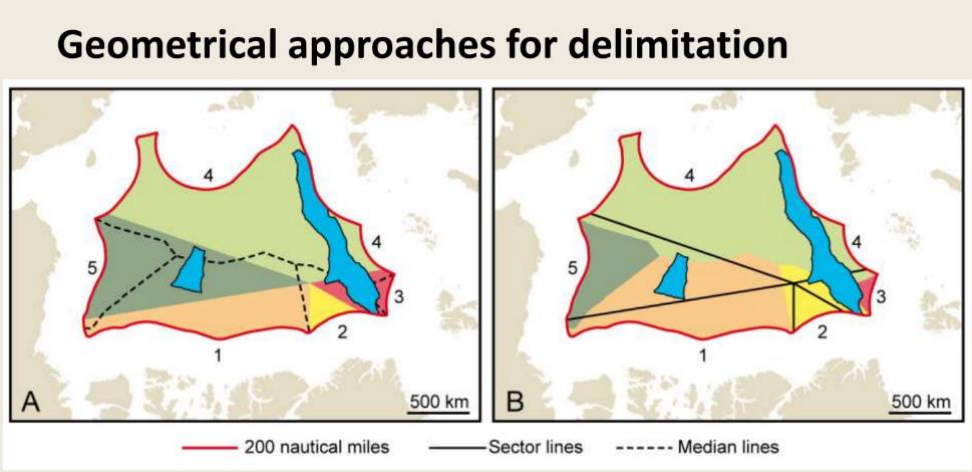


Figure 14: Geometrical Approaches for Delimitation, 1: Canada, 2: Denmark, 3: Norway, 4: Russia, 5: US. Source: Markussen, 2013: 55

The 2015 submission did not divert much from the first submission from 2001. This was noteworthy in itself, because the Russians could have extended the submission to the Greenlandic EEZ (Marked by the medium blue color in fig. 15). There are no rules on, whether a state has to submit the largest possible claim, but the Russian deviated from the original use of the sector principle in the revised claim.

Figure 15: Russian Claims. Yellow: overlap 2001/2015 claim, Green: 2015 claim, Red: 2001 claim. Source: IBRU, Durham University, 2015

As pictured in fig. 15, the green area shows what was added to the submission, and it becomes clear that the Russians just wanted to extend their claim to contain the North Pole, and not the Greenlandic EEZ. Even if it

shows restraint from the Russian side, it indicates that decision makers took control in the process of formulating the policy goal. For the Russians, the North Pole is an important symbol, which they have shown with acts like the flag-planting on the North Pole in 2007. Not claiming the North Pole could have political consequence as the Russian decision makers could face political repurcussion from the national elite as the Arctic identity is important in Russia (Nilsson, 2014: 36).

5.4.4 Recap: Taking control

This case analyzed how decision makers facilitated entry for the epistemic community in each country and what incentives, if any, there was for political decision makers to take control over the learning process. As the submissions are evaluated by a commission of experts in geology, geophysics and barythmics, and not by voters or other political parties, decision makers could not take control of the content of the claims, as these build on highly specialized knowledge. However, it could be argued that Stephen Harper took control over the content, when he delayed the submission and ordered new research, but he did not interfere with the research itself. Decision makers could then take control of policy goals, which they did in the Russian and Canadian case. In the Danish case, the answer to whether decision makers took control depends on the process, but as evidence points to a process driven by the scientific possibilities, the epistemic community was likely to have a high influence on the policy choice.

Table 4: Who took control?

	Canada	Denmark	Russia
Content	-	-	-
Goals	+	-	+
Influence	Moderate	High	Moderate

5.5 Costs of compliance

In this part, the decision makers consider the costs and benefits and if the costs are too big, either the policy choice will reflect it or it will be paused until the costs decreases enough to enable the choice. Domestically these costs could be mandates, bargains on other political issues, votes etc., while it internationally could be damaging to a country's reputation, strained relationships to allies or affect the country's political bargaining weight compared to other countries. In this case, the issue with this type of case is that even though the claim has been submitted to the CLCS, there are no internal working documents publicly accessible as even the claim itself is confidential. Therefore, the visible cost of compliance would lie internationally rather than in the domestic area, as other countries could object to them getting their claim considered or if it would put a strain on the relationship. A strained relationship between states could be problematic as the boundaries are to be

negotiated bilaterally between the countries, if overlap occurs. The theoretical certainty is low as the theoretical concept is unclear on what precisely can cause the costs of compliance to have an impact on the policy choices and even what the costs might be. However, on the assumption that nations will want as much land as possible, if found that the claims did not extend to their full potential, the theoretical uniqueness is rather high as no alternative explanations seems plausible. Most political decisions goes through considerations of costs and benefits, but rather than determining what costs could be bigger than the benefits, as this would be mere guesses, this part evaluates what kinds of costs that potentially could block or alter the submissions.

5.5.1 Median or sector lines

The analysis of the development of claims and political control showed that the Russians based their claim in the first submission on the sector principle. As the Russian submission in 2001 was the first submission to the CLCS, there was no previous examples or recommendations to support the claim, but while it diverted from the ICJ-practice of using median lines, it was still relatively new in 2001, why the use of the sector line principle was not controversial.

If Canada and Denmark really had an agreement to go by the median line principle, the Canadians did not hold their end of the bargain, when they announced that they were going for the pole. Stephen Harper must have thought that the possible ramifications from the international society did not outweigh the domestic costs of not claiming the North Pole. As for Denmark, the considerations of possible consequences for making a claim, that would overlap both the Canadian and the Russian claims, would probably have been focusing on the Russian reactions, as it was the Canadians, who first discarded the median line principle.

As for the Russian reactions, it should be viewed in the context of Ukraine. In 2014, the Russian annexation of Crimea forced the EU to lay heavy sanctions on Russia, which strained the relationship between Denmark and Russia. Therefore, it could produce a spill-over effect, which could create obstacles for the cooperation in the Arctic, as the relationship since Crimea has been tense. If Russia wishes to continue to cooperate with the Western states in the Arctic, they need to show that they are not aggressive in this area as well. However, forfeiting the claim to the North Pole would probably be a domestic cost that was to large considering the political environment in Russia.

5.5.3 A coordination game and ICJ practices

The Ilulissat-declaration was a response from the Arctic 5 to the world that Arctic Ocean governance would fall under the jurisdiction of the sovereign states or the UNCLOS (Ilulissat-declaration, 2008). This diminished the political costs of the delimitation issue, as they all agreed to respect international law in the distribution of territory. Another thing that could have diminished the costs was an agreement between Canada, Denmark and Russia, which stated that no state would object to the CLCS considering the submission of other states,

let the recommendation for one state take precedence over the other or let the recommendations prejudice the delimitation (Russia Executive Summary, 2015). Therefore, in the assessment of what costs their submission would have compared to the benefits, these measures could have provided the security to discard political considerations.

