Chapter 4

A Tipping Point for Arctic Regimes: Climate Change, Paradiplomacy, and a New World Order

Victoria Herrmann

During the 2020 COVID-19 pandemic, global news cycles have been awash with 'tipping points.' Headlines broadcast how the shipping container imbalance of supply and demand is at a 'tipping point;'¹ how COVID-19 presents a 'tipping point' for telemedicine;² and how the pandemic threatens to be a 'tipping point' for untold suffering in least developed countries.3 Although derived from the science of ecology, 'tipping point' has become a malleable expression, kneaded by journalists, politicians, and the public to describe an intense vault away from the status quo to something new. The 21st century Arctic is not immune to the enthusiastic application of this threshold-based concept to explain a moment of critical transition. Thawing permafrost, Greenland's melting ice sheet, and the Arctic's summer sea ice extent have all garnered the status of nearing tipping points. Most northern narratives that make use of the term, like those previously mentioned, are climate-change related. They are studies, stories, and speeches that describe how a warming world is tipping once stable polar systems into an unfamiliar, more dangerous state of being.

Such tipping points are constructed in relation to how catastrophic changes in the north will negatively impact those living further south at some future point in time. A 2019 Newsweek article, for example, reported that, "Scientists have warned Greenland's ice sheet is reaching a 'tipping point,' after a study revealed it was melting four times faster than in 2003. The loss of ice could put coastal cities like Miami and New York, as well as islands elsewhere, at risk." By making the geographic connection between the remote Arctic and readily knowable cities such as New York—indeed America's, if not the world's foremost financial center—the Arctic is made legible and important to those who may never physically visit the region. This not only includes public readers of magazines like Newsweek, but also key government officials of Arc-

tic nations who make policy and investment decisions about the north without ever experiencing circumpolar quality of life, livelihoods, or landscapes firsthand. The capital cities of Arctic nations are hundreds or thousands of miles away from their northernmost settlements, and most heads of state spend little or no time above the Arctic Circle.⁵ By way of illustration, Washington, DC is 3,417 miles from Utqiagvik, Alaska and only one sitting president, Barack Obama, has crossed the Arctic Circle in the 244-year history of the United States. The physical, and in turn psychological, distance contextualizes the Arctic's value; and the importance imbued in its tipping points is made relative to what national policymakers are or will experience in their own lives. Sea level rise and extreme storms intensified by melting Arctic ice are only important insofar as they affect southern⁶ wellbeing, cities, and economies.

Nonetheless, the four million people that call the Arctic home, roughly 12.5 percent of whom are Indigenous, exist in a reality already compromised by the same tipping points. For the world's northernmost residents, climate change is already an everyday, life-threatening continual state of emergency.⁷ Unlike leaders of nation-states that so far have been able to remove themselves from the immediate impacts of a changing climate, Arctic residents, including local government officials, are already directly affected by a warming world today—ironically caused largely by what happens in the urban, highly industrialized areas further south. Arctic settlements, both coastal and inland, are being exposed to new hazards such as increasing temperatures, ice and permafrost melt, changes in precipitation patterns, rising sea levels, shoreline erosion, wildfires, and more frequent, intense weather events. On a local level, these dangers pose heightened risks to life, human health, and the economic prosperity of Arctic communities and cities. These changes in the Arctic are beginning to be felt globally.

Constructing a future scenario of the Arctic, its future governance regime, and the world order that might support it, hinges on the understanding of the tipping points Arctic residents are presently experiencing, and valuing ecosystem health, community wellbeing, and human development over great power rivalries. In what follows, this chapter offers an attempt to construct such a future scenario. First, it takes stock of Arctic tipping points in 2020. It then imagines a future shift of the world order and evolving Arctic regime governance models that

would adequately address tipping points and support Arctic residents to be resilient in a new normal by decentralizing power and buttressing paradiplomacy efforts. Finally, the chapter concludes by considering what is needed to tip the state of Arctic affairs in 2020 into a future scenario of Arctic governance that is resilient, inclusive, and just.

Identifying Arctic Tipping Points

In 2007, a research team at Exeter University led by Timothy Lenton published a seminal paper on the concept of tipping points in Earth's planetary system. The study hypothesizes that

Human activities may have the potential to push components of the Earth system past critical states into qualitatively different modes of operation, implying large-scale impacts on human and ecological systems. Examples that have received recent attention include the potential collapse of the Atlantic thermohaline circulation (THC), dieback of the Amazon rainforest, and decay of the Greenland ice sheet. Such phenomena have been described as "tipping points" following the popular notion that, at a particular moment in time, a small change can have large, long-term consequences for a system, i.e., "little things can make a big difference."

