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van Tatenhove, Jan

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Chapter 11
Marine Governance as a Process of Reflexive Institutionalization? Illustrated by Arctic Shipping

Jan P. M. van Tatenhove

Abstract The objective of this chapter is to give insight in marine governance challenges, illustrated by Arctic shipping. To do this, this chapter presents a theory of marine governance as reflexive institutionalization, in which the structural properties of marine governance arrangements are (re)produced in interactions between governmental actors, maritime sectors and civil society actors within the structural conditions of the networked polity at sea. Based on an analysis of the institutionalization of shipping governance arrangements of three (possible) Arctic shipping routes; The Northwest Passage (NWP), the Northeast Passage and Northern Sea Route (NEP/NSR), and the Transpolar Sea Route (TSR) the following question will be answered, "What are the enabling and constraining conditions of marine governance as reflexive institutionalization?" In other words, what are the possibilities for public and private actors to challenge discursive spaces and to change the rules of the game, in order to find solutions for environmental, spatial, economic, and social problems at the Arctic Ocean? The analysis shows forms of institutionalization as structural reflectiveness in which the dominant discourse 'shipping is allowed in the Arctic' is not challenged. However, this form of reflectiveness showed how actors, such as China and Russia, are able the use rules from different institutional settings to strengthen their position.

11.1 Introduction

The increase of maritime activities in oceans and seas results in environmental pollution and increasing conflicts between these activities (Halpern et al. 2008; Van Tatenhove 2013). Marine ecosystems are under pressure not only from maritime activities, but also from land-based activities (Schlüter et al. 2019). Examples include eutrophication caused by (coastal) agriculture, wastewater treatment

J. P. M. van Tatenhove (✉)
Centre for Blue Governance, Aalborg University, Aalborg, Denmark

Van Hall Larenstein University of Applied Sciences, Leeuwarden, The Netherlands
e-mail: jan.vantatenhove@hvhl.nl

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facilities, industries and discharges from ports, plastic pollution, toxic and chemical pollution and atmospheric deposition from several sources, threatening of biodiversity by pollution of industries, tourism and maritime traffic. Besides spatial conflicts and environmental pollution, oceans, seas and coastal areas are impacted by the consequences of climate change, ranging from threatening land-based activities and coastal communities by sea-level rise to the possibilities of new shipping routes, due to the melting of sea ice in the Arctic Ocean (Eguíluz et al. 2016).

This chapter presents a social scientific analysis to understand processes of institutionalization and governance illustrated by the case of Arctic shipping. With the opening of shipping routes, due to a diminishing of the extent and volume of Arctic sea ice (Keil 2018) the governing of Arctic shipping has become a timely and relevant political, social and scientific topic. From a governance perspective, Arctic shipping is interesting, because it is regulated by not only a patchwork of governance structures and regulations, but navigation takes place both in the territorial waters of Arctic states (Russia, Canada, USA (Alaska), Norway and Denmark (Greenland)) and on the high seas. Within their Exclusive Economic Zones and territorial waters, coastal states may take the necessary steps to prevent passage which is not innocent[1] (UNCLOS, art. 25 (1), and suspend temporarily (…) the innocent passage of foreign ships (UNCLOS, art. 25 (3)), or levy charges for specific services (UNCLOS art 26 (2)). Beyond the territorial waters, on the high seas, national states do not have the ability to control, to monitor, and to govern environmental, spatial, social and economic processes at sea has diminished.[2]

To understand and explain the governance challenges of shipping in the Arctic this chapter will discuss and analyse the process of institutionalization of Arctic shipping governance arrangements. The focus will be on the governing capacity of these governance arrangements by looking at the dynamics of the shipping industry, the different forms of authority and the possibility of actors to change the rules of the game, to question discourses, and to mobilize resources. To understand the institutionalization of Arctic shipping governance arrangements in Sect. 11.2, a conceptual framework is developed in which marine governance is understood as a process of reflexive institutionalization. Chhotray and Stoker (2009) define governance as the rules of collective decision making in settings where there are a plurality of actors or organisations, and where no formal control system can dictate the terms of the relationship between these actors and organisations. Marine governance "involves a process of negotiation between, on the one hand, nested general

[1] Passage is innocent so long as it is not prejudicial to the peace, good order or security of the coastal State. Such passage shall take place in conformity with this Convention and with other rules of international law. (UNCLOS, art. 19 (1)).

[2] Areas Beyond National Jurisdiction (ABNJ) are open to all states. States have the freedom of navigation, to lay submarine cables and pipelines, to construct artificial islands and other installations permitted under international law, freedom of fishing and freedom of scientific research (art 87 UNCLOS). Every state, whether coastal or lan-locked, has the right to sail ships flying its flag on the high seas (at. 90 UNCLOS). At the high seas, states shall cooperate with each other in the conservation and management of living resources (art 118, UNCLOS).

institutions operating at several levels, and on the other hand, state actors, market parties and civil society organizations. This process leads to a sharing of competences for policymaking to govern activities at sea and control their consequences" (van Leeuwen and van Tatenhove 2010; Van Tatenhove 2013: 289). The conceptual framework consists of the concepts of governance arrangements, institutionalization and reflexivity. Core to reflexive institutionalization is that actors are capable of challenging discursive spaces and have the capacity to change the rules of the game in the processes of structuration (morphogenesis) and stabilization (morphostasis). In Sect. 11.3, the case of Arctic shipping is described and analysed. The main question for the case is: what are the enabling and constraining conditions for reflexive institutionalization? In other words, what are the possibilities for public and private actors organized in Arctic shipping governance arrangements to challenge discursive spaces and to change the rules of the game, in order to find solutions for environmental, spatial, economic, and social problems at the level of a regional sea (the Arctic Ocean) and the high seas? In Sect. 11.4, conclusions will be drawn.

11.2 Marine Governance as Reflexive Institutionalization

11.2.1 Marine Governance

In general, marine governance is the capacity of state actors, representatives of maritime sectors (market actors) and civil society actors (NGOs, coastal communities) in marine governance arrangements to govern maritime activities and their consequences (Van Tatenhove 2013). Marine governance encompasses the interplay of policy-making processes (in governance arrangements), politics (the power relations and dynamics between the public and private actors involved) and polity (the institutional setting in which policies and politics take place). This interplay of policy, politics and polity results in specific processes of institutionalization.

A *marine governance arrangement* refers to the way a policy domain, in this case Arctic shipping is temporarily shaped in terms of substance and organization (Liefferink 2006b; Van Tatenhove 2013; van Tatenhove et al. 2020). Substance refers to discourses, resulting in distinct policy and regulatory goals, whereas organization refers to the types of actors involved, the rules of the game (instruments, procedures, division of tasks), and the available resources. The structure of an Arctic shipping governance arrangement can be analysed along four dimensions; **actors and coalitions**; the unequal division of **resources**, formal and informal **rules** of the game and **discourses**[3] (Van Tatenhove et al. 2000).

[3] A discourse is the specific ensemble of ideas, concepts and categorizations through which meaning is given to physical and social realities (Hajer 1995).In this chapter, discourses refer to the ideas and concepts related to the development of Arctic shipping (now and in the future).