Another consideration that could have diminished the political costs relates back to the practice of the ICJ. When states have overlapping claims, they can negotiate the boundaries bilaterally or the ICJ settles the dispute. As mentioned earlier, the ICJ uses the median line principle and by comparing the overlapping claims from fig. 13[18] to the median lines, it becomes evident that incentives to negotiate is lacking. The only bargaining chip that Denmark holds to Russia is the North Pole, which holds an intrinsic value for both states. There is only a slim chance of finding resources, why there seems to be no material interest the area. The Danes would then have to consider what would be the most valuable – getting the North Pole or getting more territory. Depending on the final Canadian submission, the considerations regarding the Russia-Danish overlap also holds true to the Danish-Canadian overlap. While the Canadian side of the median line does not hold many resources, the Danish side holds the North Pole. As for the Canadian-Russian overlap, it depends on whether the Canadian claim ends at the North Pole, or if they also make a claim on the Russian side of the median line. Assuming, they only extend their claim into the Danish side of the equidistance line, the Canadians have no incentive to negotiate with Russia.

In that sense, in the choice between negotiating delimitiation bilaterally compared to ICJ-ruling, there is no incentive to negotiate boundaries other than by median lines. The security from the ICJ practice could have diminished possible tensions over the delimitation, as all states had agreed to respect international law in the Ilulissat-declaration. However, why would either country make claims outside the median lines, which could have affected the otherwise very successful cooperation in the Arctic Sea? The explanation could be found in domestic politics, which will be further explored in the discussion.

5.6 Subconclusion to the case of Submissions to the CLCS

In this case, finding the predicted evidence has caused some issues due to confidential nature of documents relating to the process. This creates an analysis influenced by low theoretical certainty, as the parts could have taken place, even if no evidence was found. However, as mentioned in the second section, if evidence with high theoretical uniqueness is present, it can be possible to update the prior confidence for each part as the uniqueness makes up for the lack of certainty. Because this way of presenting the possible connection between epistemic community and decision makers is new, the prior confidence in the mechanism itself is low, why updating each part is probable. However, on the matter of the mechanism as a whole, interesting

[18] While Canada has not yet made their submission, the inclusion of the North Pole was their reason for delay.

results present themselves regarding the political learning factor. The expectation was that the scope condition of high saliency should provide the decision makers with enough incentive to take control. In the Canadian case, the decision makers took control by altering the policy goals and in the Russian case, the decision makers also took control - but to restraint rather than maximize the submission. The Danish submission shows convergence between decision makers' incentives and results from the epistemic community, but no evidence of decision makers taking control over the claim in the final submission, why the process most likely has been driven by the epistemic community. It raises the question whether political learning is a factor in the mechanism or if it rather than saliency works as a scope condition. This is explored further in the following discussion.

6. Discussion of the theoretic framework and results of the analysis.

The purpose of this section is to discuss the empirical as well as the theoretic insights and results from the analysis. The discussion of the empirical results from the analysis will center around how epistemic communities can influence political decision makers in the Arctic and what might hinder the influence. The theoretical discussion will go further into the selection of cases, the confidence in the mechanism and a discussion of political learning and saliency.

6.1 Epistemic community influence in the Arctic

The Arctic is facing major changes in the decades to come due to the rapid climate changes. This creates major uncertainties in the Arctic area, which are technical as well as political in nature. The two cases provide an insight into how epistemic communities can gain influence in cases of both low and high salience. In Haas and Adler's original framework, epistemic communities has a role in policy coordination on technical issues (Haas and Adler, 1992: 371-372). Critics have argued that while the epistemic community can gain influence on issues with a more technical character such as pollution or military force employment, the mechanism seems less able to assess, where decision makers get information on basic issues in international relations (Krebs, 2001: 225). In the case of *Search and Rescue,* the nature of the issue made it a case of simple policy coordination between Arctic states on cooperation issues, why it has not been a high salience issue. In the case of *submissions to CLCS*, it is a case of territorial distribution being a policy coordination issue with a zero-sum outcome, why it has been highly salient amongst scholars working with the Arctic and in international relations in general. As the cases are characterized by a high degree of uncertainty on technical issues, but also cases of basic issues in international relations, they provide a unique insight into the synergy between epistemic community and decision makers.

That issues in international relations are characterized as both highly technical as well as politicized is an effect of globalization; we become increasingly aware of how these areas connect. Issues of a technical character like those related to environment and climate are more often than not transnational; natural phenomena that has nothing to do with the social construct of nation state jurisdictions. The solutions or choices to accommodate these issues are however political, as they reflect the actions of nation states or decision makers in these political systems. Cross (2012) argues that in a more globalized world, epistemic communities has growing importance in international relations (p.138), which becomes evident, if the epistemic communities are able to make the transit from influencing technical issues to issues of a political character.

In addition, there can be different communities providing different types of information with different motives to why they do it (Ibid: 142). However, the Arctic is still an emerging subject on the political agenda and conducting research in the Arctic Ocean is both difficult and costly. Therefore, the epistemic communities in

these areas are often a result of governmental efforts through the Arctic Council or continental shelf projects. This creates a situation where it becomes harder to trace the actual synergy due to the internal nature of the collaborations. However, it also provides a setting, which isolates the relationship between the epistemic community and decision makers from other actors, why the differentiation between epistemic communities and other types of communities is more distinct.

The analysis of the *Search and Rescue*-case shows how an epistemic community formed under institutionalized settings can have an effect on political decision makers by providing policy goals and measures to reach that goal. In this case, the decision makers adopted the recommendations with only few exceptions. However, the epistemic community is treated as a solid entity, why different characteristics of epistemic communities and how these relate to the degree of influence has not been examined. Cross (2012) hypothesizes that an important factor in epistemic community success is internal coherence (p.138) and by working through the Arctic Council, the epistemic community develops a more coherent structure. The lack of incentives to take control provides one explanation to why the epistemic community could reach a high degree of influence. However, there is a good case for the possibility that the institutionalized channels of "open access" to decision makers in the Arctic Council could provide a complementary or alternative explanation. It does not contradict the mechanism, as the *submission to the CLCS* shows that even if an epistemic community is institutionalized, internally coherent and have open access, it cannot hinder decision makers in taking control. However, it does suggest that further research into the relationship between the political learning factor, institutionalized access channels and internal coherence could reveal more about how the "facilitating entry" part of the mechanism works.

The case of *Submissions to CLCS* provides a valuable insight into how the political learning factor works. As the initial hypothesis was that high saliency provides the incentives for decision makers to take control of the political learning process, the case should show that the decision makers in Canada, Denmark and Russia took control of the issue. This is not the case, why it suggests that saliency in itself is not incentive enough.

