

Springer Polar Sciences

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Cold Waters

Tangible and Symbolic Seascapes
of the North

 Springer

Springer Polar Sciences

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ISSN 2510-0475

ISSN 2510-0483 (electronic)

Springer Polar Sciences

ISBN 978-3-031-10148-9

ISBN 978-3-031-10149-6 (eBook)

<https://doi.org/10.1007/978-3-031-10149-6>

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This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Note on Transliteration

The Library of Congress transliteration system has been used in reference notes to Russian sources. Place and family names that are likely to be well known to non-specialist readers are given in the most commonly used form (Dostoevsky rather than Dostoevskii, Tchaikovsky rather than Chaikovskii, Gorky rather than Gor'kii, Yakutia rather than Iakutiia, Novaya Zemlya rather than Novaia Zemlia). Some Russian names are rendered in the form which the persons themselves prefer and use in the non-Russian contexts (Popogrebsky instead of Popogrebskii, Yuri instead of Iurii). This may lead to the same last names being transliterated differently (Yuryev instead of Iur'ev).

Northern Waters: From Terrestrial to Water-Bound Knowledge

The traditionally remote and inaccessible Arctic has a history of standing at the very center of the world. With the two superpowers standing face to face across the region, the Cold War made the Arctic Ocean “a modern-day equivalent of the Mediterranean of ancient times” (Zellen, 2009). Many countries found themselves in the orbit of the global struggle over the Arctic. When the Cold War ended, the confrontation was expected to turn into an era of peaceful cooperation with less international attention and tension (Palosaari, 2012). Yet, climate change and its impacts on the Northern regions’ increased accessibility concerning natural resources became the driving force in maintaining the Arctic as a field where “geopolitical actors allegedly scramble to reterritorialize an opening Arctic space (and especially the Arctic Ocean) in pursuit of national security interests and resource competition” (Dittmer, 2011, p. 202; see also Keil, 2013).

Initially, the run on hydrocarbons resulted in international joint ventures on the economic side and the strengthening of Arctic governance in the political realm (Morgunova & Westphal, 2016). Oran Young (2012a) argued that the morphosis of sea ice into free water, that is, the recession of sea ice, first led to a reorientation from terrestrial issues towards marine issues, narrowing the scope of global attention, and “fueled worldwide interest in opening commercial shipping lanes in the Arctic and exploiting reserves of oil and gas that are becoming increasingly accessible. Enhanced prospects for ship-based tourism and industrial fishing have come into focus as well” (Young, 2012a, p. 167). This situation rapidly changed in 2014 in the aftermath of Crimea’s annexation alongside increasing tensions between Russia and the West. Currently, the war in Ukraine threatens to bring the Arctic back to its Cold War role as a highly strategic and militarized zone. A loss of “cooperative spirit” can be observed. In response to Russia’s invasion of Ukraine in February 2022, the seven members of the Nobel Peace Prize–nominated Arctic Council protested Russia’s Chairmanship (2021–2023), announcing a temporary pause in their participation in all Council meetings.

Despite the changing geopolitical scene, climate change and receding sea ice are game changers that have come to stay at the center of debates concerning the Arctic. A temperature increase of 1.1 degree Celsius during the last 50 years has been

recorded, and the Arctic summer sea ice is receding at a rate of 12% per decade (NSIDC, 2012; Lemke, 2011). Resources previously unattainable have become attainable: unusable routes quickly became usable for several months. With the abundance of natural resources, this accessibility has provided the impetus for many nations to increase their military and economic presence in the region. Apart from the Arctic Five – the nations with an Arctic coastal area and an exclusive economic zone (EEZ) extending into the region (Russia, Canada, Denmark [Greenland], Norway, and the United States [Alaska]) as defined by the UN Convention on the Law of the Sea – there are also unquestionably Arctic nations (Iceland, Sweden, and Finland) that lack an Arctic coastal area. These nations, and, to a growing extent, China, consider the Arctic endowed with strategic significance and, thereby, of national interest. Increased access to the Arctic increases its exploitation by resource extraction or introducing new transport lines. Thus, risks such as climate change, oil extraction, and shipping will also increase from the ongoing militarization of the region.

The renaissance of the interest in the Arctic and northern areas is also visible in the global media as spectacular events staged by various human and non-human actors, such as the hoisting of national flags on ice, planting them on the seabed, and the melting of polar sea ice (Lehtimäki et al., 2021, p. 1). In addition to state-led and corporate explorations of the Arctic, in the past 20 years, the Northern regions have seen a drastic increase in artistic representations and fictional explorations. As Jen Rose Smith (2021, p. 158) notes, “Melting ice has become a spectacle on a global scale [...]. Within dominant conversations of the Anthropocene, ice is made a focal point as its melting is a danger to a temperate world.” Indeed, the proliferation of images and catastrophic news puts the questions of the region’s common aquatic and terrestrial space, state sovereignty, and the symbolic and economic value of the Arctic spaces on the global agenda. This mediation occurs in different forms, including national Arctic policies, texts and images in popular culture, museum exhibits, and news media. The news media plays a particular role with its potential to reach large audiences – directly or indirectly – through its narrowcasting and spillover to social media (Nilsson & Christensen, 2019, p. 6).