Marine governance arrangements do not develop in a vacuum. Their specific design and way of institutionalization is the result of the interplay of interactions between interdependent actors in policy practices and processes of political modernisation (van Tatenhove and Leroy 2000; Van Tatenhove et al. 2000; Arts et al. 2006; van Tatenhove 2019). Political modernization refers "to the shifting relationships between the state, market and civil society in political domains of society – within countries and beyond – as a manifestation of the 'second stage of modernity', implying new conceptions and structures of governance" (Arts and Van Tatenhove 2006: 29).

This raises several questions, such as who are the actors at sea? What is the institutional setting of marine governance arrangements? How can we understand the interactions between different governmental actors and the maritime industry? To understand the role of public and private actors at sea, the specific dynamics of maritime sectors, and the way coalitions of maritime actors and governmental actors are nested and embedded in a multilevel and multiple actor institutional setting, I introduce the following concepts: 'maritime regime complex' (Raustiala and Victor 2004; Keohane and Victor 2011; Colgan et al. 2012), 'network state' (Castells 2009), and 'networked polity' (Ansell 2000).

Raustiala and Victor (2004: 279) define a regime complex as "an array of partially overlapping and non-hierarchical institutions governing a particular issue area (Raustiala and Victor 2004). Inspired by this definition, a *maritime regime complex* is an array of organizations, institutions and coalitions of actors which govern a maritime sector and its (sectoral) activities. Maritime sectors, such as fishing, aquaculture, shipping/navigation, deep-sea mining, oil and gas, tourism, etc., are characterised by specific institutional dynamics, reflecting the different levels at which sectoral activities are organized and regulated. The relations and interactions between public (governmental) and private (non-governmental) actors in marine regime complexes are shaped by prevailing discourses, the expectations of actors involved and the institutional rules of that specific regime complex. Maritime regime complexes can be placed on a continuum running from fully integrated institutional arrangements at one extreme to highly fragmented collection of arrangements at the other (Keohane and Victor 2011).

Due to the fragmentation and dispersal of authorities at sea, the role of (nation) states and state authority should be reconceptualised. According to Jessop (2004) political authorities are becoming involved in all aspects of meta-governance in which (…) the role of the state has shifted from the direct governance of society to the 'meta-governance' of the several modes of intervention and from command and control through bureaucracy to the indirect steering of relatively autonomous stakeholders (Bevir and Rhodes 2011) (204). Additionally, states share sovereignty with other actors, such as the European Union (EU) and the United Nations (UN). According to Beck and Grande (2007) (32) the state is in a process of transformation in which it "is not replaced or suppressed entirely, but it is integrated in a variety of ways into new international regimes and organizations, new supranational

institutions, new forms of regionalism, and the like". This is what they call reflexive modernization of statehood which leads to "the emergence of a plurality of diverse new forms of transnational governance beyond the nation-state" and "the increasing role of private actors in solving collective problems and producing public goods" (2007: 32–33). This new form of statehood is what (Castells 2009, 2010) calls the (emerging) *network state* which is 'characterised by shared sovereignty and responsibility between different states and levels of government; flexibility of governance procedures; and greater diversity of times and spaces in the relationship between governments and citizens compared to the preceding nation-state' (Castells 2009).

Ansell (2000) defines the *networked polity* (or institutional setting) as a governance structure in which both state and societal organization is vertically and horizontally disaggregated (as in pluralism), but linked together by cooperative exchange (as in corporatism). To understand the institutional setting of marine governance I define the *maritime networked polity* as the institutional setting of governance in which (emerging) network states, regime complexes and societal actors (NGOs, communities) are positioned vis-a-vis each other in a multi-level governance setting, while horizontally linked to each other in interactions of conflictual and/or cooperative exchange. The nature of these interactions is guided by institutional rules and discourse. Characteristic for the maritime networked polity is its embeddedness. Rules systems and regulations of different governmental levels come together at the level of regional seas, in what DiMento and Hickman (DiMento and Hickman 2012) (8 and 115) call clusters (the collection of international environmental institutions, regimes and complexes) (van Tatenhove 2016) (166).

With the introduction of the concepts of maritime regime complex, network state and maritime networked polity we can now define marine governance more specifically. *Marine governance* refers to the ability and capacity of network states, maritime regime complexes (the institutional order and dynamics of maritime sectors), NGOs and (coastal and marine) communities – organised in (marine) governance arrangements – to change the rules of the game, to mobilize resources and discourses, in order to govern maritime activities and their consequences in a specific maritime networked polity.

11.2.2 Reflexive Institutionalization

In general, institutionalization refers to the phenomenon whereby patterns arise in people's actions, fluid behaviour gradually solidifies into structures, and those structures in turn structure behaviour (Arts et al. 2006). Institutionalization is the ongoing process of patterning, preservation, construction, organisation and deconstruction of day-to-day activities and interactions in institutions (van Tatenhove and Leroy 2000). The concept incorporates the development of structures, stabilisation and change: institutions, no matter how stable they appear at first sight, are subject to continual change and adjustment, deconstruction and reconstruction.

More specifically, *institutionalization* is the process of production and reproduction of governance arrangements, in which the rules of the games are (re)produced in interaction within the context of long-term processes of societal and political transformation (political modernization) (Van Tatenhove et al. 2000; Arts and Van Tatenhove 2006; Liefferink 2006a). In other words, change induced by political modernization provides a structural focus on change because of the changing relations between state, civil society and market. Change stimulated by day-to-day interactions is strategic, focusing on the arguments (discourses), rules and resources actors use in interactions to define problems and to find solutions.

Analytically, two sub-processes of institutionalization can be distinguished: structuration and stabilization, in which the content and the organization of governance arrangements are (re)produced in interaction within the context of long-term processes of societal and political change. "Structuration refers to the (re)production of content and organisation of a policy domain in interaction, whereas stabilisation refers to the 'preservation of contents and organisation in specific policy concepts and arrangements" ((van Tatenhove and Leroy 2000): 19–20). The interplay of stabilization and structuration resemble the distinction made by Archer between morphogenesis and morphostasis (Archer 2010a, b, 2014). In her morphogenetic approach Archer refers to those processes which tend to elaborate or change a system's given form, structure or state (Buckley in Archer 2010a, b: 274). More specific morphogenesis is a process of structuration, which is the gradual formation and production of structural properties of a governance arrangement in interaction. Specific forms of interaction within relations of interdependency result in accepted rules of the game, discourses and the availability and division of resources. Morphostasis refers to processes in a complex system that tend to preserve these unchanged (Archer 2010a, b: 274). In this process of stabilization, institutionalized governance arrangements constrain agency (the involved actors) into adopting certain discourses, rules and resources. The institutionalization of marine governance arrangements (as the ordering of a specific maritime policy field in terms of actors/coalitions, resources, rules and discourses) is the result of the interplay of contextual processes of structural political and social change (political modernisation), and problem-oriented renewal of policy making and decision-making by agents in day-to-day practices (policy innovation).