Seven years later, the United Nations formally added 'tipping point' as a new phrase within the lexicon of climate policy in its Fourth Assessment. The term is defined in the Intergovernmental Panel on Climate Change (IPCC) glossary as "a level of change in system properties beyond which a system reorganizes, often abruptly, and persists in its new state even if the drivers of the change are abated." Today, the focus of climate tipping points has coalesed into three, more general categories in climate literature: (1) runaway loss of ice sheets that accelerate sea level rise in both the Arctic and Antarctic; (2) forests and other natural carbon stores such as permafrost releasing those stores into the atmosphere as carbon dioxide (CO2); and (3) accelerating warming and the disabling of the ocean circulation system. Hall three are connected to what happens in the Arctic, a region that is undergoing an "unprecedented transition" in human history according to the 2018 NOAA Arctic Report Card. NOAA

As Arctic air and sea temperatures warm at nearly three times the rate of the global average, the Greenland ice sheet has begun to thaw at an accelerated rate.¹³ This "sustained acceleration and the subsequent, abrupt, and even stronger deceleration" of the ice sheet could add 7 meters (22.96 feet) to sea levels within a millennium.¹⁴ Some models suggest that "the Greenland ice sheet could be doomed at 1.5°C of warming,"—in fact, "as soon as 2030."15 While the dissolution of glacial ice is an increasingly cataclysmic contributor to sea level rise, it also has the impacts on ocean circulation when combined with the loss of Arctic sea-ice. An estimated 95 percent of the Arctic's multiyear sea ice, its thickest and oldest ice, has disappeared since 1985. 16 Models suggest that the influx of fresh water from this combined ice melt "could have contributed to a 15 percent slowdown since the mid-twentieth century of the Atlantic Meridional Overturning Circulation (AMOC), a key part of global heat and salt transport by the oceans."17 A further slowdown of the AMOC holds the potential to destabilize the West African monsoon, trigger drought in Africa's Sahel region, dry the Amazon, and disrupt the East Asian monsoon. Warming also poses the very real threat of turning both sub-Arctic boreal forests and permafrost from carbon sinks to carbon sources. Increases in forest fires and large-scale insect disturbances are causing a dieback in North American boreal forests and, by the end of this century, the Arctic could see a 40 percent reduction in permafrost cover, i.e. across some 2.5 million square miles. 18 As permafrost thaws and its organic materials begin to decompose, these once frozen landscapes are projected to release huge stores of greenhouse gases, including carbon dioxide, nitrous oxide, and methane that have been locked in the permafrost for thousands of years.¹⁹

Localized Impacts and Community Threshold Response

Each of these planetary health vital signs is nearing, but is not yet past, the edge of tipping. Rather, glacial ice, sea ice, and the Arctic's carbon sinks of permafrost and boreal forests are stressed, teetering on the cusp of a threshold response—a rapid but long-lasting change that is difficult to reserve and may become self-perpetuating through a positive feedback loop. When viewed through this planetary lens, there is an immediate need to act now to mitigate global greenhouse gas

emissions to lessen (if not entirely prevent) future impacts of climate change. However, melting glacial ice, diminishing sea ice, thawing permafrost, and forest die-off have already challenged daily life in the Arctic and in many communities elicited a threshold response, whereby they are forced to create new societal, economic, and cultural systems under changing environmental conditions.²⁰

In just one example, ice loss and warming ocean temperatures are changing the distribution of ice-associated marine mammals and catalyzing the northward expansion of temperate marine mammals. The result is greater competitive pressure and risk of predation, disease, and parasite infection on some endemic Arctic species that in turn impact food security of Arctic residents.²¹ These changes cause variations in access to, availability of, and quality of traditional food resources—affecting the quality of diet for Indigenous coastal communities of the Arctic.²² Beyond nutrition, impacts to subsistence hunting and fishing for Indigenous communities negatively influences the spiritual health, resilience, intergenerational cohesion, and economic sustainability of Arctic Indigenous coastal communities. Changes in fish and marine mammal species (often with knock-on effects) means different temporal and geographic mobility patterns of hunting and fishing for the Arctic's Indigenous coastal populations. In 2015, four Alaska Native villages had failed walrus hunts, putting entire communities' food security in danger and their economies in local disaster declarations. A Washington state-based nonprofit, SeaShare, had to donate 10,000 pounds of frozen halibut to alleviate hunger.²³ Even when hunting is possible, climate change is making sea ice, typically stable enough to provide a safe platform to hunt, unreliable. Increasingly common are stories of hunters falling through bad ice on foot and snowmobile, resulting in injury and death.24

Such a shift is not merely felt locally, however. It has also consequences for the global economy and power politics. Commercially, climate change, ocean acidification, and subsequent changes in marine productivity are restructuring projections in fisheries' catches, revenue, and sustainable management in the Arctic.²⁵ Estimates suggest that the Atlantic-Pacific fish interchange enabled by Arctic warming will change 39 percent of global marine fish landings. Where the once inhospitable environmental conditions in the Arctic formed a barrier separating most marine organisms in the North Atlantic from those in the

North Pacific, up to 41 species could enter the Pacific and 44 species could enter the Arctic by 2100 as a result of temperature shifts. This increased activity in the marine economy has cascading impacts on the potential need for more robust and resilient port city built infrastructure, migrant labor, and Coast Guard support. As fellow chapter author Andreas Østhagen has noted, "Fisheries are especially prone to small-scale conflicts erupting, as both resources and maritime boundaries are hard to control and monitor."