Whether the Arctic is in focus because of its potential for cooperation or conflict, the amount of knowledge about the Arctic is rapidly growing. Inevitably, the nexus of space, geopolitics, economic, military and security questions, and science becomes increasingly complex. Receding ice not only jeopardizes habitats but opens up the “lacunae” deemed well-hidden since the years right after World War II: when the military competition in the Arctic started unfolding, nobody could have predicted the speed with which ice would melt. “Cold waters” were and remain pivotal for the history of science during and after the Cold War: environmental sciences were practiced hand in hand with nuclear science and technology. More generally, scientific investigation of the polar areas was a significant part of defense; security strategies became a strategically important element in the US and Soviet defense policy and military subsidized research in meteorology, geology, seismology, and oceanography (Nielsen & Nielsen, 2021).

The Arctic has been extensively addressed by the international scientific community from natural scientific research to political science. The region(s) has been a focus of research, particularly regarding geopolitics, international governance, and global economic interests. Øyvind Østerud and Geir Hønneland (2014) note in their extensive review that the English language research regarding geopolitics and the international governance of the Arctic mainly focuses on how institutions can best be crafted to maintain peace and stability in the region – more or less refuting speculations about a “scramble for the Arctic.” However, French research has been more concerned about the rivalry between states for strategic resources, downplaying the institutions of cooperation. With the vast opportunities and challenges posed by climate change and increasing globalization, the future of the Arctic concerning geopolitics and governance has become a particularly hot topic (see Arbo et al., 2013; Young, 2012b).

Yet, the Arctic change is more than just the physical change induced by climate change. This change comprises complex social and technological dimensions affecting the causes and effects of climate change within local contexts in economic, political, and cultural dimensions (Christensen & Nilsson, 2017). Geographical constructions such as “the state” are not fixed entities but constructions of human agency (Dodds et al., 2013; Burkart & Christensen, 2013). Thus, the approaches developed in humanist studies to understand these human dimensions are crucial. How the history of Northern waters is and has been deeply implicated in and shaped by human actors and ambitions, most tellingly in resource competition and the technological aspirations of modernization, is prominent. The elementary and constant transformation of water – liquid into ice and glaciers into floods – works against conventional but largely discredited divisions between “nature” and “culture” (Chen et al., 2013, p. 9). Contemporary scholars draw increasingly from the humanities and social sciences in reconsidering human intercourse with nature and water (Goodbody & Wanning, 2008). As Hartmut Böhme (1988, p. 11, 12, 16) points out in his classic *Kulturgeschichte des Wassers*, the human is simultaneously an initiator and object/recipient of water circulation and water technologies. People are inseparable from the ecosystem and water circulation; thus, we cannot separate the two sides of the physical and cultural presence of water, even if specific circumstances demand an emphasis or focus on one over the other.

Experiencing the maritime or riverine environment as a cultural phenomenon brings along a specific water-bound identity endowed with cultural and national consciousness emerging in the historical alteration of knowledge, ideology building, and local and global power structures. Moreover, the history of river narratives and various waterways and coastal borderlands as privileged contact zones (Cohen, 2006; Pratt, 1992) shows how any aquatic landscape can play a key role in cultivating cultural master narratives concerning life’s circulation in a region where the Arctic seabed has become increasingly more significant in affective geopolitics (Dodds & Wilson Rowe, 2021).

Furthermore, the scholarly practices, including drilling ice cores, observing animals, analyzing trends and changes, discussing their significance for environmental policies and cultures and humanity’s present and future, contribute to the renewed

interest in the spatial and temporal dimensions of the links between Earth and its increasingly important part: the Arctic. These interdisciplinary results of investigating the Arctic suggest a delineation of the Arctic space/time as a tangible materiality and set of symbols. Thus, providing neat, discipline-specific characterizations of the region is difficult. We believe the strength of the present volume lies in that scholars working in humanities and social sciences joined forces in a multidisciplinary manner to tackle little-investigated aspects of the Arctic and the knowledge of it.