The institutionalization of maritime policies, politics and governance arrangements can be understood from the perspective of "reflexive modernization of statehood, which leads to the emergence of a plurality of diverse forms of transnational 'governance beyond the nation-state'" (Beck and Grande 2007) (6). This also contains what Saskia Sassen calls bordering capabilities by which actors shape (bordered) spaces transversal to traditional state borders (Sassen 2006, 2009, 2013, 2015). Her central thesis is "that opening of traditional national borders may, in fact, strengthen a range of transversal bordering capabilities—transversal in the sense that these capabilities cut across traditional borders and enter and exist deep inside national institutional spaces" (Sassen 2009): 596). These bordering capabilities can be mobilized for a broad range of dynamics, including some with scale-up potentials that can unsettle the territorial authority of the state. Sassen states that territory,

as an analytic category, cannot be confined to its national instantiation, even if this is the dominant one. Whilst Sassen (2013: 31) in her work on cities argues that transversally bordered spaces entail the making of distinct, albeit elementary territories and jurisdictions inside nation-states, moving to the marine realm the focus also goes beyond or outside a single nation state. In the marine realm (at the level of regional seas and the high seas), all governmental and non-governmental actors, have transversal bordering capabilities, which are related to the ability to steer and control cross-border flows of resources (money, goods and information).

Reflexive institutionalization is a process of structuration (morphogenesis) and stabilization (morphostasis) in which the structural properties of marine governance arrangements are (re)produced in interactions between governmental actors, maritime sectors and civil society actors within the structural conditions of the networked polity at sea. Reflexivity refers to the capacity of actors to govern and to induce change (i.e., to change the processes of structuration and stabilization) by challenging the existing discursive spaces of marine governance arrangements (performative mobilization), and to activate and to use rules and resources from different rule systems and layers of government. In this sense, the dynamic process of institutionalization is driven by agency (reflexivity) and structural conditioning (networked polity and related power structure). Reflexive institutionalization at sea is not planned and designed, but is what Beck and Grande (2007: 6) call "institutionalized improvisation". Van Tatenhove (2017) distinguished three modes of reflexivity, representing different extents: structural and performative reflectiveness and reflexivity. *Structural reflectiveness* refers to the ability of actors to use rules and resources from different institutional settings within a given discursive space of a policy domain, but actors are not able to change the rules of the game. The dominant form of mobilization of actors is action-oriented within an existing governance setting. The conditions remain relatively unchanged (morphostasis). *Performative reflectiveness* refers to the ability of actors to challenge the discursive space of a governance arrangement (performative mobilization, (Pestman 2001)). This could result in for example alternative discourses, and related new coalitions, rules and resources existing side by side with the existing governance arrangement, but existing institutional rules and power relations (polity) are not challenged. *Reflexivity* refers to the situation when actors both challenge the existing discursive space of a policy domain, and are able to change the institutional rules (structural congruence, (Boonstra 2004)), which thus refers to a process of morphogenesis (structural and cultural elaboration).

The case study of Arctic shipping will analyse how to increase the institutional capacity and ability of governmental and non-governmental actors within different institutional settings at sea (networked polity) to act, to govern and to get involved in processes of governance, in order to find solutions for environmental, spatial, economic, and social problems. In the process of institutionalization, new governance arrangements are (re-)produced. Forms of reflexivity are the motor of change in this process of institutionalization.

11.3 The Institutionalization of Arctic Shipping

In this section, I describe and analyse the case of Arctic shipping. Section 11.3.1, presents some general characteristics of Arctic shipping, such as the accessibility of navigation in the Arctic region, and the different shipping routes, which are possible with diminishing sea ice covering, followed in Sect. 11.3.2 by the institutional governance setting of the Arctic. Aim of Sect. 11.3.3 is to reconstruct the institutionalization of different shipping governance arrangements of the three main Arctic shipping routes. The analysis focuses on the specific interplay of and interactions between actors within the shipping regime complexes related to forms of the network state, the guiding discourses and specific rules and resources within the networked polity related to each of the shipping routes. The analysis will give insight into different types of Arctic shipping governance arrangements, the processes of institutionalization of Arctic shipping related to the different Arctic routes and the enabling and constraining conditions for reflexive institutionalization of shipping, e.g., the possibilities of different actors to change the rules of the game and to challenge the dominant discursive spaces.

11.3.1 Arctic Shipping

The extent and volume of Arctic sea ice is diminishing (Keil 2018) (see Fig. 11.1). This opens up possibilities for navigation in the Arctic region. There are different forms of navigation in the Arctic,[4] such as liner shipping,[5] bulk shipping (liquid and dry), specialised shipping (LNG and reefer[6]) and cruise shipping. Three Arctic shipping routes are emerging (see Fig. 11.2). The Northwest Passage (NWP) connects the Atlantic Ocean with the Pacific Ocean via Canada's Arctic Archipelago. The Northeast Passage (NEP) also connects the Atlantic Ocean with the Pacific Ocean, but from Northwest Europe around the North Cape and along the coasts of Eurasia and Siberia through the Bering Street. Part of the NEP is the Northern Sea Route (NSR), which runs from Kara Strait (a small passage between Russia and Novaya Zemlya) to the Bering Strait.[7] In contrast to the NWP and the NEP, the Transpolar Sea Route (TSR) or Trans-Arctic route is high seas and does not run in the territorial waters of Arctic states. The TSR also connects Europe and Asia but is much shorter than the coastal NWP, NEP and NSR routes.

[4] www.worldshipping.org; visited 15/01/2020.

[5] Liner shipping is the service of transporting goods by means of high capacity via transit regular routes on fixed schedules (for example containerships and roll-on/roll-off ships).

[6] Reefer is a specialized ship to carry frozen products (fish and meet) (https://pame.is/index.php/projects/arctic-marine-shipping/).

[7] The main difference between the NSR and the NEP is that the latter comprises the Barents Sea and provides access to the port of Murmansk (Buixadé Farré et al. 2014).

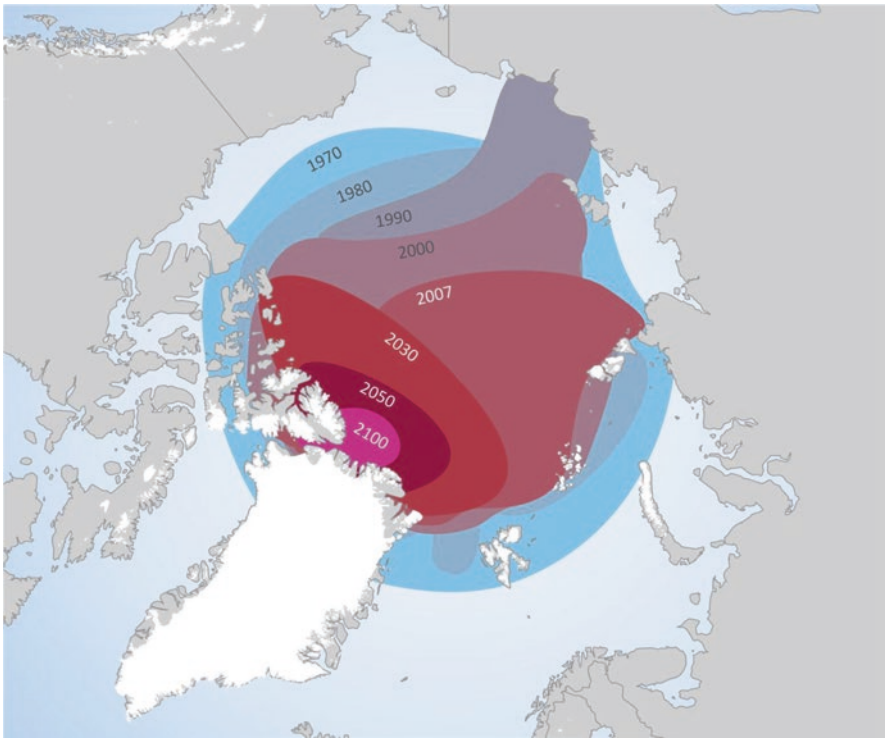

Fig. 11.1 Diminishing Arctic sea ice (1970–2100). (Source: Humpert and Raspotnik 2012)