The Arctic's changing physical and biophysical processes have direct and indirect effects on the food security, economies, health, infrastructure, and cultures of both Arctic and non-Arctic residents of our shared home planet. However, because of more immediate and intense regional impacts, assessing vulnerabilities, identifying plans, and investing in human-centered economic, societal, and cultural resilience have become a much higher priority for local Arctic decisionmakers than their corresponding national leaders who must also balance geopolitical demands. The United States offers perhaps the most extreme example of this discrepancy. Despite 31 Alaskan communities being at risk of climate-induced displacement and hundreds more being climate-affected,28 in 2019 the U.S. federal government refused to sign any official Arctic Council joint declaration that made mention of climate change or the Paris Agreement.²⁹ So disjointed are the localized impacts of climate change and national policymaking on the issues, the Native village of Kivalina, Alaska joined four Louisiana tribes to file a formal complaint to the United Nations that the federal government has "failed to protect the human rights of Tribal Nations in Louisiana and Alaska, who are being forcibly displaced from their ancestral lands."30 To imagine an equitable, sustainable Arctic order for the 21st century necessitates a harmonizing of policy priorities across levels of Arctic governance; a co-creating process of genuine climate commitments across borders; and a funding scheme for climate resilience funding that acknowledges many Arctic communities are past a tipping point.

The Limitations of the Current Arctic Order

While local climate change impacts imperil Arctic quality of life and ecosystem health with increasing severity, another tipping point has gained attention: the Arctic's "zone of peace and cooperation" tipping

into great power competition. In recent years, Arctic scholars have debated the relevance and effectiveness of the Arctic Council, questioning if the decades old organizational structure is still adequate and fit for its purpose.³¹ Much of this discussion centers around military matters in the circumpolar region and the Arctic Council's inability to directly address hard security tensions and conflicts, as prohibited in the Ottawa Declaration (1996). The Arctic has long been considered a low-tension zone sheltered by Arctic exceptionalism. However, since two mini submarines dove to the Arctic Ocean's seabed in 2007 to plant a one meter-high titanium Russian flag on the underwater Lomonosov ridge, and indeed to a lesser extent before then, headlines of a "new Cold War" in the Arctic have dominated news and think tank takes alike.³² In addition to geopolitical posturing of flag planting and photo shoots, Russia has modernized military infrastructure, built advanced radar stations, constructed new icebreakers, expanded Arctic military drills and deployed force capabilities along its northern border. With non-Arctic events³³ straining the circumpolar cooperation of Arctic nation states, some argue that Russia's military posture in the Arctic "can no longer be considered in isolation from the country's growing tensions with the West. In this sense, the period of 'Arctic exceptionalism'—in which, by convention, the region has been treated as a zone of depoliticized cooperation—is coming to an end."34

Others in turn have called for a reorganizing of the Arctic Council to include a forum to discuss security concerns or even for the creation of an entirely new governance structure more akin to the Organization for Security and Co-operation in Europe.³⁵ Rather than reconfigure existing actors into an alternative assemblage, reflecting the usual power dynamics, challenges, and tensions among Arctic states, an alternative order privileging so-called subnational actors of the Arctic would allow to front climate security concerns as well as practical, depoliticized cooperation on local and regional issues over wider power-political posturing. By imbuing local stakeholders and representatives with agency and ownership over regional decision-making, grounded issues, relevant to Arctic residents, they could be elevated above those of the political capitals thousands of miles away. To be sure, a diverse array of sub-national actors exists in the Arctic. Indeed, provinces, territories, states, autonomous regions, municipalities, cities, First Nations, Tribal Councils, and Indigenous governments already participate in paradiplomacy in a variety of ways. For the purposes of this chapter, subnational actors can be taken to mean "a coherent territorial entity situated between the local and national levels with a capacity for authoritative decision making."36 That is, the level of government below the central authority that has competences and administrative resources above the city level. The subnational actors listed herein are taken from those identified in the Arctic Human Development Report, an assessment of human development and transformations in the region.³⁷

Regime Shift to Local Leadership and Paradiplomacy

The idea to include a broad array of sub-national representatives in the Arctic Council is not new. In 2019 a conference was held in Montreal to map Arctic paradiplomacy challenges and successes, and in recent Arctic Yearbook publications several authors advocated for expanding the Council's framework to include regional and local representatives.³⁸ Arguments focused in part on the special status of Indigenous organizations and encouraged a comparable position for northern sub-national actors like the State of Alaska, Greenland, the Canadian territories, Nordic municipalities, Russia's republics, and subnational Indigenous organizations like the Alaska Federation of Natives and the Sami parliaments in Norway, Sweden, and Finland. For them, these "ethnically and linguistically unique [regions], with political legitimacy granted by their domestic election," necessitate the creation of a mechanism by which to formally include them in the Council's work.³⁹ Apart from Canada, which has a long history of appointing Northerners to be their representatives, other Arctic States' senior Arctic officials and Arctic council ministers often are civil servants (without direct ties to the Arctic minorities) working in 'southern' capitals. In this quasi-colonial structure, Arctic regional representatives must go through the capitals to have their voices heard and feel as though Arctic Council officials now speak on behalf of them, making decisions about the circumpolar geographies without direct local representation.