This volume aims to encourage interdisciplinary dialogue and emphasize the significance of humanist understanding among scholars exploring Arctic issues. We draw on previous research referring to the Northern Sea areas as a “resource frontier” (Van Alstine & Davies, 2016), “spatiality of hope” (Guerrieri, 2019), and “time machine” (Reutsch et al., 2018), where various physical but sociocultural changes occur rapidly and should urgently be addressed. The “resource frontier” metaphor captures the debates on the enlarged availability of Arctic riches, which will involve the growth of extractive industries in the region. The concept of “spatiality of hope” also apprehends the processes of frontier-making by examining the implication of maps and cartography in encouraging various hopes in map users. Connecting maps and hopes (to extract more oil or guard national sovereignty) allows demonstrating that maps mobilize and motivate while sometimes producing problematic promises. The “time machine” metaphor refers to the Baltic Sea, in particular, stating that it can serve as a mechanism to study and predict consequences and mitigate future perturbations of the social-ecological system due to its unique combinations of multistressor disturbances, strong scientific foundation, and early institutionalized cross-border environmental governance to address these disturbances (Reutsch et al., 2018). Consequently, the metaphors pinpoint that Northern Sea areas are particularly vulnerable – physically, socially, politically, and culturally. Simultaneously, these areas can offer valuable lessons on responding to these rapidly changing circumstances.

Cold Water in Focus

One emerging framework through which to address global concerns connected to the Arctic is to focus on the Northern waters and the drastic consequences arising from the melting and polluting processes affecting all life on Earth. Water is understood as a geographical and physical element and as part of the environment shaped by cultural methods, meaning that water is not alienated from its social significance. The current volume makes sense of the social significance of Arctic waters and interprets the Anthropocene in the Northern regions by exploring cold waters and Northern seascapes through that lens.

The volume focuses on knowledge, discourses, and representations regarding the Northern waters, including permafrost, sea areas, coastal areas, and estuaries (rivers and other minor water bodies) near the Northern coastlines. These areas are of globally emerging interest and significance, embodying a dialogue between water and

Earth. The volume's contextual background is provided by interdisciplinary approaches generated by the rapidly growing communities of scholars working towards the fundamental shift from terra-based towards aqua-based thinking (or *aquagraphy* in our coinage). The volume is informed by research conducted by several overlapping conceptual movements such as new materialism and post-humanism (e.g., Braidotti, 2013), oceanic studies (Steinberg, 2001; Blum, 2010), "blue humanities" (Gillis, 2014), and literature by human geographers (Peters & Anderson, 2014) and anthropologists (Driessen, 2004).

As the chapters draw a connection between culture and nature, attention is paid to the parallel realities of human and non-human lives in the shared regions of the Northern waters. The seascape is filled with human and non-human lives that are equally endangered and threatened by climate change and the toxic chemicals in the Northern waters. The threats are particularly felt by the Northern people and coast-dwelling communities living in a tense relationship with the natural world and non-human species facing the consequences of global warming and ecological pollution. The chapters pay attention to social and physical connectedness between humans and non-humans, articulating their encounters. The cases in the volume include the Baltic ringed seal, the gray seal, and whales as having a long history of interaction with human coast-dwelling communities where, as Virginia Richter (2016, p. 155) writes, "[whales] have become sources of food and fuel, mythological and literary figures and, finally, symbols of human ruthlessness and ecological endangerment."

The main framework is defined by the turn to Arctic and oceanic studies (Klein & Mackenthun, 2004). In the last few centuries, the signification of the sea has traveled from a temporal non-history to a location of reimagining, rewriting, and remembering historical processes. The sea has been restored as a space of antagonistic forces and a meeting place for different cultures. As Maija Ojala-Fulwood (2021, p. 24) shows in her article on the Arctic region in the early modern maps, the polar region has been powerfully visualized, mythologized, and imagined through its history of exploration and human-animal relations, which, as she suggests, has "long-standing implications on how the Arctic region has been understood."

Accordingly, this volume is motivated by the history of the Northern waters and the innovative ocean studies of the last decades (e.g., Rediker, 1987; Gilroy, 1993; Rice, 1996). The focal point is at the Northern waters and the seascape as part of modern history, which is already known by the historicization of the Mediterranean Sea, the Atlantic history, and the Pacific looming large in contemporary studies. We follow the idea implied by the blue humanities and ocean studies that the Northern waters of the Arctic Ocean and the Baltic Sea are not beyond history but are material and meaningful locations of historical meaning and cultural agency.

We use the environmentally oriented humanities as a mediator or "cultural interpreter" among different disciplines, facilitating interdisciplinary dialogue and research on cold waters. Here, the primary analytical interest lies in stories, theories, metaphors, and myths that are told, recycled, and reproduced. The chapters remind us that one of water's properties is to *circulate* – physically and symbolically. Water circulates not only in the physical world – from springs to rivers and rivers to oceans – but in the symbolic realms of philosophy, literature, and the aesthetic

imagination embedded in yet evolving images and narratives (Strang, 2004, p. 119). The aquagraphical mapping of the Northern waters corresponds to the mental mapping and cultural production of specific hopes and anxieties, reflecting drastic changes in whole lifestyles of the Arctic's inhabitants because of climate change.