6.2 The mechanism and political learning

While most studies on epistemic communities have been traditional case-studies, only a few has used Haas and Adler's original policy evolution process and notion of political learning, which they found to be an integral part to understanding how epistemic communities insert influence on political decision makers (Dunlop, 2009). Theoretical revisionists like Dunlop (2009) criticize their notion of political learning by arguing that it tends to overestimate the importance of the epistemic community and its ability to shape decision makers intentions, why a more refined concept of political learning using the control factor is beneficial (p.290). The analysis in this thesis is structured on a mechanism developed from the four policy stages from Haas and

Adler, but it also considers political learning as a factor of control at a certain stage of the mechanism. This diverges from Dunlop's study, but it allows for a more detailed insight into the synergy between the epistemic community and decision makers. While her study mainly focuses on types of political learning, this analysis is focused on the control part. The case of *Search and Rescue* seems to follow the mechanism quite straightforward, while the case of *Submissions to CLCS* shows that the analysis of epistemic communities in high salience cases are more complex. It shows that by including the political learning factor in the mechanism, it becomes possible to account for the divergence between epistemic community influences. If the political control factor had not been a part of the mechanism, the analysis could have underestimated the influence of the epistemic community.

6.2.1 Domestic structures

If saliency in itself is not enough incentive to take control, the political learning factor points towards the incentives of either structural realities or the decision makers' own intentions or political support, why it turns from the international arena to the domestic. Haas and Adler (1992) suggested that the policy evolution process has both a domestic and international level, why using Robert Putnam's description of international politics as a "two-level" game of both international and domestic policies is beneficial. According to Putnam, the national level consists of domestic groups pursuing their interests by pressuring governments and in turn, politicians seek power by constructing coalitions amongst these groups. At the international level, the national government seeks to satisfy domestic pressures while minimizing consequences of foreign developments (Putnam, 1998: 434). They argue that epistemic communities fit into these two-level games as:

> *The domestic game therefore refers to how **expectations and values enter into the political process** through active participation of domestic and transnational epistemic communities and how through the **policy process these ideas help define the national interest**, which then becomes a conceptual and normative input to the international game. (Haas and Adler, 1992: 373)*

This provides an argument to why domestic structures rather than saliency could be the determining factor in the analysis of why decision makers take control of the political learning process. While epistemic communities can help define national interests through their expectations and values, so can other types of communities. In the two-level game theory, the negotiator has a utility maximizing behavior on the international scene constrained by domestic structures and interests, which creates certain win-sets that indicates equilibriums of utility for each nation (Putnam, 1988: 453). In that sense, the submissions to the CLCS from Denmark and Russia along with the expected submission from Canada can be seen as each country's win-set. Especially for the Canadian and the Russian submissions, and the way decision makers took control of the

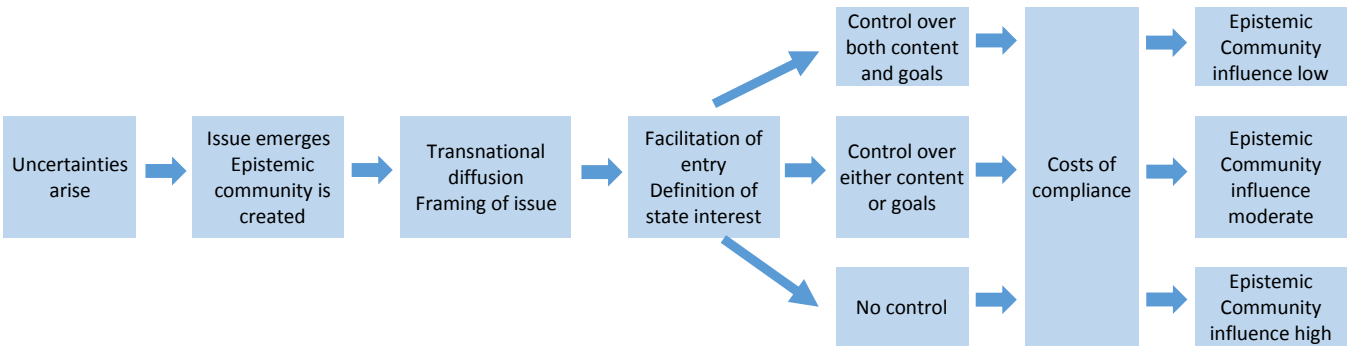
policy goals to encompass the North Pole, show that the North Pole is of great importance in the Arctic territorial distribution game. However, the North Pole has no material value as there are no resources surrounding it and the control over the seabed does not give control over the waterways. However, it can be seen as a symbol of an Arctic identity, which is important especially for Canada and Russia (Steinberg et al, 2015: 24).

That symbols can be an incentive for decision makers to take control shows one of the clashes between epistemic communities and decision makers, because the epistemic community relies on data and science to provide knowledge to form the policy choices, whereas symbols are social constructs. The North Pole is only important because it is a symbol of the Arctic identity, but that does not mean that it cannot alter decision makers' actions. That symbols in itself can be enough to affect decision maker's interests is an important insight when accounting for domestic structures as these are often analyzed in comparison to more materialistic aspects rather than identity measures. With regard to the maritime delimitation in the Arctic, the importance of the North Pole to the national identity can become an obstacle to overcome, but there seems to be nothing pointing to neither Canada nor Russia breaking the Ilulissat-agreement. However, there are different delimitation principles and while the Russian claim is already very close to the sector lines, the Canadian government have maintained a partial reliance to the sector theory (Steinberg et al, 2015: 24). This could put a pressure on Denmark, but the knowledge of the ICJ's common practice in using the median line principle in delimitation issues could counterbalance a Russian-Canadian wish for applying the sector-principle.

6.2.2 Revising the mechanism

However, the internal character of the epistemic community in the two cases makes it difficult to successfully trace whether an idea or a choice came from decision makers or the epistemic community. Nevertheless, the political learning factor provides a way to assess, whether the epistemic community could influence policy-decisions even if decision makers take control in either the establishment of content or defining the goal. The paragraph above argued that domestic structures rather than saliency could provide the incentives of decision makers to take control, which suggests a revision of the causal mechanism to incorporate political learning as a factor, which leads to different roads for the final outcome:

Table 5: Revised Causal Mechanism



In examining a case where the mechanism seems to have broken down as the epistemic community have had no influence, this mechanism rather than Haas and Adler's policy evolution process becomes fruitful to understand, why they did not gain much influence and what could have been at stake. Additionally, the parts in the mechanism allow a better assessment of epistemic community influence, as the test of each part makes it possible to see, whether the epistemic community had influence, even if decision makers did not facilitate the entry in the third part of the mechanism. Did they find the uncertainties, get the issue on the agenda or were they able to provide a frame to understand the issue? In that way, even if the epistemic community is not allowed entry to form state interests, they can still be an important part of the puzzle to understand policy choices.