The inability of individual national governments to adequately address issues like climate change (not least affecting their own national territories in the Arctic) and the sustainable development goals for their country, never mind the world, points to the need for a devolution of power to include other stakeholders and go beyond nation-to-na-

tion negotiations. Solving these complex problems requires a diverse array of political actors, authorities, institutions, nations, movements, and associations that go beyond territorial borders. While much Arctic problem solving still occurs at the national level, today's challenges have opened the global policy agenda to subnational actors, as the rapid environmental, economic, and social changes happening on the ground today have renewed a desire to collaborate across sub-national regions to address challenges quickly and locally. Since the 1970s, there has been a devolution of power to local authority through domestic political decentralization, leading to the creation of Nunavut in Canada and home rule (1979) and Self Government in Greenland since 2009. This transfer of authority to empower localities not only enabled local governments and political leaders to govern policy in their domestic constituencies—it also emboldened their participation in internal fora like Arctic Frontiers, Arctic Circle, and the Northern Forum. In these settings, subnational actors have embraced their internationalization and cross-border engagement, stressing their position on the front line of climate tipping points, while using their newfound national and international political legitimacy to act in the Arctic's foreign relations.

Sub-national stakeholders already can and are taking steps to change the paradigm, even if they are in countries, such as the United States, that are more reluctant to take national climate action. The Trump administration's refusal to take climate change and sustainable development seriously is an important push factor to consider a new Arctic order that privileges subnational involvement. But there are equally important pull factors that show why the inclusion of subnational actors in decision-making is vital to the future viability of an effective Arctic Council. By elevating their status as full participants and stakeholders in meetings and empowering them to implement regional governance initiatives, progress on climate change could be maintained despite a lack of commitment from national governments. While sub-national actors may not have as many resources at their disposal as federal governments, because of their limited geographic scope, states, territories, and regional administrations can target action to rapidly address tangible, context-specific challenges across different parts of subnational government. It must also be noted that local action in the Arctic holds the most promise to change the energy paradigm, as sub-national entities can craft and implement greenhouse gas reducing policies targeted

at Arctic communities. A re-imagining of the Arctic order would require national governments and the Arctic Council to cooperate with and support sub-national governments, who already have control over implementation of projects, policies, and regulations. Transportation, existing building retrofits, waste management, water, energy supply, outdoor lighting, planning and urban land use, and food and agriculture are just a few of the jurisdictions sub-national actors can change to increase climate resilience, environmental sustainability, and social equity.

In addition, because of more flexible governance structures, sub-national leaders who confront budget and funding constraints that are likely to persist in the coming decades, have the leeway to devise creative responses. Creativity is enabled by the ability of local governments to champion change, engage the public, enact legislation, implement new programs, and create partnerships more quickly and in more targeted ways. Sub-national governments are also flexible enough to work closely with the private sector, generating more opportunities for private companies to become involved in climate mitigation. By contrast, nationally-driven financing proposals to fund projects related to Paris implementation or the sustainable development goals in the Arctic can be hampered by politics and require a much longer time frame to build the broad support necessary for passage. For instance, a proposal for a national infrastructure bank by Senator John Kerry, Senator Kay Bailey Hutchinson, and Senator Mark Warner, and a similar idea proposed by President Obama's administration, were stifled by partisanship in Washington. While the idea for an infrastructure or green bank never came to fruition at the national level, stakeholders in Alaska have been moving forward in establishing a green bank for the state—despite, or perhaps as a reaction to, the state's budget deficit. The flexibility of a state, territory, republic, or county to address fiscal concerns is critical for facilitating the necessary system shift to increase climate resilience.

A New Normal for Arctic Order

Asserting the need for a redesigned Arctic order centered around local needs is not an argument that sub-national actors will supersede nation states in the world order.⁴⁰ In our current governance regimes, sub-national actors can be limited by budgets, technical expertise, and

management infrastructure. They lack the power to coordinate different levels of authority, organize power-sharing between levels, and promote cooperation across levels of hierarchy to achieve an overarching vision for mitigating climate change and fostering sustainable development. Subnational actors widely vary in their abilities, and their ambition, to pursue climate policies. While Iceland's geothermal industry provides the country with most their energy and lead the way worldwide for effective emissions mitigation, other northern geographies like Nunavut, Canada run on 99.94 percent diesel. Ub-national governments can fill the policy gap left by inert national actors, but they cannot replace national involvement altogether today.

Rather than sub-national Arctic actors taking on the full responsibility and leadership privileges parallel to Arctic states immediately, the Arctic Council, and by extension the eight Arctic nation states, can take direct action now by developing the governance structure to include, empower, and utilize the vital assets local authorities offer. A first step could be to establish an expert group or task force of and for sub-national actors to create their own vision of equitable, sustainable regional governance and a roadmap for how to get from here to there. Visions provide the common, universal goals or outcomes that can coordinate many actors working at different levels. Establishing key priorities for regional outcomes can ensure that intended impacts are met. This could help reset the conventional, often neglected role of Arctic regional actors and push the Council in a more inclusive direction, though it also raises the issue of subnational tensions, as highlighted in this volume by Inuuteq Holm Olsen's argument on Greenland-Denmark relations.