The focus is on how knowledge production is provided, generated, and circulated (Secord, 2004) by cultural technologies and products, such as print literature and digital and visual media. Yet, we also acknowledge that knowledge production in the humanities and most social sciences is a slow process of mediation and interpretation. This volume highlights cultural discourses and artistic representations concerning human experientiality and imagination in the context of cold waters.

Through examining the Northern water bodies, the volume's chapters contribute to the contemporary understanding of water's multiplicity and its refusal to remain passive or abstract. The idea in common is that water has a history: Water is not an abstraction or resource on which humans may draw at will but a dynamic process that, paradoxically enough, depends on humans using it. As Jamie Linton (2010, p. 3) writes, "[w]ater is what we make of it." Moreover, if human history is a history, among other things, of how we use water, this also covers the question of what we think of environmental water bodies, oceans, seas, lakes, and rivers.

In our coinage, water is a culture-generating category that comes close to the notions of how people "think with water" since "people think *with* water as well as *about* water, and these processes are often impossible to disentangle" (Linton, 2010, p. 38). The post-humanist and new materialist shift of dualities calls for ongoing dialogue between cultural and environmental studies, attention to relationality, and the implications of discursive and material power. Working against or through this dualism while recognizing water as a physical substance and imaginative power is what recent interdisciplinary ecocritical studies have done (DeLoughrey et al., 2015; Alaimo, 2012). Societies and water make each other in processes wherein water and society change. Cecilia Chen, Janine MacLeod, and Astrida Neimanis (2013, p. 5) have coined the term "hydrological turn" while emphasizing the ecopolitical dimensions of water, materiality, contextuality in time and place, and water's involvement in discursive practices and knowledge production.

This book has its own genealogy stemming from the research of Finnish scholars in research projects *Water as Social and Cultural Space: Changing Values and Representations*, *The Changing Environment of the North: Cultural Representations and Uses of Water*,¹ and *Living with the Baltic Sea in a Changing Climate: Environmental Heritage and the Circulation of Knowledge*,² and in publications on water in the social imagination (Costlow et al., 2017), social and symbolical meanings of water (Costlow & Rosenholm, 2017; Lehtimäki et al., 2018), visual representations of the Arctic (Lehtimäki et al., 2021), the Arctic and Baltic in the

¹Academy of Finland, Grant Number SA307840. Eeva Kuikka, Markku Lehtimäki, Arja Rosenholm, Anna Stammmler-Gossmann, and Elena Trubina have written their chapters as part of the project.

²Academy of Finland, Grant Number SA315715. Jaana Kouri, Otto Latva, Tuomas Räsänen, Kirsi Sonck-Rautio, and Nina Tynkkynen have written their chapters as part of the project.

context of international environmental regimes (e.g., Palosaari & Tynkkynen, 2015; Tynkkynen, 2016), and the linkages of the environmental changes with the meanings given to the Baltic Sea (Kouri et al., 2020).

Contributions in this volume are case studies covering environmental issues, Arctic-related international water governance, animal history and the history of science, and literary and visual representations of the Northern seascapes, including the region from the north of Scandinavia to Northern America and Russia. Five chapters of the book are devoted to the Russian Federation, the Arctic Ocean's largest seascape. The Russian case, among others, enables us to speak of the North as a transnational zone. Therefore, our approach advances the idea of multiple Norths. Each chapter advocates its own understanding of the Northern waters, including a multidimensional exploration of water in cultural, political, economic, and environmental life. Accordingly, the book is an interdisciplinary project at the intersection, combining methods from cultural geography and research on the human and non-human environment, as well as in literary, film, and cultural studies. All the chapters emphasize the dynamic and mobile nature of space on land and in water.

The book is structured in three parts: Part I focuses on how different human and non-human actors cope with and mediate the Arctic's changes, balancing the tragedies and opportunities. The focus is on the cold waters as an arena for competing perspectives and problem definitions, where not only human beings but non-human actors such as animals like seals or polar bears and material entities such as sea ice and oil have agency, connecting the abundance of Arctic resources with the fragility of Northern waters. Part II addresses the hydrological space and politics by addressing the issues of different scales on which governance of the Arctic waters has been implemented. This localized and internationalized production of the Arctic hydrological space encompasses a spectrum of water-related imaginaries, ranging from anthropological interest in nostalgia for the formerly available lifestyle and fishing practices experienced by the inhabitants of the Finnish Turku archipelago to the complexities of the Arctic's changing geopolitics. The nexus of water, rivers, oceans, international politics, and local challenges is built to address the influence of the Arctic waters on the political and socioeconomic dynamics of their spaces. Part III emphasizes the symbolic-material entanglements of Northern waters as represented in literature and cinema. Here, cold water is analyzed in the context of local and indigenous cultures. The specific cultural relationship to the sea, lakes, and rivers depends on the geography and spatiality and each community's language, tradition, and memory. As the chapters suggest through their "aquagraphic" reading of the aesthetics and the materiality of the liquid element, water is a central part of modern history and a symbolic source of poetic imagination.