Because the TSR passes outside territorial waters, it is of special geopolitical importance. A fourth possible route is the Arctic Bridge Route (linking the port of Murmansk in Russia with the port of Churchill in Canada via Iceland) (Humpert and Raspotnik 2012). This route will not be discussed in this chapter, because it does not connect the Pacific with the Atlantic Ocean.

Despite discussions about opening up the Arctic for navigation and other maritime activities, it will be very challenging in the near future, due to harsh weather conditions, free floating sea ice, remoteness, lack of communication and SAR (Search and Rescue) capabilities (Humpert and Raspotnik 2012; Buixadé Farré et al. 2014; Dyrcz 2017). Humpert and Raspotnik estimated that during summer (July – September) the maritime accessibility of the Arctic will increase (see Table 11.1). The Ice-free period along the Arctic's main shipping routes is expected to increase from 30 days (2010) to more than 120 days (2050). "However, free-floating ice in summer will remain a serious threat to navigation, and widespread ice in winter will continue to obstruct passage by most ships" (Buixadé Farré et al. 2014) (p. 321).

The harsh condition in the Arctic ocean requires technical innovation, what Buixadé Farré et al. (2014: 313) refer to as 'winterization': addressing the challenges unique to sub-zero environments (e.g., icing, snow, rain and fog).

Fig. 11.2 Arctic shipping routes. (Czeslaw Dyrcz 2017)

Table 11.1 Maritime accessibility in 2000–2014 and 2045–2059 for Type A vessels (light icebreaker) in the period July–September

Route	Length (km)	% accessible, 2000–2014	% accessible, 2045–2059	Accessibility change (%) relative baseline
Northwest Passage	9324	63%	82%	30%
Northern Sea Route	5169	86%	100%	16%
Transpolar Sea Route	6960	64%	100%	56%
Arctic Bridge	7135	100%	100%	0%

Source: Humpert and Raspotnik (2012: 288)

Winterization solutions are building structures resistant to low temperatures, anti-freezing measures, the procurement of freezing-resistant supplies, etc.

In general, Artic shipping routes are much shorter than the Suez Canal/Malacca and Panama Canal routes (Østreng et al. 2013) (p. 50). However they will not

substitute existing shipping routes, but will be supplementary and providing additional capacity.

11.3.2 The Networked Polity of Arctic Shipping

The networked polity of Arctic shipping is the institutional setting in which the emerging Arctic network state, consisting of formal and informal institutions, such as the Arctic Five,[8] the Arctic Council, the Northern Dimension,[9] the Nordic Council,[10] the UN (UNCLOS and IMO, shipping regime complexes and other non-governmental actors (e-NGO's, indigenous communities) are positioned vis-à-vis each other. Key actors in the emerging network state of shipping are the Arctic Council and IMO.

The **Arctic Council** (established in 1996 with the Ottawa Declaration) is a high-level intergovernmental forum to provide a means for promoting cooperation, coordination, and interaction among the Arctic States, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic. The Arctic Council has decision-making power in which also non-Arctic States want to participate (Koivurova 2013; Smits et al. 2014, 2017). The Council consists of the eight Arctic States[11] and six organisations representing Arctic indigenous peoples.[12] Observer status in the AC is open to non-Arctic states, intergovernmental and inter-parliamentary organisations with a global and/or regional constituency, and NGOs that the Council determines as potential contributors to its work.[13] The primary role of observers is to observe the work of the Arctic Council,

[8] The Arctic 5 are the five Arctic littoral states, namely Russia, Norway, Denmark (Greenland), Canada, and the USA (Alaska).

[9] The Northern Dimension is an intergovernmental platform of cooperation between the EU, Russia, Norway, and Iceland. The Northern Dimension was launched in 1997 by Finland to emphasise the interdependence between the EU and Russia, Norway, Iceland, and the Baltic States (non-EU Member States at that time).

[10] The Nordic Council is an inter-parliamentary coalition between the Nordic countries, which include Denmark, Finland, Iceland, Norway, Sweden, the Faroe Islands, Greenland, and Åland. Parliamentarians of all Nordic countries are taking place in the Council and decide upon issues after which they call on the governments of the Nordic countries to implement these.

[11] Canada, Denmark (including Greenland and the Faroer Islands), Finland, Iceland, Norway, the Russian Federation, Sweden, and the USA (Alaska).

[12] the Arctic Athabaskan Council, Aleut International Association, Gwich'in Council International, Inuit Circumpolar Council, Russian Association of Indigenous Peoples of the North, and Saami Council (https://arctic-council.org/index.php/en/about-us/permanent-participants, visited 28/01/2020).

[13] See (https://arctic-council.org/index.php/en/about-us/arctic-council/observers visited 28/01/2020) for the list of observers.

and to contribute to the work of one of the six Working Groups[14] of the Arctic Council. The AC is increasingly an "active regional organization" (Buixadé Farré et al. 2014). An example is the Arctic Marine Shipping Assessment (AMSA) of 2009 (Arctic Council 2009), which recommendations resulted in the first two binding circumpolar treaties: *Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic* (2011) and the *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response* (2013).