6.3 Epistemic communities as Science Diplomats

The epistemic communities are important in international relations theory, as they have the power to impact different aspects of international policy coordination and the construction of world politics (Sutcu, 2012: 243). Sutcu (2012) points to science as an important tool for public diplomacy as foreign policy makers recognize the epistemic community as an influential actor (p.246). It provides a possibility for countries to cooperate, even when the relationship is strained, because it is possible for the epistemic communities to provide the basis for reaching consensus between countries on technical and/or scientific issues, as science is perceived as free of national interests. However, as the analysis shows, decision makers can also provide possible frames, which can either contest or compliment the frame provided from the epistemic community.

Furthermore, it is important to consider domestic structures and national identity in the different nations as these might induce the decision makers to take control over either the goals or the content. An interesting factor is that it seems to depend on the judges of the policy choices. The case of *the submissions to the CLCS* suggests that in cases where the judges of the policy choice are peers of the epistemic community, decision makers cannot take control of the content. However, in most cases the judges of the policy choices are domestic actors from political coalitions, stakeholders or voters, why it becomes increasingly important to understand how the receivers of the policy choices act. If the domestic actors do not understand the issues due to the scientific complexity, it might be too easy to override or ignore the frames from the epistemic community, so even if there is consensus amongst decision makers internationally, the domestic structure can hinder an agreement.

7. Conclusion

Multiple studies have shown that there is a case for Science Diplomacy in international relations. However, these studies have shown that while Science Diplomacy is an established concept, no systematic studies have been found on how Science Diplomacy works and what the effect on policy choices might be.

This thesis accommodates the gap in literature by examining how and to what extent epistemic communities can influence policy decisions. This thesis provides an argument for, *how* Science Diplomacy can work, and that it can be highly influential on policy choices by establishing a connection between Science Diplomacy actions and epistemic communities, creating a mechanism based on existing theory and testing it systematically towards a large collection of empirical evidence.

Based on Haas' and Adlers' (1992) policy evolution process and Dunlop (2009) concept of political learning, I developed a mechanism for testing through a process-tracing analysis. The mechanism was tested on two cases. The case of *Search and Rescue* was a case of low saliency as it was a question of coordination, while the second case, *the submissions to the CLCS* was a case of high saliency as the distribution of territory is a zero-sum game. The initial expectation was that under circumstances of low saliency the epistemic community could be highly influential on the decision makers' policy choices, whereas conditions of high saliency lead decision makers to take control of goals and content, why the epistemic community would only have low influence on the decision makers' policy choices.

In the *Search and Rescue*-case, the analysis showed that there were two leads in how the agreement developed through the Arctic Council. Russia tried with great effort to introduce an instrument for search and rescue in the Arctic Council, but did not have success with the other Arctic States before the Ilulissat-declaration in 2008. However, at this time the Arctic Council was finalizing a comprehensive shipping assessment, the AMSA, which recommended the creation of a multinational agreement and posed several recommendations on what this should entail. While the Russians did get search and rescue to be a part of the Ilulissat-declaration in 2008 after being rejected in 2006, the extensive work of the epistemic community was already showing the need for an agreement. By testing a mechanism rather than conducting a traditional case-analysis, it has becomes possible to separate the two leads to examine, which one connects better with the final agreement, which was the epistemic community-lead. However, while the Russian efforts and the Ilulissat-declaration were part of the efforts to improve SAR-preparedness, the policy goal and content were to a high degree provided by the epistemic community. Not only did the process-tracing render probable that the epistemic community influence on the policy choice of the SAR-agreement, it also suggested that the use of the mechanism is a fruitful way to analyze the relationship between decision makers and epistemic communities.

In the case of *submissions to the CLCS*, the analysis showed that in cases of high saliency, the mechanism provides the possibility to detect variance in epistemic community influence. When the same scope condition, high saliency, is present, it should provide the decision makers with enough incentive to take control in Canada, Denmark and Russia. That is not the case. While revisionist process-tracing originally would "trace backwards" by comparing cases to see where the process derails, the use of Dunlop's (2009) political learning factor enables the assessment of where the process derails and why, as the question of whether decision makers taking (or not taking) control stands out. By applying the mechanism to the submission-processes of Canada, Denmark and Russia, it becomes evident that while the hypothesis expected all processes to show a low influence, the outcome was actually a moderate to a high degree of influence.

It was the process in Canada that was the most obvious case of decision makers taking control with the policy goals, as former Prime Minister, Stephen Harper, delayed the submission on the Central Arctic Ocean as he wanted the North Pole. In Russia's process, decision makers also took control, but with the contrary result. They made a submission, which showed a claim smaller than what was possible, which differed from Russia's otherwise aggressive territorial conduct in e.g. Ukraine, and shows decision makers taking control of the policy goal. In their cases, as decision makers only took control over policy goals, the influence of the epistemic communities is moderate. From the beginning, the mandate in the Danish case has been to claim the largest possible area that data would allow. While an agreement with Canada cannot be rejected, the actions of Stephen Harper reversed it anyways, why no signs of decision makers taking control of the process is showing. In that case, the epistemic community influence was high in the Danish process.

This contradicts the initial expectation and while decision makers did take control in some cases, it shows that high saliency in the international system is not enough. Furthermore, when analyzing cases of high saliency in foreign policy, it can be difficult to use process-tracing because much of the evidence is confidential, why the theoretical certainty of the different parts has a tendency to be low. However, in this case it is saved by findings of high uniqueness, which makes it possible to update the prior confidence to the mechanism. While the analysis showed successful in updating prior confidence to the mechanism, it also created questions to, what role saliency and political learning have in the epistemic community literature. The analysis showed that saliency does not provide enough incentives for decision makers to take control, but suggests that domestic structures or even national identity issues could be more relevant, when searching for possible incentives. In addition, in cases where the judge of the policies is scientific peers to the epistemic communities and not just the common person or voter, it is not possible to take control of the content, only the goal.

While the analysis in this thesis was conducted on issues on Arctic Ocean governance, the mechanism of how epistemic communities can influence decision makers seems as relevant as ever. This thesis provided one

way of analyzing Science Diplomacy by asserting that epistemic communities conduct science diplomacy actions. It offers a way to analyze the actions of science diplomacy actors in a systematic way in order to examine what effect they might have on policy choices. What is interesting is that by applying this theoretical framework, it suggests that Science Diplomacy can have implications that decision makers are not aware of, if just adopting the goals and content without thorough considerations.

While the cases tested in this thesis were on one area of Arctic research, the mechanism could still prove fruitful in other cases to understand the dynamics between science and politics. While science is getting an increasingly bigger role in policy choices, there are still decision makers for whom other measures to evaluate policies are adjacent like religious or ideological concerns. By testing the mechanism in these cases, it can provide insight to whether it is possible for the epistemic communities to affect decision makers by getting their attention on the issue, on the political agenda or by providing a frame from which to understand the issue. The theory of epistemic communities was developed to examine science in international relations, but it can also be applied on domestic policy choices, as the processes of the mechanism are much alike. Take Science Diplomacy and transnationalism out of the equation and the mechanism might as well describe a relationship between e.g. scientists or civil servants and ministers of the government. Where domestic structures and national identity could be influential on the international level, voting behavior or ideological ideas could be influential on the domestic scene.