Part I: Mediating the Change

With the eventually drastic consequences emerging from the melting and polluting processes affecting all life on earth, the loss of Arctic ice and permafrost is tragic while opening windows of opportunity for many. Part I focuses on this ambivalence as well as the different human and non-human actors and how they mediate the change while coping with it – balancing the tragedies and opportunities posed by the change.

Human activities have become significant geological forces, particularly in the fragile North, such as land-use changes, deforestation, and fossil fuel burning. Therefore, the current geological epoch has been assigned the term “Anthropocene” (Crutzen, 2006). The Arctic region works as a prism through which the Anthropocene can be analyzed: because of human activities, the climate and the entire ecosystem in the Arctic are changing in rapid and complex ways, with effects encompassing the entire region. These changes have societal implications, and their management necessitates fundamental social changes alongside the more obvious technological ones. In the age of the Anthropocene, understanding humans’ relationship with nature has become a necessary imperative of all scientific scrutiny.

Alternative, or rather, complementary, perspectives are among the popular efforts to reorient human–nature relations in a manner that is sensitive to the idea of the triple bottom line – environmental, social, and economic dimensions – associated with the sustainable development to live through the Anthropocene. In the context of the current volume, such implies giving a voice to non-human actors, including animals, and noting the agency of material entities, such as geomorphological constellations or sea ice. These perspectives are inspired by a new materialism, setting out the radical propositions that nature and culture are to be treated as parts of a continuum of materiality, not as distinct realms, and that the capacity for “agency” – the actions producing the social world – extends beyond human actors to the non-human and inanimate (e.g., Latour, 2005; Braidotti, 2013) – implicative of the privilege humans enjoy concerning the rest of the natural and social environment. Environmental social science, for instance, has long criticized society’s anthropocentric notion and experienced theoretical turns towards materiality and the study of practice.

The Arctic has been treated as a backwater (see Economist 2012) or, as **Tuomas Räsänen** puts it in his contribution in this volume, a frontier environment with little or no function other than providing resources for human beings. Räsänen describes how the frontierization of Northern waters was symbolized by the Baltic seals, which were hunted because they preyed on fish and later became almost extinct because of toxic chemicals. Lately, the seals have suffered from the warming climate and iceless winters, becoming tragic examples of the changes in the Northern seas. Also, the attention devoted to these animals has increased as the Northern/Arctic regions have experienced a rise in human interest regarding business opportunities and geopolitics, accompanied by mushrooming artistic representations and fictional explorations.

Evolving developments potentially invite conflicting stakeholder values and encompass incomplete or contradictory processes of participation and empowerment. Yet, the recent developments are evidently driven by global economic imperatives rather than a quest for socioecological resilience within the Arctic itself (Young, 2012a, p. 168), as showcased in **Elena Trubina's** chapter about BBC's nature documentary series on the Arctic and Antarctic environment and wildlife. This series concludes that "even the most remote Northern corners are artistically appropriated for corporate gain" and that "the alarmed statements about melting Arctic ice and the threat it poses for the planet coexist with the structures and processes which generate climate change." Even if many interpreted the recent economic developments as an empowering opportunity for the region's indigenous peoples (e.g., National Research Council, 2014), it is justified to ask to what extent they encompass on-the-ground experiences, such as local perspectives and the voices of those less powerful.

The human experience is needed for sense-making. However, the matter is a necessary part of the experience and has its own agency in the sense-making process. In this volume, the approach is demonstrated in **Maria Sakaeva's** chapter, applying an anthropological approach to examine the perceptions and interpretations of the Pechora River basin following damages caused by oil in the Komi Republic, Russia. She demonstrates how oil's long-term presence has impacted how the inhabitants live with the river and how the river has become "victimized." In other words, the oil has agency and power over water, linking the abundance of Arctic resources and the fragility of Northern waters.

In **Otto Latva and Nina Tynkkynen's** chapter on the Arctic's plastic problem, they discuss how the perception of this issue has evolved in the matter and meaning in light of the increasing understanding of the global environmental crisis. Yet, as they argue, the definitions highlight the scientific interpretation of the plastic problem, distancing from and objectifying the problem and the Arctic regions. Similarly, the chapter by Trubina demonstrates how animals, such as polar bears, are objectified in a nature documentary series in a way that enhances scientific authority and tells a particular climate change narrative about the ongoing global displacement of water and ice. Both chapters showcase the potential influence of media and mediation on the roles of other actors such as NGOs, commercial interests, and local communities amid the Arctic environmental change. Media plays a central role in public perceptions and shaping the narratives of the Arctic region (Nilsson & Christensen, 2019), which will likely play a prominent role in how the Arctic is framed in political arenas, as relatively few people have any firsthand knowledge of the region.