The UN International Maritime Organization (**IMO**) regulates shipping by setting standards and regulations about safety, security, efficiency and environmental responsibility. Examples of IMO regulations are *International Convention on the Prevention of Pollution from Vessels* (MARPOL), the *International Convention on the Safety of Life at Sea* (SOLAS), *International Convention on the Control of Harmful Anti-Fouling Systems on Ships* (Anti-fouling Convention), *International Convention for the Control and Management of Ships' Ballast Water and Sediments* (Ballast Water Management), *International Convention on Oil Pollution Preparedness, Response and Co-operation* (OPRC). To improve the safety of shipping in the Arctic and to reduce the impact of shipping on the environment IMO's International Maritime Safety Committee established in July 2014 the *International Code for Ships Operating in Polar Waters* (The Polar Code).[15] The Polar Code covers all shipping related matters in Arctic and Antarctic waters, ranging from ship design, construction and equipment, operational and training concerns, search and rescue to the protection of the environment and eco-systems of the Polar Regions.[16]

The rationale of the Polar Code is that sustainable Arctic shipping is based on two pillars; human safety and environmental protection (Keil 2018). The environmental pillar of the Code consists of binding requirements and regulations relating to oil, invasive species, sewage, garbage and chemicals and defines three categories of ships.[17] The ship safety pillar formulates binding requirements and regulations concerning equipment, design & construction, operations & manning with the aim "to provide for safe ship operation and the protection of the Polar environment by addressing risks present in Polar waters and not adequately mitigated by other instruments".[18] The implementation and the enforcement of the Polar Code will

[14] There are six Working Groups of the Arctic Council: Arctic Contaminants Action Program (ACAP); Arctic Monitoring and Assessment Programme (AMAP); Conservation of Arctic Flora and Fauna (CAFF); Emergency Prevention, Preparedness and Response (EPPR); Protection of the Arctic Marine Environment (PAME); Sustainable Development Working Group (SDWG) (https://arctic-council.org/index.php/en/about-us/working-groups visited 28/01/2020).

[15] The Polar Code is developed as a complement to existing documents, as the new 14th Chapter of the SOLAS Convention and entered into force 01/01/2017.

[16] http://www.imo.org/en/MediaCentre/HotTopics/polar/Pages/default.aspx, visited 28/01/2020.

[17] http://www.imo.org/en/MediaCentre/HotTopics/polar/Documents/How%20the%20Polar%20Code%20protects%20the%20environment%20%28English%20infographic%29.pdf

[18] http://www.imo.org/en/MediaCentre/HotTopics/polar/Documents/Polar%20Code%20Ship%20Safety%20-%20Infographic_smaller_.pdf

have implications for a diversity of actors, such as ship-owners, assurance companies, trainers, operators, surveillance and controlling agencies, etc. The Polar Code defines a new stage of Arctic shipping, because it will both constrain navigational operations in the Arctic through binding requirements, while at the same time it is an expression of the dominant discourse of sustained Arctic shipping, by stimulating and enabling shipping activities, as it contributes to shape the necessary information, communication and material infrastructures that support shipping activities. According to Keil (2018: 46) does the Polar Code not conclude, that "Arctic shipping is too dangerous or risky (…) and should therefore not take place", but it an expression of a dominant discourse that "Arctic shipping is seen universally as an activity that can be conducted sustainably (…)". "Arctic shipping is considered to be capable of interacting with the natural environment, Arctic communities, and business interests in a way that enables these assets to co-exist over time without threatening the existence of nature, societies or businesses; thus, their relationship is regarded as fundamentally sustainable".

The Arctic networked polity does not replace or suppress nation states, but states are positioned besides the shipping regime complexes and the emerging Arctic network state, consisting of actors and institutions with conflicting interests and jurisdictions, such as UNCLOS (binding international law regulating shipping, and rules related to territorial claims, etc.), The Arctic Council (to promote environmental protection and sustainable development in the Arctic, IMO (regulating environmental and safety issues related to shipping), and the Arctic Five. This fragmented networked shipping polity sets the scene in which Arctic shipping governance arrangements institutionalize.

11.3.3 The Institutionalization of Arctic Shipping in the Three Shipping Routes

This sub-section gives an analysis of the institutionalization of shipping governance arrangements of the Northeast Passage NEP (including the Northern Sea Route, NSR), the Northwest Passage (NWP) and the Transpolar Sea Route (TSR). For each Arctic route, a shipping governance arrangement is constructed, consisting of shipping regime complexes, network states and NGOs, discourses, resources and rules. The dominant discourse in all three governance arrangements is that shipping is allowed in Arctic waters and can be sustainable under certain circumstances and conditions (see Sect. 11.3.2). The main rule supporting this discourse is the Polar Code, which is a crucial condition for sustainable Arctic shipping, because it addresses "(…) present in polar waters and not adequately mitigated by other instruments of the Organization" (Polar Code 2017: 5).[19]

[19] https://edocs.imo.org/FinalDocuments/English/MEPC68-21-ADD.1(E).doc.

11.3.3.1 The NEP/NSR Shipping Governance Arrangement

According to Buixadé Farré et al. (2014), the NEP is the most practicable route in the Arctic both as a corridor for the transport of natural resources and as a shorter route for transit shipping. Although it has the highest potential for transit shipping and transporting resources, there will be serious challenges for container shipping, because they operate under a just-in-time regime, which relies on predictability and precise schedules. Bulk cargo ships do not require such a regime; therefore, it is more likely that bulk-cargo ships can deal with the variability of the NEP. However despite potential for bulk resource transport there remain significant physical and logistic limitations (shallow bathymetry, see also Arctic Council 2009). For example, the shallow depths of the NEP/NSR make it impossible for the new generation ultra large container ships (ULCS) to transit. These ships will prefer the Suez Canal Route.

The dominant shipping regime complex of the NEP/NSR consists of the coalitions and infrastructures related to tankers (oil and LNG), general cargo shipping, and icebreakers. Of the 207 transits (between 2011 and 2015), 45% were tankers and 17% general cargo.[20] During the winters (January–April 2017–2019), shipping activities take place mainly to the west of the Kara Sea.[21] Actors involved are shipping companies (Sovcomflot (Russian), transportation of crude oil and LNG; Murmansk Shipping Company (partly Russian), oil transportation, transhipment and exploration; Nordic Bulk Carriers (Danish), dry bulk shipping), insurance companies, shipbuilders, icebreaker assistants, port authorities, flag, port and coastal states, and interested states like Russia and China, but also EU member states, such as Norway, Denmark, the Netherlands, Germany, etc. Examples of the needed infrastructure are harbour facilities (repair, maintenance, storage, processing industries, refineries, etc.), Search and Rescue facilities, and hinterland infrastructures (rail and roads).

Specific for the networked polity of the NSR shipping governance arrangement is the special position of Russia. Although most Russian regulations are consistent with international law and requirements (UNCLOS, IMO, and AC (SAR)), the country has adopted rules "pertaining to vessels operating in the NSR that contain certain provisions that go beyond international rules and standards (for example, inspections, requirements for ice pilots and transit fees)" (AC 2009: 119). This is reflected in the Russian Arctic Strategy in which Russia sees the utilization of the NSR as a national integrated transport and communication system to safeguard Russian interest in the Arctic (Buixadé Farré et al. 2014: 308). For Russia, the NSR is a national integrated transport and communication system to safeguard Russian interest in the Arctic, and has developed a framework that obligates all ships to

[20] https://pame.is/index.php/projects/arctic-marine-shipping

[21] In 2018: 278 transits (124 tankers; 34 LNG tankers; 59 icebreakers; 34 containerships; 26 general cargo and 1 SAR). In 2019: 426 transits (144 tankers; 118 LNG tankers; 86 icebreakers; 65 containerships; 1 bulk and 1 SAR)(Centre for High North Logistics Nord University, 2019).

request permission to access the NSR, and to deny passage for political reasons (for example, in 2013, Russia denied three times the requests made by Greenpeace's icebreaker Arctic Sunrise to enter the NSR).