Once a vision and strategic priorities for Arctic sub-national involvement are set, the working group could establish a guidance document for project selection and development to refocus current initiatives on projects based on and in support of Arctic community and city needs in the short term. Locally-driven guidelines are critical to connect local execution to the broader goals of the Council, and should set broad parameters all Arctic actors can respond to appropriately. Creating benchmarks for thoughtful projects and programs in the Arctic can ensure that projects meet long-term goals and support sustainable Council initiatives that outlast any one chairmanship. Any project selection scheme that came to fruition from the working group can use baseline data from already existing sources of research in natural science, social

science, and traditional knowledge from the Arctic Council's robust research support. Research from the six working groups of the Council on biodiversity, oceans, Arctic peoples, environment, and climate can be used to establish metrics for selection criteria.

Sound baseline data is not only vital in project selection; it also plays a key role for development, evaluation, and subsequent improvement of projects. However, subnational actors require more to support the threshold responses currently underway to address climate tipping points. While Arctic local leaders benefit from local and traditional knowledges, they are overburdened and often do not have the capacity to take on additional time and funding-intensive work. As Fred Sagoonick, Assistant Secretary of the Bering Straits Native Corporation and Shaktoolik Tribal Council Member in Alaska, noted in a 2016 interview, "We need people to talk [to], work with us. Call me up and give me the answer. Make me a map of our infrastructure vulnerability, bring someone out here who can help. Yeah, it's frustrating. We don't need another report or toolkit. We need real support."42 That support can be delivered by a regional governance organization led by a subnational vision and support by national governments. Subnational Arctic visions, baseline data, and project selection and development processes must be paired with technical and financial support for realizing those projects.

Although the Arctic Council Secretariat is well funded, "it has very little discretionary funding. Similarly, the Working Groups rely on one or two states to fund a secretariat but have limited ongoing project funds. Almost all activities are funded on an ad hoc basis by the states who advocated for them and by individual experts who secure their own funding through national channels."43 Mobilizing funding for subnational Arctic projects within the Arctic Council structure would require a dedicated effort from the Secretariat and members to seek out support from the private and public sector. While not impossible, efforts to raise funds for project implementation and participation like the Project Support Instrument and the Álgu Fund have not realized sustained, large scale funding.⁴⁴ For short-term support once a group is established, subnational members could evaluate the potential of multisolving funding—the pooling of expertise, funding, and political will within a policy to solve multiple problems with a single investment of time and money. 45 Conceived for an era of complex, interlinked, social

and environmental challenges, a multisolving approach to Arctic subnational support would make the most use of already allocated funding and political will. This would require a first step of mapping Arctic state national funding and policies that support subnational projects, to then be analyzed for its application to subnational Arctic actors towards the accomplishment of the vision set forth. Such an approach has the co-benefit of building stronger, supportive relationships between national and subnational actors within Arctic nation states to implement clear and effective funding support and reinforce local Arctic capacity-building.

A Portal to the Arctic's Future Regime

Sociology, like ecology, makes use of the concept of 'tipping points.' But instead of a natural system stressed into creating a novel ecosystem, a tipping point in sociology is a point in time when a group or many group members rapidly and dramatically changes its behavior by widely adopting a previously rare practice. To change a governance system—to change the Arctic's governance system—will take a change of perception and valuing of those in power today. A case for regional decision-making led by the vision, needs, and knowledges of Arctic subnational actors, however, is influenced not by naiveté but by precedent.

The Arctic Council, and its predecessor the Arctic Environmental Protection Strategy (1991), were conceived in a decade of inspired vision in diplomacy after a long Cold War. As the Iron Curtain drew back and the West and (Soviet) Russia came together in a "zone of peace" to jointly address environmental pollutants and human health, history presented a moment where the improbable was possible.⁴⁷ World leaders abruptly changed behavior, tipping our world order from one of tension to peace and cooperation, setting precedents across the globe. In a similar vein, when inaugurated in 1996, the Arctic Council set a precedent as the only intergovernmental forum in Western global governance structures to permanently include Indigenous peoples as nearequal representatives alongside national government officials. As Permanent Participants, they have full consultation rights in connection with Arctic Council decisions. Thirty years later, the events of 2020 again provide an opportunity to depart from what once was dominant into a new, imaginative reality.

As society began lockdowns and social distancing to slow the spread of the novel coronavirus, Indian author Arundhati Roy penned a piece for the Financial Times titled, "The pandemic is a portal." She wrote,

Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next. We can choose to walk through it, dragging the carcasses of our prejudice and hatred, our avarice, our data banks and dead ideas, our dead rivers and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it.48

Each nation state, province, and city stands on the doorframe of such a portal. As leaders peer through the gateway of tomorrow, they are forced to decide what to keep and what to abandon. And, if offered a fresh canvas to sketch another world, then perhaps the first lines should be drawn in the Arctic—a place where the global world order and subnational actors meet through the prism of climate change.