Part II: Hydrological Space and Politics

In the scholarly debates about aquatic space, a wide range of concepts have been employed to grasp its specificity – from "aquatic regimes" (Mustonen, 2014) through "blue space as caring space" (Buser et al., 2020) to an "empire of air and

water” (Carroll, 2016). “Aquatic regime” is the notion of grasping the contrast between the conventional uses of lakes and rivers and industrial resource extraction, while “caring blue space” refers to water’s capacity to be a material and site of care, that is, ecological concerns, in diverse urban settings. The metaphor of the “empire of air and water” is employed to capture the poles, the Arctic, and the oceans as formerly inaccessible blank spaces, which, for centuries, captivated writers as atopic and otherworldly. However, existing studies are often concerned with finding new ways of understanding our planet’s “warmer” oceans and blue spaces. It is no wonder that the most well-known conceptual movement in this regard is called the “blue humanities.” In this volume, we also discuss the Arctic’s “white spaces”; water in these spaces is often frozen, although, as stated, water’s seemingly endless existence morphs into a fluid mode in nearly real time.

How does the Arctic’s natural and political space and, more generally, the space of polar waters lend itself to national and international governance? The states and the international bodies, that is, the Arctic Council and the EU, find ways to collaborate on shared issues. The Northern aquatic space comprises a palimpsest of strategies used to conquer and use it, such as early exploration, cooperation, and geopolitical rivalries – mitigating climate change’s consequences. These recent and more distant strategies signal the lack of correspondence between the global concerns and the Arctic’s division among separate states. The strategic interests of the states appear somewhat disconnected from the global agenda, while the international organizations often lack much-needed leverage. In its multicultural and social meanings, water calls for unified action. It is particularly urgent when the renewed interest in exploiting new trade routes brings more risks, including the possibility of further environmental disasters stemming from oil drilling or shipping. Northern waters are inseparable from the area’s wildlife and fisheries, and the habitats in the area are fragile. The Arctic waters are vast but contested. One can confidently predict that more disputes regarding the rights and access to resources are imminent, demanding the concerted effort of all Arctic governments and international bodies to prevent conflicts.

The authors of this part of the book develop different strategies to make sense of the processes unfolding on different scales – to “zoom in” and “zoom out” these processes using ethnographic research, conceptual analysis, and media analysis – spending extended periods of ethnographic fieldwork in their designated areas and in the localities they are intimately familiar with. They focus on the locals living and working on the coast and at different locations on the rivers. They examine the locals’ relationships with salmon in the Kemijoki River in Northern Finland and how these relationships are shaped by regulations and restrictions, as well as the corporate interests and international natural resource management institutions. **Monica Tennberg**’s chapter discusses these relationships, demonstrating that river water proves too volatile and fluid to obey the intricately devised multilevel systems of governance. Accordingly, specialized systems of knowing water prove pivotal for retaining power over it. **Anna Stammler-Gossmann** investigates riverine grasslands and villages by the Amma River in Yakutia as the residents suffer from the floods that are happening more often. The locals live off cattle, and cattle depend on natural grazing, so when the river shores are flooded, the locals (animals and

people) do not have enough grass. The ethnographically oriented scholars in this part of the volume examine the waterways as the sets of land–water interfaces whose human and non-human inhabitants are subject to different bureaucratic procedures. In the case of the Yakutian Amma River, the locals accustomed to raising cattle are unhappy about the local administration’s attempt to shake off its responsibility to care for the local pastures.

Jaana Kouri and **Kirsi Sonck-Rautio** continue reflecting on local ecological knowledge and environmental heritage while building the case of the Finnish archipelago in the Baltic Sea. They introduce the concepts of environmental ethnography and “icegraphy” to investigate the results of their fieldwork in the region and capture the changing attitudes of the locals towards the consequences of climate, namely, the loss of permanent ice cover during the winter months. Locals depend on ice and miss its abundance. This ice is now gone forever. The authors compellingly demonstrate how the rapidly changing ice landscape is captured in the ambivalent narratives of the local dwellers whose nostalgia for former times can be bitter yet retain happier moments. The scholars demonstrate a possibility of tactful field research that is keen to preserve the local, often unspoken ecological knowledge. The drama of those who collected this knowledge for generations is comprised of the fact that they may well be its last bearers: With ice rapidly disappearing, its deep multisensory awareness faces the risk of remaining obsolete without being passed to future generations. However, it is precisely this kind of knowledge obtained through living with ice that may prove pivotal for resolving the strategies for sustainably treating the Arctic.