An important resource for the future viability of the NEP/NSR is the availability and accessibility of ports. The current availability of Russian ports for repairs and maintenance is scare. Of the 18 marine ports in the Russian Arctic, 11 are in poor condition and located in regions with sparse land transportation infrastructure, only 4 ports (Murmansk, Arkhangelsk, Vitino and Kandalaksha) are in fairly good condition (Buixadé Farré et al. 2014) (313). (Liu et al. 2021) showed that the implementation of the Arctic strategy has not promoted the cargo throughput of ports along the NSR during 2003–2012. According to the authors the development of ports along the NSR route is restricted by the low level of economic development, foreign trade and a lag of Russian transportation infrastructure.

Russia is responsible for the coordination of SAR activities along the NSR. Although Russia has invested in the creation of 10 SAR centres along the NSR, substantial parts of the NSR lie outside the coverage of these centres, making Russian icebreakers the only potential respondents to a SAR request (Buixadé Farré et al. 2014) (314–315).

11.3.3.2 The NWP Shipping Governance Arrangement

The NWP shipping governance arrangement consists of different shipping regime complexes in the Canadian Arctic, consisting of actors and infrastructures related to "community re-supply; bulk shipments of raw materials, supplies and exploration activity for resource development operations; and tourism" (AC 2009: 113).

The Canadian St Roch realized the first complete transit from west to east in 1942, followed by the oil-tanker Manhattan in 1969. During the period 1969–1990, there were only 30 complete transits. In 2012, 30 vessels transited through the NWP, while in 2014 only 17 vessels managed the full transit. In 2013 for the first time, a large bulk carrier transited the NWP.[22] These figures point out that there will be no commercial shipping on a regular basis to transit the NWP from west to east, aside from a few small specialty cruise operators (AC 2009: 114). Except from cruise ship tourism it is not expected that the NWP will be a viable trans-Arctic route in the nearby future, "due to seasonality, ice conditions, a complex archipelago, draft restrictions, chokepoints, lack of adequate charts, insurance limitations and other costs" (AC 2009: 114). According to the Arctic Council there will be an increase in destinational shipping in the Canadian Arctic driven by increasing demand for seasonal re-supply activity, expanding resource development and tourism (AC 2009: 114).

[22] https://www.enr.gov.nt.ca/en/state-environment/73-trends-shipping-northwest-passage-and-beaufort-sea (visited 31/01/2020).

The dominant shipping regime complex of the NWP is related to cruise and expedition shipping, and consists of tour operators, cruise-ship owners, expedition leaders, AECO (Association of Arctic Expedition Cruise Operators), SAR facilities, shipbuilders, tourists, scientists and states (Arctic and non-Arctic). Inaccessible destinations such as the North Pole, Northwest Passage and the Northern Sea Route are increasingly open for the public. Between 1984 and 2004, 23 commercial cruise ships accomplished transits of the Northwest Passage; seven commercial tours were planned for 2008 alone. The Arctic tourism industry ranges from relatively small expedition style vessels that hold less than 200 people, to large luxury cruise liners that can hold 1000 or more. According to Cajaiba-Santana et al. (2020) cruise ship tourism in the Arctic is based on the "expedition" model of Arctic cruising (Cajaiba-Santana et al. 2020), involving small vessels (between 20 and 500 passengers). Expedition cruise tourism is about "shore landings and exploration using rubber boats, quality environmental and historical interpretation of biodiversity, landscapes, historical remains and current use, remote and exclusive wilderness experience, minimal environmental and social impact, human safety and flexibility depending on dynamic weather and sea-ice conditions" (Van Bets et al. 2017) (p. 1585).

Most of the passenger vessel traffic takes place along the Norwegian coast, the coasts of Greenland,[23] Iceland and Svalbard. Though there was some passenger vessel traffic in the Canadian Arctic and Alaska, those numbers were small in comparison to the higher traffic areas. Important destinations in the NWP organized by Polar Cruises[24] are Spitsbergen (Svalbard), from Kangerlussuaq (Canada) to Nome (Alaska) and from Greenland to the Bering Sea, the west and east coasts of Greenland (west and east), and Baffin Island.[25]

Arctic cruise shipping is facing ambiguity of rules and institutional voids (Cajaiba-Santana et al. 2020), such as a lack of central authority governing the sector, a lack of regulatory power by AECO, inconsistencies related to the multi-jurisdictional and transnational operating context, and gaps related to for example licencing and Polar Code training requirements, the lack of models for insurance and assessment, and the chartering of uncharted waters.

[23] Cruise ship traffic off the coast of Greenland is increasing rapidly. Between 2006 and 2007, port calls into Greenland increased from 157 to 222 cruise ships. The number of port calls in 2006 combined for a total of 22,051 passengers, this increased to a total of 110,567 passengers for all Greenland's harbours in 2018 (http://bank.stat.gl) almost doubling Greenland's total 2018 population of 56,171.

[24] https://www.polarcruises.com/arctic (visited 14/02/2020).

[25] Polar cruises has also cruises in the NEP: from Norway to Alaska, from Nome (Alaska to Murmansk), and from Tromsø to Nome (Alaska); Iceland; Newfoundland and Labrador; Russian Far East and Scotland/Ireland.

11.3.3.3 The TSR Shipping Governance Arrangement

The Transpolar Sea Route is a mid-ocean route and is shorter than the NWP and NEP. Because the TSR has a multitude of possible navigational routes, it is more interesting for bulk shipping (which follows less predictable schedules) then for liner shipping (which are dependent on regular routes and fixed schedules). According to (Humpert and Raspotnik 2012) (294) the challenge for Arctic shipping is not primarily technological, but economic. The lack of schedule reliability and variable transit time along the Arctic shipping routes is a major obstacle for the development of the TSR. Also, navigation at the TSR remains an unviable option in the near future due to climate conditions and economic uncertainties. To become economically profitable a different kind of economic optimization needs to be developed, taking into account "the lack of economic hubs, the cost associated with different types of Arctic shipping and uncertainties with regard to investments for special equipment and insurance" (Humpert and Raspotnik 2012: 301).

Compared to the other Arctic shipping routes, the TSR involves only limited legal uncertainties and controversies, because it lies outside the EEZs of Arctic states and is therefore subject to UNCLOS and to High Seas regulations. The TSR is mainly a potential route, now only navigated by icebreakers, but it is expected that the TSR could become the dominant Arctic route for bulk shipping in the second half of the twenty-first century. China is anticipating this future development by investing in Iceland and by establishing free trade negotiations between China and Iceland in 2009 (Stanley 2012 in Humpert and Raspotnik 2012: 289). China prefers the TSR to avoid Russian territorial waters. By establishing a strategic partnership with Iceland (strategically located in the Northern Atlantic), Iceland may become an important trans-Arctic shipment hub. This would strengthen the geopolitical role of China as a "near-Arctic state" and as "a stakeholder".