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Annex 1: Presentation of Sources – Search and Rescue

Presentation of the sources: Interviews and personal communications Search and Rescue	
The interviews for this case was conducted by phone, but the reception was bad in both instances and while we tried to fix the reception several times, it did not help. Therefore, some blanks to the transcription has occurred, but these are not major and does not pose a problem to the understanding. The interviews were conducted as semi-structured with an interview-guide based on what insight where lacking in my analysis, but I found that by letting them talk freely, the memories started to come back to them and they provided me with the answers, I needed. The interview guide secured that I got answers to all of my questions and secured that I could ask the questions that I did not get answers to. They were both offered anonymity for the interviews.	
Evidence	**Cause (X):** Uncertainties arise and Climate changes are opening the Arctic waters
C1	**Interview: Ole Samsing** *Det begyndte i 2005 med ACIA rapporten. Der bliver det klart, pludseligt, at der er en større adgang, så er der et problem og risikofaktoren er steget... Men når alt bliver frit, er det klart at der er nogen, der siger – vi holder os væk fra russisk territorialt farvand, så kan vi gøre, som vi har lyst til. Men det er ikke kortlagt. SÅ risikoniveauet steg efter 2005*
	Part 1: The epistemic community emerges through the Arctic Council, which becomes aware of the climate changes and the implications for maritime safety.
P1.1	**Interview: Ole Samsing** *Under arbejdsgrupperne er der et hav af undergrupper, som beskæftigede sig med meget specielle spørgsmål. For de deltagende var deres motivation at blive nævnt i rapporten til Arktisk Råd, så kunne man se bidragsyderne til forskellige projekter. København og Washington og de andre får et væld af veldokumenterede ting om Arktis, hvilket er den største værdi. Når man skal lave regulatoriske foranstaltninger, så er det ofte her, at man finder ud af, hvad man gør eller ikke gør.*
	Part 2: The epistemic community discusses the issue of maritime safety, which then appears on the agenda at increasingly higher political levels. The epistemic community identifies the nature of the maritime safety issue and creates the context for interpreting new data or ideas.
P2.1	**Interview: Lawson Brigham** *The AMSA is, the aim of the AMSA, from the early, from the beginning of it was really to create a framework for environmental protection and marine safety, so you know, in amongst those are these to themes where search and rescue as an environmental response, but I think that we saw, so It was understood almost in the beginning and then when got some of the data from the shipping traffic data from the Arctic states in about 2007/2008 then we had some maps, and we saw the maps and the spread of the traffic, we could tell that some areas like the west-coast of Greenland, Svalbard or the west coast of Alaska were lacking the infrastructure*

P2.2	**Interview: Lawson Brigham:** No, and I don't know why the EPPR would recommend something like that
	Part 3: Decision makers facilitate entry by depending on the epistemic community to uncover the risk/challenges and providing policy recommendations for maritime safety/security in the Arctic. Epistemic community has control over both the learning contents and the objectives why they both set the policy goals and propose recommendations to reach that goal.
P3.1	**Interview: Lawson Brigham** *But it was clear early on in the AMSA time that the lack of an agreement between the Arctic states for Search and Rescue was a very practical, perhaps the most achievable thing we could or recommend and the Arctic States could execute quite early in the AMSA.* **Interview: Ole Samsing** *Der er det, at man i 2005 kommer frem til et meget stort studie, ACIA (1200 sider). Men det var nødvendigt at lave et kort, 30 siders dokument, som forklarer hvad det gik ud på… Det var i 2005 at grundlaget for den store interesse blev grundlagt.. Jeg bliver ved med at vende tilbage til den der ACIA-rapport fra 2005, det er den, der starter noget*
P3.2	**Interview: Lawson Brigham** *Yes, in the end, all of them really came from the expert body recommending to the senior arctic officials who recommended it all in the end, including the narrative, to the Arctic ministers, who in consensus – and we really wanted consensus, we didn't want it like other stories of the arctic council to be accepted by the arctic council*
P3.3	**Interview: Lawson Brigham** *It was a shared responsibility…So eight months before, we started negotiating the seventeen recommendations and we had, I think, sixteen, and one country, my own, wanted to add one more, so seventeen. We were negotiating with, not with the SAO's, but with the chairs of the PAME chairs of the Arctic States. ... Occasionally, we would have an Senior Arctic Official from Norway, the United States or Canada joining the discussion…. And I can tell you that, while the recommendations were adjusted by the lawyers of several of the Arctic states, including Norway, the United States and Canada the legal experts from the foreign ministries.*
P3.4	**Interview: Lawson Brigham** *Other than that, the only recommendation that were added by request of the United States, not my doing for sure, as I was chair of the AMSA..*
P3.5	**Personal communication: Lawson Brigham** *But early on in the decade is was not addressed early as aeronautical and maritime.....that came much later after AMSA as a way to bring in Sweden and Finland in to the formal agreement. This was a very important consideration in the process.*
P3.6	**Interview: Lawson Brigham** *So, the SAR-agreement is not quite what we thought, we would get…I guess we thought that the Arctic states themselves would go off and negotiate themselves to reach an agreement, but smartly they used the council as a facilitator and the structure of the arctic council, because they wanted to have the permanent participants also engaged, you know the indigenous peoples…*
P3.7	*Information obtained through conversation over the phone with sources in the Danish Ministry of Defence. No transcript available as requested from source.*
P3.8	**Personal communication: Lawson Brigham**

	One of the final key needs was provided by the AMSA recommendation that was approved by all the Arctic state ministers. That approval gave a 'green light' to move ahead with a formal negotiating of an agreement using the Council as a facilitator.
P3.9	**Interview: Ole Samsing** *København og Washington og de andre får et væld af veldokumenterede ting om Arktis, hvilket er den største værdi. Når man skal lave regulatoriske foranstaltninger, så er det ofte her, at man finder ud af, hvad man gør eller ikke gør.*
	Part 4: Costs of compliance compared to the benefits decreases Decision makers agree to the recommendations depending on domestic structures.
P4.1	**Interview: Lawson Brigham** *Of course we know that the Russian have about half of the arctic, so they agreed rather … that they would cover to the North Pole, a rather large sector of the Arctic. And then, the rest were cut up in pieces on a map that was developed. I have to tell you that it is probably the last map we will ever see with lines going to the North Pole. There is no map in the preparedness and oil spill response agreement, because politically we didn't want to have a bunch of maps that would give the impression that the Arctic states actually own the place. We don't own the place. We don't own the central arctic ocean, but for practical reasons, aeronautical, or maritime – if it were just maritime we would have not gone to the pole – but since it was aeronautical it was quite …*
P4.2	**Personal communication: Lawson Brigham** *In 2001-2005 I was involved in meetings in the U.S discussing such a potential agreement. One of the concerns always was the use of defence/militray assets by Russia and others rather than civilian and/or Coast Guard assets.*
P4.3	**Interview: Ole Samsing** *I SAR aftalen er det klart, der er ikke ret meget – hvorfor skulle man være bekymret på nogen måde? Den kolde krig var jo forbi. Nu var det om at få russerne med.*
	Outcome (Y): Epistemic community influence high on final policy choice: A legally binding multilateral SAR-agreement in accordance with epistemic community goals and practices

Ole Samsing: Former SAO and has worked with Greenland for years at the Danish Ministry of Foreign Affair. His central role in the Arctic Council makes him a valid, firsthand source. However, time had made the memories fade, but as he talked, the memories of the process started to come forward and he was quite blunt about the relationship between scientists, civil servants and decision makers. While he could have left out information, by letting him talk rather than controlling the direction, he provided useful information on things that I did not ask about. As his statements were in accordance with the written evidence, there seems to be no ulterior motives or that time has faded the memories.