However serious and important, security interests must closely connect to the environmental changes. In their chapter, **Heather Nicol** and **Barry Scott Zellen** demonstrate how current and increasing environmental change also brings changes to security paradigms. They examine the ongoing problematization of traditional geopolitics in transforming coastal and maritime regions. They investigate shifts in understanding security paradigms caused by melting ice instead of the ice cap deemed sturdy and stable by previous geopolitical assessments. The dynamics of climate change also resulted in the changing importance of islands and archipelagos. Again, conventionally understood in terms of geopolitics as inaccessible barriers and, thus, as crucial natural obstacles to the Soviet and other threats, today, the authors argue, understanding security must be broadened to ensure that aquatic space with related environmental concerns is compellingly incorporated. This is similar to Tennberg’s chapter in which the case of the city of Rovaniemi’s watershed in the Finnish North is examined to show how the EU’s regulations provided local authorities much-needed leverage to deal with the hydropower company whose operations caused sufficient environmental harm. The various intersecting governmental strategies penetrate the watershed’s materiality. Numerous social and spatial relations lead to conflicting perceptions of the river flow and disputes from local activists and authorities regarding corporate attempts to control the river floor. Thus, this chapter demonstrates how environmental scientific knowledge, local knowledge of Rovaniemi inhabitants, the research commissioned by the water plant, and the political expertise of the local and regional politicians and administrators intersect to pursue conflicting but overlapping interests.

Part III: Narrating and Visualizing Cold Waters

Part III discusses the ways of knowing cold waters as narrated in literary fiction and depicted in visual arts such as cinema. It focuses on how the social and the aesthetic are linked to the awareness of the cold waters in recent discussions concerning climate change and its consequences in the northern parts of the world. The chapters consider how the knowledge of water embedded in novels and cinematic renderings contributes to mapping spaces marking the history of the northern cartography of power. While human effects, memories, and dreams linked to water have not been central questions in techno-scientific and hydrobiological discourses, the following chapters on literature and visual culture emphasize the dialogue among (hydro)science, social, and cultural aspects. The authors share the aim to think *about* the changing world *with* water. Exemplary cases of northern histories are mapped through real and imaginary waters. The focus is on life in the North and the multiple meanings of water for coastal people; on river pollution in Russian Far East and its consequences to the indigenous peoples; how the environmental imagination of water is linked to climate change and melting polar ice; and how cold water works as a poetic space of mind and memory.

Cold water – its presence and experience – is especially considered in the context of local and indigenous cultures. The cold water of the river is seen as emblematic of the northern indigenous epistemology and way of thinking, as in **Eeva Kuikka**'s chapter. According to her postcolonial and ecocritical reading of Khanty author Eremai Aipin's novel *Khanty, or the Star of the Dawn* (*Khanty, ili zvezda utrennei zari*), the northern river is a watery map connecting the indigenous Khanty people on a geographical and temporal level. Also, the cold river water transmits the indigenous epistemology, underlining the inseparability of people and non-human nature. **Mika Perkiömäki**'s analysis of the work of Boris Shergin and Stepan Pisakhov – two Pomor writers of the early Soviet period – argues that a distinctive feature of Pomor identity is the dependency on Northern waters. His chapter suggests that early Soviet Pomor fiction idealizes and romanticizes the traditional Pomor life that depends on the Northern Sea, while it imagines the arrival of Soviet Arctic modernity as something that unproblematically coexists with the traditional way of life.

As these chapters demonstrate, people's ways of acting concerning cold waters also tell about the relationship of one's physical being in the world and inward experiences with the surrounding water environment. The stories are told in local surroundings and specific cultural contexts. They include the maritime Arctic Ocean and the coastal life between water and Earth, the Northern Russian rivers transmitting the indigenous epistemology, imaginary waters in New England, or even an extended atopic space in the Arctic as a possible future home for the surviving humans after the environmental apocalypse. Thinking with and about water means considering lived contexts connected to the sea or river that, as the chapters show, can be experienced as an individual *Bildungsroman* and defined by a collective way of life with its traditions and a specific relationship with water. The connection to the sea, lakes, and rivers depends on the liquid topology. Each community's language, symbols, and traditions – national, ethnic, gendered, or generational – affect

and constitute how memories and traditions are circulated. Experiencing the maritime or riverine environment as a cultural phenomenon brings a specific water-bound identity endowed with cultural and national consciousness emerging in the historical alteration of knowledge, ideology building, and local and global power structures.

As suggested, water is not only a concern for the natural sciences but a cognitive and cultural medium of social imagination and political power. Water is a central part of modern history and a potent symbol of creative thinking and poetic imagination. Thus, the authors focus on the diverse Northern waters in authentic historical and geographical contexts while maintaining the idea that the water motif reflects the flow of the poetic language of art and imagination. In short, water is liquid physicality endowed with symbolic power. The chapters take this symbolic-material entanglement of water as their starting point in examining the exterior and interior water worlds when defining human activities in specific natural and social environments.