A sentence from the introduction of this chapter bears repeating: For the world's northernmost residents, climate change is already an everyday, life-threatening continual state of emergency.⁴⁹ The summer of 2020 is a testament to that reality. In June, the Russian Arctic reached 100.4° F, the highest temperature in the Arctic since record-keeping began in 1885. The record was not a unique or unusual event in a climate-changed world; rather, June's single-day high was part of a month-long heatwave. This relentless heat melted sea ice to a record low extent in July, and has made traditional subsistence dangerous for skilled Indigenous hunters. It has fueled costly wildfires, some of which are so strong they now last from one summer to the next, and has sped up permafrost thaw, buckling roads and displacing entire communities. These climate impacts are not bound by the Arctic circle; they affect us all through a "global cascade of tipping points" that might lead "to a new, less habitable, 'hothouse' climate state." 50 But decentralizing power, buttressing paradiplomacy efforts, and investing in inclusive Arctic governance can work to avert the worst local and global consequences of the climate crisis by elevating the Arctic as a blueprint for a new regime order. Our shared home becoming an uninhabitable hothouse is not inevitable—it is a choice as nation-states walk through today's portal and into a post-COVID-19 world. In this moment, there is an opening to imagine a more sustainable, equitable, and secure order. Let's choose to begin building the support structures that order—and all who call Earth home—might need to survive.

Notes

- 1. Chris Gillis, "FIATA Warns Global Container Imbalance at 'Tipping Point," American Shipper, April 30, 2020, https://www.freightwaves.com/ news/fiata-warns-global-container-imbalance-at-tipping-point.
- 2. Quinn Phillips, "The Telemedicine Tipping Point Is Here, and Laws Have Changed to Make It Easier to Access," Everyday Health, May 19, 2020, https://www.everydayhealth.com/coronavirus/the-telemedicine-tippingpoint-is-here-and-laws-have-changed-to-make-it-easier-to-access/.
- 3. UN News, "Sudan: Coronavirus Could Be Tipping Point for 'Untold Suffering,' Bachelet Urged Sanctions Relief," United Nations, April 28, 2020, https://news.un.org/en/story/2020/04/1062782.
- 4. Kashmira Gander, "Greenland's Ice Sheet Reaches 'Tipping Point,' Melting Four Times Faster Than 2003," Newsweek, January 1, 2019, https:// www.newsweek.com/greenland-ice-sheet-melting-four-times-faster-2003reaching-tipping-point-1299649.
- 5. 3,471 miles between Washington DC and Utqiagvik; 3,535 miles between Copenhagen and Nuuk; 1,788 between Norilsk and Moscow; 1,296 miles between Igaluit and Ottawa, to name a few.
 - 6. In the context of this chapter, southern is non-Arctic.
- 7. Victoria Herrmann and Eli Keene, "A Continual State of Emergency: Climate Change and Native Lands in Northwest Alaska," The National Trust for Historic Preservation, November 15, 2016. https://savingplaces.org/stories/ a-continual-state-of-emergency-climate-change-and-native-lands-in-northwest-alaska#.XzP_oC05Qcg
- 8. Timothy M. Lenton, Hermann Held, Elmar Kriegler, Jim W. Hall, Wolfgang Lucht, Stefan Rahmstorf, and Hans Joachim Schellnhuber. "Tipping Elements in the Earth's Climate System," Proceedings of the National Academy of Sciences 105, 6 (2008), pp. 1786-1793, https://doi.org/10.1073/pnas.0705414105.
- 9. First introduced in AR5, the IPCC's Fifth Assessment Report climate change science, impacts, adaptations, and vulnerabilities.
- 10. Core Writing Team, R.K. Pachauri, and L.A. Meyer, eds, IPCC—Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Geneva: IPCC, 2014), pp. 117-130, https://www.ipcc.ch/site/assets/uploads/2018/05/SYR_AR5_FINAL_full_wcover.pdf.
- 11. Robert McSweeney, "Explainer: Nine 'Tipping Points' That Could Be Triggered by Climate Change," Carbon Brief, February 2, 2020, https://www.

carbonbrief.org/explainer-nine-tipping-points-that-could-be-triggered-by-climate-change.

- 12. E. Osborne, J. Richter-Menge, and M. Jeffries, "Arctic Report Card 2018," *National Oceanic and Atmospheric Administration 2018*, https://arctic.noaa.gov/Report-Card/Report-Card-2018/ArtMID/7878/ArticleID/772/Executive-Summary
- 13. R. Bintanja, "The Impact of Arctic Warming on Increased Rainfall," *Scientific Reports* 8, 1 (2018), pp. 1-6; Chris Mooney and Brady Dennis, "Rate of Ice Loss from Greenland has Grown by a Factor of Six Since the 1980s, Scientists Find," *Washington Post*, April 22, 2019, https://www.washingtonpost.com/climate-environment/2019/04/22/ice-loss-greenland-has-grown-by-factor-six-since-s-scientists-find/.
- 14. Bevis, Michael, Christopher Harig, Shfaqat A. Khan, Abel Brown, Frederik J. Simons, Michael Willis, Xavier Fettweis et al., "Accelerating Changes in Ice Mass within Greenland, and the Ice Sheet's Sensitivity to Atmospheric Forcing," *Proceedings of the National Academy of Sciences* 116, 6 (2019), pp. 1934-1939.
- 15. Fred Pearce, "As Climate Change Worsens, A Cascade of Tipping Points Looms," *Environment 350 Yale School of the Environment*, December 5, 2019, https://e360.yale.edu/features/as-climate-changes-worsens-a-cascade-of-tipping-points-looms.
 - 16. E. Osborne et al., "Arctic Report card 2018" op. cit.
- 17. Caesar, Levke, Stefan Rahmstorf, Alexander Robinson, G. Feulner, and V. Saba, "Observed Fingerprint of a Weakening Atlantic Ocean Overturning Circulation," *Nature* 556, (2018), pp. 191-196, https://doi.org/10.1038/s41586-018-0006-5; D.J. Thornalley, D.W. Oppo, P. Ortega, J.I. Robson, C.M. Brierley, R. Davis, I.R. Hall, P. Moffa-Sanchez, N.L. Rose, P.T. Spooner, and I. Yashayaev, "Anomalously Weak Labrador Sea Convection and Atlantic Overturning during the past 150 Years," *Nature* 556 (2018), pp. 227-230, https://doi.org/10.1038/s41586-018-0007-4.
- 18. O. Hoegh-Guldberg, D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K. Ebi, F. Engelbrecht, J. Guiot, Y. Hijioka, S. Mehrotra, A. Payne, S. I. Seneviratne, A. Thomas, R. Warren, G. Zhou, "Impacts of 1.5°C G lobal Warming on Natural and Human Systems". In: V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield, eds., Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-industrial Levels and Related Global Green-bouse Gas Emission Pathways, in the Context of Strengthening the Global Response