Lawson Brigham: Lead author of the AMSA team and PAME Vice chair. He was in charge of the AMSA-team and was an observer in the negotiations of the SAR-agreement, why he count for a first hand source with high credibility. As for the interview with Ole Samsing, the approach by letting him speak rather than me leading with pointed questions lead to an interview, which provided more insights than if I had lead the interview. Also, he offered to look through the analysis and provided additional information afterwards via email. While taking this information with caution as it could be a way to lead the analysis in other directions, the information was speculations, which I had already encountered, why I found it trustworthy.

Communication w. Civil servant from the Danish Ministry of Defence: Factual information and in accordance with meeting minutes of PAME, why the information is trusted.

Annex 2: Presentation of Sources – Submissions to the CLCS

Presentation of the sources: Interviews and personal communications Submissions to the CLCS	
The interview with Christian Marcussen was conducted over the phone, but problems arose with the recording, why I had to shut it off in order to conduct the interview, why there is no direct citations, but is reliant on notes taken during the interview. It was typed up immediately after the interview to secure that the interview was still fresh in my mind, why I could add from memory to the notes, where necessary. The interview were conducted as semi-structured with an interview-guide based on what insight where lacking in my analysis, but I found that by letting the interviewee talk freely, the memories started to come back and he provided me with the answers to my questions. The interview guide secured that I got answers to all of my questions and that I could ask the questions that I did not get answers to. I have been in contact with sources from the central administration via email, by phone and at a joint meeting with civil servant from the Ministry of Foreign Affairs and the Ministry of Defence. My thesis supervisor is aware of the identities of these persons.	
	Cause (X): Climate changes are opening the Arctic waters
	Part 1: Due to climate changes, new areas are opening up in the Arctic, which sparks a discussion of the legal status of the area and territorial rights. Russia's first submission in 2001 affects decision makers in Denmark and Canada to ratify the UNCLOS. An epistemic community regarding collection of scientific data emerges by funds provided by national governments.
P1.1	*Information obtained at meeting, June 23 2016 at the Danish Ministry of Foreign Affairs. No transcript available as requested from source.*
	Part 2: A diffusion effect between the national epistemic communities through continuous research collaboration provides a frame of the Lomonosov Ridge as an extension of both the Eurasian and Amerasian continental shelves and as a submarine elevation, why it is possible to claim the North Pole.
P2.1	**Interview: Christian Marcussen** *Man havde et tæt samarbejde med Canada, men man samarbejdede også med Rusland. Man arbejdede sammen på flere plan: fra indsamling til fortolkning af data til publicering af videnskabelige artikler*
P2.2	**Interview: Christian Marcussen** *Der har været løbende kontakt mellem forskerne og fra 2007-2013 holdt man en årlig workshop, hvor man arbejdede med submissionerne. I begyndelsen var det kun Canada, Danmark og Rusland, men senere kom Norge og USA også til. Disse workshops har været brugt til forskellige diskussioner om indsamling af data og opfattelser af fortolkning af data mm.*
P2.3	*Information obtained at meeting, June 23 2016 at the Danish Ministry of Foreign Affairs. No transcript available as requested from source.*
	Part 3: Decision makers facilitate entry by depending on the epistemic community to create the basis for the submission to the continental shelf commission (CLCS) Depending on the structural realities, the decision makers own intentions or political support, the decision makers take control over both practices and goals.

P3.1	*Information obtained at meeting, June 23 2016 at the Danish Ministry of Foreign Affairs. No transcript available as requested from source.*
P3.2	**Interview: Christian Marcussen** *I den tidlige forskning i projektet brugte man midtlinjeprincippet som inspiration til at skabe undersøgelsesområderne. Det gik ud fra, at submissionerne skulle være databaserede enten på egne eller offentlige kilder, men man skulle dog ligge fokus på, hvor det gav mening selv at indsamle data. Det var svært nok at få de nødvendige midler for det, som man skulle gennemføre, hvorfor et ønske om at indsamle data i hele området omkring Lomonosov ville være en halsløs gerning.* *I forhold til, at han i foredragsnoter mm. har brugt midtlinjerne og afbilledet det mulige/maksimale krav siger Christian Marcussen at "han er blevet klogere", da det var en sammenblanding, som han ikke skulle have lavet. Den reelle afgrænsning er for diplomaterne.*
P3.3	*Information obtained at meeting, June 23 2016 at the Danish Ministry of Foreign Affairs. No transcript available as requested from source.*
P3.4	**Interview: Christian Marcussen** *Han kunne sige, at der ikke var nogen aftale med Rusland, hvorfor det ikke havde noget med kravets længde mod Ruslands EEZ at gøre.*
P3.5	**Interview: Christian Marcussen** *Fra starten handlede det om, hvordan man kunne maksimere Danmarks krav. I forhold til Lomonosov betød det så at bevise, at den var en naturlig forlængelse…Det politiske i processen er kommet i kraft af, at det mulige krav skulle være så stort som muligt, men også at det skulle være en forudsætning, at data kunne underbygge kravet. Politikere kan ikke blande sig i fortolkningen af data, da de ikke kan vurdere og fortolke dem.*
	Part 4: The decision makers considers the costs or benefits from the international arena to be lower than the perceived benefits
	Outcome (Y): The epistemic community have a low degree of influence on Canada, Denmark and Russia's submissions to the CLCS as decision makers provide the goals and practices.

Christian Marcussen: Leader of the data collection part of the Danish Continental Shelf Project. He has been a part of the continental shelf project since its beginning and he took part in creating the submission after the data collection ended, why he has first-hand knowledge of the process. The interview with Christian Marcussen proved some good insights into the process of working with the submission. Prior to our interview, he highlighted that no confidential information could be provided, but that he otherwise would answer any question I had. He was more withdrawn in his answers than both Lawson Brigham and Ole Samsing, why the interview-guide was an important tool. As for the other interviews, the answers he provided was thorough and he might even have revealed more than he intended, but asked not to be cited for some parts. On that ground there does not seem to be any reason not to trust the content of the interview.