In their chapter, **Tatu Laukkanen** and **Arja Rosenholm** write about indigenous communities coping with the changing world on the Arctic coastline, as represented in two Soviet/Russian films about the Chukchi from different eras: *The Most Beautiful Ships* (*Samye krasivye korabli*) and *The Whaler Boy* (*Kitoboi*). In a psychosocially informed analysis of Russian cinema about the Arctic Ocean, the shore's multidimensional qualities are conceptualized through the lenses of liminality, instability, and transitoriness. **Markku Lehtimäki's** chapter focuses on residents' experiences of cold water and Maine's wintry landscape in the New England region of the United States, as imagined and represented in the fiction of Paul Harding. In Harding's novels, *Tinkers* and *Enon*, cold water functions as a kind of transmission medium, bearing memories of the dead and enabling mystical connections to the historical past. In these two chapters, water is read regarding trauma and memory so that, for example, cold Northern waters have their subconscious and mysterious connections to identity and knowledge. In his classic *Water and Dreams*, Gaston Bachelard sees that water in its various substances and appearances has deep significance as a symbolic element. He suggests that contemplating depth can connect people to their subconscious and the deceased as they grapple with infinity and darkness, whereas the surface of the water forms a boundary between life and death, conscious and subconscious, and reality and imagination (Bachelard, 1983, p. 47). While cold water in its material, physical, and haptic qualities is potentially known to people in these literary and cinematic narratives, its deeper meanings may remain unknown. Here, the capacities of the region's imaginative renderings emerge.

Indeed, the realm of water is both "real and imagined" (Soja, 1996). In Part III, this realm is explicitly situated in the Arctic Ocean and the rivers that flow towards the North, as do the Russian rivers, as well demonstrating the imbrication of nature and culture by the poetic, imaginary, and speculative waters. The common idea, shared by the chapters in this part of the volume, is that human self-representation is strongly intertwined with water. Accordingly, the chapters relate themselves to the concept of *aquagraphy* or "water writing," meaning that water can be read as "writing about water" or as "writing modes produced by water itself" and by the liquid

imaginary (Capeloa Gil, 2008, p. 10; Schmitz-Emans, 2008, p. 37). The chapters offer micro-histories of specific places – the Arctic shores of the White Sea and the Barents Sea, the marine shoreline of the Arctic Ocean in the Russian Far East, northern rivers in Western Siberia depicted as a watery map that connects the indigenous Khanty people, and New England in the northeastern area of the United States – as well as analyses of texts situated in those places. The chapters show how the artists in visual culture and literature are working against abstraction that plays a role in scientific and technical discourse.

The chapters correspond to a central premise in the critical maritime history, as well as sea and ocean studies, according to which water bodies (e.g., seas and oceans) must be analyzed as historical locations (Klein & Mackenthun, 2004, p. 2; see also Costlow et al., 2017; Tynkkynen et al., 2021). Indeed, especially the chapters concerning the Arctic Ocean in this volume take issue with “the cultural myth that the ocean is outside and beyond history” (Klein & Mackenthun, 2004, p. 2). The chapters not only discover the modern historical experience of transnational contact zones in the history of seas, rivers, and oceans but suggest that (northern) oceans, seas, and rivers play a conceptual role in cultural and spatial orientation. Telling those histories involves considering social processes occurring in specific water-bound chronotopes that conceptually integrate space and time (Bakhtin, 1981, p. 84). Liquid maps reflect different ways of relating to the surrounding environment with their own historical context. Consequently, the chapters particularly examine the relationships among space, place, and water. Their explorations draw maps to the “real-and-imagined” water-bound areas as intertwined and geographically, physically, and spiritually connected. Thus, it is argued that water metaphors and images are transnational, universal, and contextually characterized by recognizable cultural identities and spatiotemporal mental maps.

While Russian or American fiction and cinema in Part III deals with representations of actual waters in their historical and cultural contexts, **Heidi Hansson** and **Maria Lindgren Leavenworth** argue that speculative fiction also has its origins in real-world concerns. Thus, in their analysis of Julie Bertagna’s fantastic atopias concerning the Arctic Ocean, the writers envision those readers imaginatively engaging with contemporary risk scenarios by encountering future worlds devastated by climate change. Here, in the book’s conclusion, the previously peripheral and inhospitable Arctic emerges as a new, visionary home.

The importance of literature and the visual arts is clearly increasing in the multidisciplinary Arctic studies published in the last decades (e.g., Ryall et al., 2010; Mackenzie & Westerståhl Stenport, 2016; Hansson & Ryall, 2017; Wood-Donnelly, 2019; Lehtimäki et al., 2021). These studies are based on the premise that nature and culture cannot be considered separate entities. Thus, the multidisciplinary Arctic studies overlap with the recent material ecocriticism (Iovino & Oppermann, 2014), emphasizing a methodological reaction to the environmental crisis, the destruction of habitats of local communities, and the “scrambling for resources” in the Arctic areas. Understanding the complex interaction of nature and culture from

a literary and artistic perspective entails paying attention to water as an existential element and resource with its cultural and political implications.

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