- to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty (Geneva: World Meteorological Organization Technical Document, 2018).
- 19. Merritt R. Turetsky, Benjamin W. Abbott, Miriam C. Jones, Katey Walter Anthony, David Olefeldt, Edward A.G. Schuur, Guido Grosse et al., "Carbon Release Through Abrupt Permafrost Thaw," Nature Geoscience 13, 2 (2020), pp. 138-143, https://doi.org/10.1038/s41561-019-0526-0; Christian Knoblauch, Christian Beer, Susanne Liebner, Mikhail N. Grigoriev, and Eva-Maria Pfeiffer, "Methane Production as Key to the Greenhouse Gas Budget of Thawing Permafrost," Nature Climate Change 8, 4 (2018), pp. 309-12, https:// doi.org/10.1038/s41558-018-0095-z.
- 20. J.D. Ford, D. Clark, T. Pearce, L. Berrang-Ford, L. Copland, J. Dawson, M. New, and S.L. Harper, "Changing Access to Ice, Land and Water in Arctic Communities," Nature Climate Change 9, 4 (2019), pp. 335-339, https:// doi.org/10.1038/s41558-019-0435-7; Henry P. Huntington, Mark Carey, Charlene Apok, Bruce C. Forbes, Shari Fox, Lene K. Holm, Aitalina Ivanova, Jacob Jaypoody, George Noongwook, and Florian Stammler. "Climate Change in Context: Putting People First in the Arctic," Regional Environmental Change 19, 4 (2019), pp. 1217-1223, https://doi.org/10.1007/s10113-019-01478-8.
- 21. Léandri-Breton, Don-Jean, and Joël Bêty, "Vulnerability to Predation May Affect Species Distribution: Plovers with Broader Arctic Breeding Range Nest in Safer Habitat," Scientific Reports 10, 1 (2020), pp. 1-8, https://doi. org/10.1038/s41598-020-61956-6; Karsten Hueffer, Mary Ehrlander, Kathy Etz, and Arleigh Reynolds, "One Health in the Circumpolar North," International Journal of Circumpolar Health 78, 1 (2019), 1607502, https://doi.org/10.1 080/22423982.2019.1607502.
- 22. C.S. Gerlach, P.A. Loring, A. Turner, and D.E. Atkinson, "Food Systems, Environmental Change, and Community Needs in Rural Alaska," in A.L. Lovecraft and H. Eicken, eds, North by 2020: Perspectives on Alaska's Changing Social-ecological Systems (Fairbanks, AK: University of Alaska Press, 2011), pp. 111-134.
- 23. Laura Kraegel, "Four Western Alaska Communities to Receive Large Halibut Donations after Dismal Walrus Harvest," KTOO, July 31, 2015, https://www.ktoo.org/2015/07/31/four-western-alaska-communities-receive-large-halibut-donation-dismal-walrus-harvest/.
- 24. James D. Ford, Tristan Pearce, Justin Gilligan, Barry Smit, and Jill Oakes, "Climate Change and Hazards Associated with Ice Use in Northern Canada," Arctic, Antarctic, and Alpine Research 40, 4 (2008), pp. 647-659, https://doi.org/10.1657/1523-0430(07-040)[FORD]2.0.CO;2.