Meeting w. Civil servant from the Danish Ministry of Defence and Ministry of Foreign Affairs: The information used in this thesis from the meeting matches the impressions of the process found in newspaper articles about the final submission. Some of the information given at the meeting did seem to be a word-against-word with information from other sources, why conflicting information was disregarded as either argument could have been valid.

Annex 3: Development of a frame

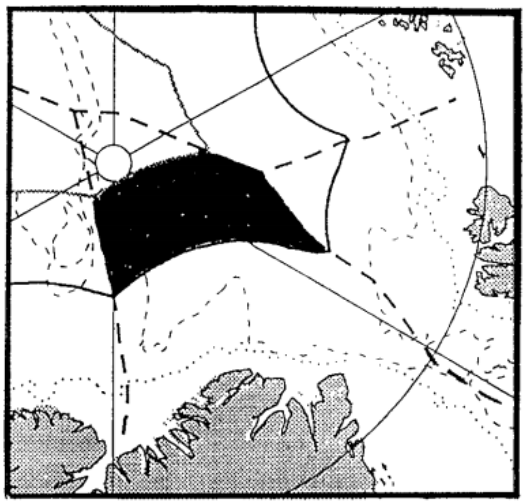
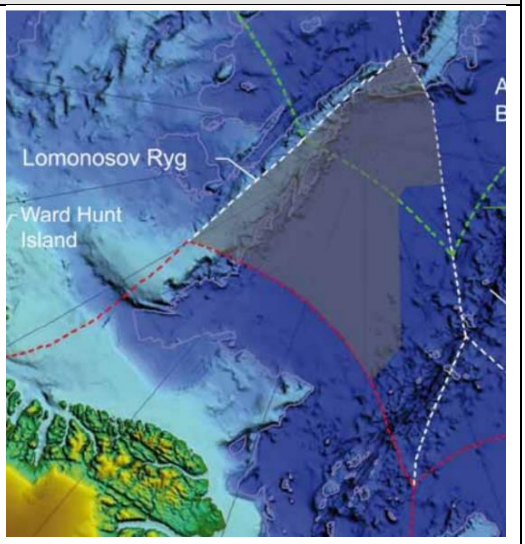
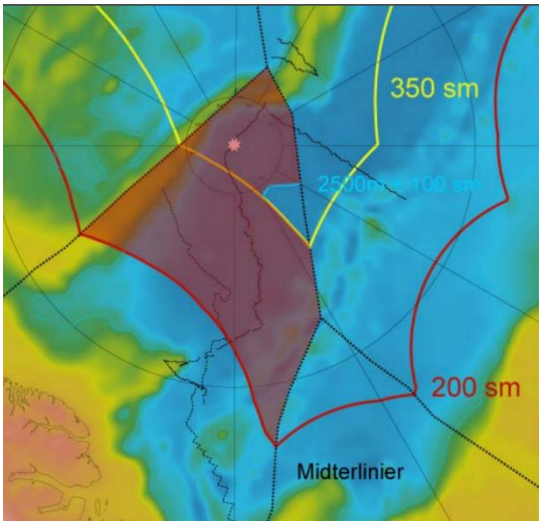
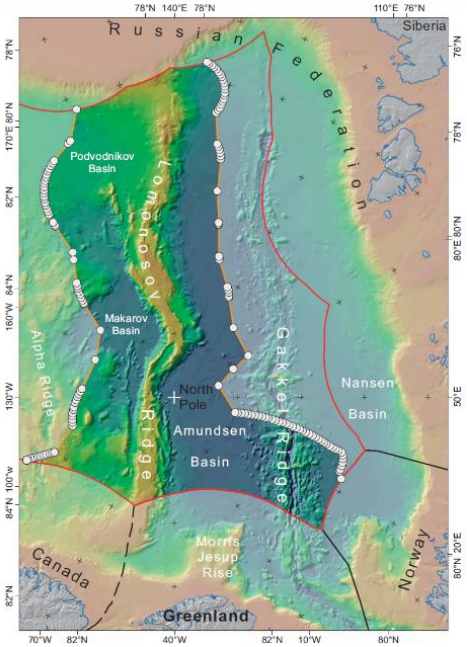
Development of the frame "There is a need for an international/multilateral agreement on Search and Rescue"	
Timeline	Account evidence
1994	*The Working Group found experience from such joint activities (A joint exercise, red.) in the Arctic of general interest and benefit for its work but considered questions concerning* ***search and rescue to be outside the scope*** *of the mandate for the Group.* (EPPR, 1994)
2000	*…the EPPR working group finds that the international agreements and arrangements currently in force, agreed to, or under consideration* ***appear to address the present needs for trans-Arctic co-operation*** *in these fields* …(Response to land-based accidents, maritime accidents) (EPPR, 2000b)
2001	In the beginning of May Russia informed that they intend to **prepare a proposal** for a new project named *"Development of the System of Interstate Interaction for Prevention of Transboundary Accidents and Elimination of Consequences of Major Accidents and Disasters with Hazardous Materials Releases in the Arctic Region among Arctic Council Member Countries*". (This was later named the "Arctic Rescue" project) (EPPR, 2001)
2003	Dr. Vladimir Novikov, EMERCOM of Russia made a presentation on the 'Arctic Rescue' initiative, *a mechanism for coordination of* ***international activities*** *on prevention and liquidation of the consequences of the emergency situations in the Arctic*. (Arctic Council, 2003)
2004	At the ministerial meeting in 2004 Russia assumes the chairmanship for the Arctic Council and lists one of its priorities as: *In the longer term we could consider the signing of an* ***intergovernmental agreement on cooperation between rescue services of the Arctic Council Member States*** *in this area (Arctic rescue, red).* (MFA Russia, 2004)
2005	*The Russian Federation presented a draft legal agreement entitled "****The Agreement between the Governments-Members of the Arctic Council about Cooperation in the Field of the Emergency Prevention and Liquidation in the Arctic****," in support of the Arctic Rescue concept.* But: *… the Working Group was of the opinion that the paper* ***addressed issues at the Ministerial level rather than the Working Group level of expertise.*** (EPPR, 2005)
2006 April	*Recognizing* ***that existing treaties, conventions and agreements provide the necessary framework*** *for the work of the EPPR, the WG would like to draw attention to the need to continue to develop co-operation and the exchange of experience and lessons learned in the field of prevention, preparedness and response in the Arctic*. (EPPR, 2006)
2006	On expectations of the AMSA: Chapter 8: Current Arctic Infrastructure (and Anticipated Needs) - Ice Centers, ***SAR Response***, Ports, Monitoring, Icebreakers (PAME II, 2006)
2007	Update from Danish SAO on 5-party Ministerial Conference in Ilulissat, Greenland, May 2008. *The purpose of the conference is to…* ***3) strengthen co-operation on issues such as common security, science, search and rescue and protection of the environment…*** (Arctic Council, 2007b)
2008 – March	The Pame Workshop recommended to: ***Strengthen multinational plans and agreements or create one Arctic agreement for all types of responses.*** (PAME Workshop, 2009)
2008 - April	UNH Workshop Common Outcomes: Arctic Search & Rescue (SAR) Agreement (Arctic Council, 2008)
2008 – May	The Ilulissat-declaration states that: *The increased use of Arctic waters for tourism, shipping, research and resource development also increases the* ***risk of accidents and therefore the need to further strengthen search and rescue capabilities and capacity around t****he Arctic Ocean to ensure an appropriate response from states to any accident. Cooperation, including on the sharing of information, is a prerequisite for addressing these challenges. We will work to promote safety of life at sea in the Arctic Ocean,* ***including through bilateral and multilateral arrangements between or among relevant states****.* (Ilulissat-declaration, 2008)