11.3.3.4 Similarities and Differences in the Development of Artic Shipping Routes

The three Artic shipping governance arrangements shows similarities and differences. An important similarity is the dominant discourse, which frames shipping as a legitimate activity in the Arctic, with the related assumption that navigation can be sustainable under the condition of an effective implementation and enforcement of the rules of the Polar Code. However, the way sustainability is defined and implemented is dependent on the specific characteristics of each of the shipping governance arrangements. Table 11.2 summarizes the differences and similarities between the three Arctic Shipping governance arrangements.

Table 11.2 Differences and similarities in the development Arctic shipping governance arrangements

	Regime complexes	Rules	Resources	Networked polity
NEP/NSR	Coalitions and infrastructures related to Tanker and Cargo shipping Embedded in global trade networks	UNCLOS; Polar Code; SAR (AC); Russian law	Accessibility of ports and hinterland infrastructure; control over SAR and icebreakers	Russia; China, AC; EU
NWP	Coalitions and infrastructures related to Cruise and expedition shipping, mainly regional	UNCLOS; Polar Code; SAR (AC); self-regulation cruise sector	Control over SAR activities and facilities; Accessibility of communities, destinations.	Canada, Svalbard (Norway), Greenland (Denmark) cruise and expedition sector
TSR	No regime complexes, future possibilities related to bulk shipping	UNCLOS; AC	Investments (in hubs/ports); China's Polar Silk Route[a]	AC, China, Island

[a]In its Artic Policy China states that the Polar Silk Route "facilitates connectivity and sustainable economic and social development of the Arctic", by opening up an economic passage between China and Europe through the seas northern of Russia (Tianming et al. 2021)

11.4 Conclusions

This chapter presented a social scientific analysis to understand the process of reflexive institutionalization of Arctic shipping, by analysing three different governance arrangements related to three Arctic shipping routes (the NEP/NSR, NWP and the TSR), in terms of regime complexes, networked polity, resources, institutional rules and discourses.

The main questions of this article were: 'What are the enabling and constraining conditions for a reflexive institutionalization of Arctic shipping?', 'How do Arctic shipping governance arrangements in the three shipping routes institutionalize?', and 'Can we speak of reflexive institutionalization? In other words, are the governmental and non-governmental actors involved able to challenge and change the discursive space of Arctic shipping (performative reflectiveness), to use rules from different institutional settings, without changing the rules of the game (structural reflectiveness) or to change both the rules of the game and the discursive space of Arctic shipping (reflexivity)?

An important motor of the institutionalization of Arctic shipping is the framing of shipping as a legitimate activity in the Arctic under the conditions of sustainable shipping. Although this discursive space is challenged by some NGOs (Extinction Rebellion and Ecohustler),[26] the actors within the shipping regime complexes and

[26] Marianne Brooker in the Ecologist. The journal for the post-industrial Age, 21st February 2020.

governmental actors embrace this dominant discourse. The differences in processes of institutionalization are related to the multi-level characteristics of the networked polity and the role of states in each of the three governance arrangements. While the NWP is regional oriented, the NEP/NSR and TSR are embedded in global navigation and trade discourses and networks. Despite the fact that Russia tries to define the NSR shipping governance arrangement as a regional arrangement governed by specific Russian national rules, China's Arctic Policy will make this governance arrangement global. The future global economic role of China and the preferred routes by the Chinese government, ship-owners and investors will affect the institutionalization of the NSR and the TSR governance arrangements. Both cases are examples of institutionalization as structural reflectiveness; the discursive space of Arctic shipping is not challenged, but core actors, such as China and Russia, are able the use existing rules from different institutional settings, not only to strengthen their position in these governance arrangements, but also to influence their specific institutionalization.

Arctic shipping is at the beginning of its development. Depending on ice and weather conditions, some shipping routes will be more realistic in the future then others. This makes the future institutionalization and the type of reflexivity of Artic shipping governance arrangements difficult to predict. Theoretically, one can state that, the future institutionalization of Arctic shipping governance arrangements is affected by the Arctic governance setting. In this regionalized networked polity (van Tatenhove 2016), states are part of the Arctic network state (consisting of UNCLOS, the Arctic Council, the Commission on the Limits of the Continental Shelf (CLCS), the Arctic Five, Permanent Participants and Permanent Observers), which is in continuous interaction with the actors within the shipping regime complexes, NGOs and Arctic (indigenous) communities. Both the Artic network state and the shipping regime complexes are characterised by institutional ambiguity (van Leeuwen et al. 2012), which gives actors the possibility to negotiate and apply the rules and resources from different institutional settings. Whether this will increase the governance capacity of actors to develop sustainable solutions for Arctic shipping will be an important question for the future.

References

Ansell C (2000) The networked polity: regional development in Western Europe. Governance 13(2):279–291. https://doi.org/10.1111/0952-1895.00136

Archer MS (2010a) Morphogenesis versus structuration: on combining structure and action. Br J Sociol 61(SUPPL. 1):225–252. https://doi.org/10.1111/j.1468-4446.2009.01245.x

Archer MS (2010b) Routine, reflexivity, and realism. Sociol Theory 28(3):272–303. https://doi.org/10.1111/j.1467-9558.2010.01375.x

Archer MS (ed) (2014) Late modernity. Trajectories towards Morphogenic Society. Springer Berlin Heidelberg, New York/Dordrecht/London. https://doi.org/10.1007/978-3-319-03266-5

Arctic Council (2009) Arctic marine shipping assessment 2009 report. Arctic Council

Arts B, Van Tatenhove J (2006) Political modernisation. In: *Institutional dynamics in environmental governance*. Springer Netherlands, Dordrecht, pp 21–43. https://doi.org/10.1007/1-4020-5079-8_2

Arts B, Leroy P, van Tatenhove J (2006) Political modernisation and policy arrangements: a framework for understanding environmental policy change. Pub Org Rev 6(2):93–106. https://doi.org/10.1007/s11115-006-0001-4

Beck U, Grande E (2007) Cosmopolitan Europe. Polity Press, Cambridge/Malden

Bevir M, Rhodes RAW (2011) The stateless state. In: Bevir M (ed) The sage handbook of governance. SAGE Publications Ltd, London, pp 203–217

Boonstra FG (2004) Laveren tussen regio's en regels. Verankering van beleidsarangementen rond plattelands ontwikkelingen in Noordwest-Friesland, de Graafschap en Zuidwest Salland. Available at: http://hdl.handle.net/2066/67439

Buixadé Farré A et al (2014) Commercial Arctic shipping through the northeast passage: routes, resources, governance, technology, and infrastructure. Polar Geogr 37(4):298–324. https://doi.org/10.1080/1088937X.2014.965769

Cajaiba-Santana G, Faury O, Ramadan M (2020) The emerging cruise shipping industry in the arctic: institutional pressures and institutional voids. Ann Tour Res 80:102796. https://doi.org/10.1016/j.annals.2019.102796

Castells M (2009) Communication power. Oxford University Press, Oxford

Castells M (2010) *End of millennium: with a new preface, volume III, second edition with a new preface*, 1st edn. Wiley, Chichester. https://doi.org/10.1002/9781444323436

Chhotray V, Stoker G (2009) Governance theory and practice. A cross-disciplinary approach. Palgrave Macmillan, Hampshire