	Tthe Ilulissat meeting was a turning point in setting search and rescue in the Arctic on the agenda *(Senior Diplomat MFA, personal communication, 12 December 2012; Senior Adviser MJPS, 17 December 2012; Senior Adviser JRCC 14. December 2012).* (Rottem, 2014: 3) *We also* ***suggested returning to the discussion of an idea of an international search and rescue system in the Arctic****, with which Russia came up several years ago.* (MFA Russia, 2008) ***Lavrov concluded by proposing the creation of an Arctic search and rescue (SAR) organization****, preferably with a unified coordination of service. The Deputy Secretary asked for clarification of the proposal,* ***saying the U.S. came to the conference prepared to support discussions about a possible SAR agreement between the five states and perhaps others.*** (Cain, 2008)
2008 - May	*Discussions on AMSA-themes:* ***International Arctic SAR Agreement*** (PAME I, 2008)
Novem-ber - 2008	US SAO introduced a Memorandum Of Understanding on SAR: ***The US SAO briefly introduced the US proposal for a MOU on search and rescue (SAR) in the Arctic Ocean, proposing that Arctic states need comprehensive approach*** *because of increasing activity due to tourism, shipping and access to natural resources. The proposal* ***requests AC Ministers to establish a subsidiary body for the negotiations*** *of the instrument, noting that although the AC has no implementation role it is in a position to serve as a negotiating body for such a MOU.* *Discussion:* ***Many SAOs and PPs supported forming a task force to advance this work, and that it was a good follow-up to Ministers discussion in Ilullisat in May.*** *Russia noted that a SAR agreement had been suggested in the BEAC in 2003 and EPPR WG in 2004 and that this could be a starting point in the work.* (Arctic Council, 2008b)
2009 – January	AMSA Recommendation: ***E. Arctic Search and Rescue Instrument (SAR): [That the Arctic states agree] to support developing and implementing a comprehensive, multi-national Arctic Search and Rescue (SAR) instrument,*** *including aeronautical and maritime SAR, among the eight Arctic nations [and interested non-Arctic states with Arctic shipping interests] in recognition of the remoteness and limited resources in the region…* (DRAFT AMSA Recommendations, 2009)
2009 - February	SAO recommend to ministers: - ***Approve the Arctic Marine Shipping Assessment (AMSA) 2009 Report*** *prepared by PAME in association with EPPR and other bodies including its recommendations on enhancing Arctic marine safety, protecting Arctic people and environment a****nd building Arctic marine infrastructure*** *and request SAOs to continue to review its findings and develop appropriate follow up actions.* - ***Approve the establishment of a task force****, reporting to SAOs, to develop and complete negotiations by the next Ministerial meeting in 2011 of an* ***international instrument on cooperation on search and rescue operations in the Arctic.*** (Arctic Council, 2009)
2009 - April	AMSA recommendation: ***E. Arctic Search and Rescue (SAR) Instrument: That the Arctic states decide to support developing and implementing a comprehensive, multi-national Arctic Search and Rescue (SAR) instrument****, including aeronautical and maritime SAR, among the eight Arctic nations and, if appropriate, with other interested parties in recognition of the remoteness and limited resources in the region.* (AMSA, 2009)
2009 – April	The Arctic States decide to: *Approve the establishment of a task force to develop and complete negotiation by the next Ministerial meeting in* ***2011 of an international instrument on cooperation on search and rescue operations in the Arctic****,* (Tromsø-declaration)

Annex 4: Comparative analysis of outcome and policy recommendations

	Recommendations (AMSA/PAME Workshop)	SAR agreement
Legal framework basis	Should build on existing conventions: *SAR-Convention*; the *Convention on International Civil Aviation*, 1944 (Annex 12) and the *International Aeronautical and Maritime Search and Rescue Manual* (IAMSAR Manual) (AMSA: 174).	Based on framework: SAR convention, UNCLOS, Chicago convention, IAMSAR Manual
Territorial entrance	Remove barriers to foreign responder parties and identify obligations in disputed regions, and rules for international access in territorial waters of other nations (PAME Workshop, 2009)	Measures to ease territorial entrance by providing standards for sending requests to enter territory and an obligation to respond as soon as possible.
Funding	Establish international arctic response fund + increase insurances/penaties for ships (AMSA: 177).	Responsibility and costs relies on each state itself
SAR infrastructure	Designate potential ports of refugee, create vessel exclusion zones close to coast, create a joint response management center and create/designate response bases (PAME Workshop, 2009)	Create rescue coordination centers and appoint search and rescue agencies to contact
Operational measures	Ensure that available Arctic SAR facilities closest to a vessel or aircraft in distress are identified and respond first, regardless of nationality, in order to reduce response time. Avoid delaying response for government clearance, encourage transparency and information sharing between cruise ship lines regarding operations in the Arctic (AMSA: 174, PAME Workshop, 2009).	Conduct SAR operations: provides a responsibility to ensure assistance (for all nationalities), ease communication, operational and diplomatic structures, request assistance
Information exchange	Information on location/quantities of resources and expand communication for SAR (PAME Workshop, 2009)	Exchange of information on communication, SAR facilities, airport/port facilities, supply (refueling etc.), useful training info
Joint training and meetings	Sharing information, lessons learned and best practices arising from incidents that have already occurred in polar regions, including the two latest Antarctic incidents (AMSA: 173). Improve SAR response by serving as the framework within which to conduct joint exercises and training; share information, lessons learned and best practices; and identify and improve mechanisms for mutual cooperation, coordination and support in search and rescue and emergency response (AMSA: 174, PAME Workshop, 2009)	Training: sharing experiences, real time data, visits between SAR personnel, joint trainings/exercises, share information systems, provide support, share national positions, support/implement research or development initiatives, conducts communications check. Meetings: Meet on regular basis: visits, exercises, training, observations, reviewing guidelines

Annex 5: Maps of the potential claim for the Kingdom of Denmark

Year	Map	Year	Map
1998	 Taagholt, 1998: 255	2009	 Marcussen, 2009: 12
2005	 Marcussen, 2005: 20	2014	 Danish Executive Summary, 2014