Colgan JD, Keohane RO, van de Graaf T (2012) Punctuated equilibrium in the energy regime complex. Rev Int Organ 7(2):117–143. https://doi.org/10.1007/s11558-011-9130-9

DiMento JFC, Hickman AJ (2012) Environmental governance of the great seas: law and effect. Edward Elgar Publishing Limited, Cheltenham

Dyrcz C (2017) Safety of navigation in the Arctic. Sci J Polish Naval Acad 4(211):129–146. https://doi.org/10.5604/01.3001.0010.6742

Eguíluz VM et al (2016) A quantitative assessment of Arctic shipping in 2010–2014. Sci Rep 6(1). https://doi.org/10.1038/srep30682

Hajer M (1995) The politics of environmental discourse: ecological modernization and the policy process. Claredon Press, Oxford

Halpern BS et al (2008) A global map of human impact on marine ecosystems. Science 319(5865):948–952. https://doi.org/10.1126/science.1149345

Humpert M, Raspotnik A (2012) The future of Arctic shipping along the Transpolar Sea route. In: Arctic yearbook. Northern Research Forum, pp 281–307. https://arcticyearbook.com/arctic-yearbook/2012/2012-scholarly-papers/20-the-future-of-arctic-shipping-along-the-transpolar-sea-route

Jessop B (2004) Multi-level governance and multi-level Metagovernance changes in the European Union as integral moments in the transformation and reorientation of contemporary statehood. In: Multi-level Governance. Oxford University Press, pp 49–74. https://doi.org/10.1093/0199259259.003.0004

Keil K (2018) Sustainability understandings of Arctic shipping. In: Gad UP, Strandsbjerg J (eds) The politics of sustainability in the Arctic: reconfiguring identity, space, and time. Routledge, pp 34–51

Keohane RO, Victor DG (2011) The regime complex for climate change. Perspect Polit 9(1):7–23. https://doi.org/10.1017/s1537592710004068

Koivurova T (2013) Gaps in international regulatory frameworks for the Arctic Ocean. NATO Sci Peace Secur Ser C Environ Secur 135:139–155. https://doi.org/10.1007/978-94-007-4713-5_15

Liefferink D (2006a) In: Arts B, Leroy P (eds) Institutional dynamics in environmental governance, institutional dynamics in environmental governance. Springer. https://doi.org/10.1007/1-4020-5079-8

Liefferink D (2006b) The dynamics of policy arrangements: turning round the tetrahedron. In: Arts B, Leroy P (eds) Institutional dynamics in environmental governance. Springer, pp 45–68. https://doi.org/10.1007/1-4020-5079-8_3

Liu C-Y et al (2021) The Arctic policy and port development along the Northern Sea route: evidence from Russia's Arctic strategy. Ocean Coast Manag 201:105422. https://doi.org/10.1016/j.ocecoaman.2020.105422

Østreng W et al (2013) Shipping in Arctic waters: a comparison of the northeast, northwest and trans polar passages. Springer, Berlin/Heidelberg. https://doi.org/10.1007/978-3-642-16790-4

Pestman P (2001) In het spoor van de Betuweroute. Mobilisatie, besluitvorming en institutionalisering rond een groot infrastructureel project. Rozenberg Publishers, Amsterdam

Raustiala K, Victor D (2004) The regime complex for plant genetic resources. Int Organ 58(2):277–309. https://doi.org/10.1017/S0020818304582036

Sassen S (2006) Why cities matter. In: *Catelogue of the 10th international architecture exhibition*, pp 26–51

Sassen S (2009) Keynote address. Bordering capabilities versus Borders: implications for National Borders. Michigan J Int Law 30(567):567–597. https://doi.org/10.1057/9781137468857.0007

Sassen S (2013) When territory deborders territoriality. Territory Polit Gov 1:21–45. https://doi.org/10.1080/21622671.2013.769895

Sassen S (2015) Bordering capabilities versus borders: implications for National Borders. In: *Borderities and the politics of contemporary mobile borders*. https://doi.org/10.1057/9781137468857_2

Schlüter A et al (2019) Coastal commons as social-ecological systems. In: Hudson B, Rosenbloom J, Cole D (eds) Handbook of the study of the commons. Routledge, pp 170–187

Smits CCA, van Tatenhove JPMM, van Leeuwen J (2014) Authority in Arctic governance: changing spheres of authority in Greenlandic offshore oil and gas developments. Int Environ Agreem Polit Law Econ 14(4):329–348. https://doi.org/10.1007/s10784-014-9247-4

Smits CCA, van Leeuwen J, van Tatenhove JPM (2017) Oil and gas development in Greenland: a social license to operate, trust and legitimacy in environmental governance. Resour Policy 53:109–116. https://doi.org/10.1016/j.resourpol.2017.06.004

Tianming G et al (2021) Has the COVID-19 pandemic affected maritime connectivity? An estimation for China and the polar silk road countries. Sustainability 13(6):3521. https://doi.org/10.3390/su13063521

Van Bets LKJ, Lamers MAJ, van Tatenhove JPM (2017) Collective self-governance in a marine community: expedition cruise tourism at Svalbard. J Sustain Tour 25(11):1583–1599. https://doi.org/10.1080/09669582.2017.1291653

van Leeuwen J, van Tatenhove J (2010) The triangle of marine governance in the environmental governance of Dutch offshore platforms. Mar Policy 34(3):590–597. https://doi.org/10.1016/j.marpol.2009.11.006

van Leeuwen J, van Hoof L, van Tatenhove J (2012) Institutional ambiguity in implementing the European Union marine strategy framework directive. Mar Policy 36(3):636–643. https://doi.org/10.1016/j.marpol.2011.10.007

Van Tatenhove JPM (2013) How to turn the tide: developing legitimate marine governance arrangements at the level of the regional seas. Ocean Coast Manag 71:296–304. https://doi.org/10.1016/j.ocecoaman.2012.11.004

van Tatenhove JPM (2016) The environmental state at sea. Environ Polit 25(1):160–179. https://doi.org/10.1080/09644016.2015.1074386

van Tatenhove JPM (2017) Transboundary marine spatial planning: a reflexive marine governance experiment? J Environ Policy Plan 19(6):783–794. https://doi.org/10.1080/1523908X.2017.1292120

van Tatenhove JPM (2019) Regulatory mixes in governance arrangements in (offshore) oil production. In: Smart mixes for transboundary environmental harm. Cambridge University Press, pp 309–326. https://doi.org/10.1017/9781108653183.014

van Tatenhove J, Leroy P (2000) The institutionalisation of environmental politics. In: van Tatenhove J, Arts B, Leroy P (eds) Political modernisation and the environment. The renewal of environmental policy arrangements. Kluwer Academic Publishers, Dordracht/Boston/London, pp 17–33

Van Tatenhove J, Arts B, Leroy P (2000) In: Van Tatenhove J, Arts B, Leroy P (eds) Political modernisation and the environment. The renewal of environmental policy arrangements. Kluwer Academic Publishers, Dordracht/Boston/London

van Tatenhove JPM et al (2020) The governance of marine restoration: insights from three cases in two European seas. Restor Ecol. https://doi.org/10.1111/rec.13288