- 25. Andreas Østhagen, "Swimming Away! Arctic Fisheries and International Cooperation," The Arctic Institute, October 22, 2019, https://www.thearcticinstitute.org/swimming-away-arctic-fisheries-international-cooperation/.
- 26. M.S. Wisz, O. Broennimann, P. Grønkjær, P.R. Møller, S.M. Olsen, D. Swingedouw, R.B. Hedeholm, E.E. Nielsen, A. Guisan, and L. Pellissier, "Arctic Warming Will Promote Atlantic-Pacific Fish Interchange," Nature Climate Change 5, 3 (2015), pp. 261-265, https://doi.org/10.1038/nclimate2500.
 - 27. Østhagen, "Swimming Away!" op. cit.
- 28. GAO, 2009, Alaska Native Villages: Limited Progress Has Been Made on Relocating Villages Threatened by Flooding and Erosion (Washington, DC: Government Accountability Office, 2009).
- 29. Simon Johnson, "U.S. Sinks Arctic Accord Due to Climate Change Differences: Diplomats," Reuters, May 7, 2019, https://www.reuters.com/article/ us-finland-arctic-council/u-s-sinks-arctic-accord-due-to-climate-changedifferences-idUSKCN1SD143.
- 30. Wesley Early, "Coastal Erosion Unites Villages of Kivalina and Louisiana Tribes in UN Complaint," Alaska Public Media, Jan. 23, 2020, https://www. alaskapublic.org/2020/01/23/coastal-erosion-unites-village-of-kivalina-andlouisiana-tribes-in-un-complaint/.
- 31. See: the 2016 Arctic Yearbook volume dedicated to the 20th Anniversary of the Arctic Council, https://arcticyearbook.com/arctic-yearbook/2016. Also: Abbe Tingstad, "Today's Arctic Diplomacy Can't Handle Tomorrow's Probems" (2020); RAND Corporation; Heather Exner-Pirot, Maria Ackren, Natalia Loukacheva, Healtehr Nicol, Annika Nilsson, and Jennifer Sepnse, "Form and Function: The Future of the Arctic Council" (2019); The Arctic Institute and Ragnhild Groenning (2016). "Why Military Security Should be Kept Out of the Arctic Council" (2016); The Arctic Institute and Ashley Postler, "Changing Arctic Governance and Options for the Arctic Council" (2019), all in Georgetown Security Studies Review, https://georgetownsecuritystudiesreview.org.
- 32. Danita Catherine Burke, "Why the New Arctic 'Cold War' Is a Dangerous Myth," The Conversation, December 13, 2018, https://theconversation. com/why-the-new-arctic-cold-war-is-a-dangerous-myth-108274.
- 33. This refers to the annexation of Crimea by the Russian Federation, Russian military's intervention in the Syrian Civil War, and the Russian campaign to influence the U.S. presidential election campaign of 2016.
- 34. Mathieu Boulègue, "Russia's Military Posture in the Arctic: Managing Hard Power in a 'Low Tension' Environment," Chatham House, June 2019, https://www.chathamhouse.org/sites/default/files/2019-06-28-Russia-Mili-

tary-Arctic_0.pdf. See also the chapters by Ernie Regehr, Whitney Lackenbauer and Oran P. Young in this volume.

- 35. Heather A. Conley and Matthew Melino, "An Arctic Redesign: Recommendations to Rejuvenate the Arctic Council," Center for Strategic and International Studies, February 2016, https://csis-website-prod.s3.amazonaws. com/s3fs-public/legacy_files/files/publication/160302_Conley_ArcticRedesign_Web.pdf.
- 36. L Hooghe, G.N. Marks, and A.H. Schakel, The Rise of Regional Authority: A Comparative Study of 42 Democracies (London: Routledge, 2010), p. 4.
- 37. Joan Nymand Larsen and Gail Fondahl, eds, "Arctic Human Development Report," Human Development 2 (2015), http://norden.diva-portal.org/ smash/get/diva2:788965/FULLTEXT03.pdf.
- 38. "Mapping Arctic Paradiplomacy," Observatoire de la Politique et la Securite de l'Artique, Dec. 6, 2019, Montreal, Canada. https://cirricq.org/act/cartographier-la-paradiplomatie-arctique-mapping-arctic-paradiplomacy/
- 39. Lawson Brigham, Heather Exner-Pirot, Lassi Heininen, and Joël Plouffe, "The Arctic Council: Twenty Years of Policy Shaping," Arctic Yearbook 2016, pp. 14-20, https://arcticyearbook.com/arctic-yearbook/2016/2016-preface.
- 40. Heather Conley and Matthew Melno, 2016, "An Arctic Redesign: Recommendations to Rejuvenate the Arctic Council." Center for Strategic and International Studies, https://www.csis.org/analysis/arctic-redesign; Ashley Postler, April 23, 2019, "Changing Arctic Governance and Options for the Arcitc Concil," Georgetown Security Studies Review, https://georgetownsecuritystudiesreview.org/2019/04/23/changing-arctic-governance-and-options-forthe-arctic-council/; Heather Exner-Pirot, Maria Ackren, Natalia Loukacheva, Healther Nicol, Annika E. Nilsson, and Jennifer Sepnce. February 5, 2019, "Form and Function: The Future of the Arctic Council." The Arctic Institute. https://www.thearcticinstitute.org/form-function-future-arctic-council/.
- 41. C. Windeyer, "Yukon, N.W.T. and Nunavut Differ in Outlooks for Renewable Energy," CBC.ca, 2014. www.cbc.ca/news/canada/north/hydroquebec-to-clean-up-13-500-litre-diesel-spill-in-inukjuak-1.3234189,
- 42. Fred Sagoonik. Interview, Shaktoolik Village Corporation, Recorded September 2, 2016 by Victoria Herrmann.
 - 43. Exner-Pirot, et al., op. cit.
 - 44. Ibid.
- 45. E. Swain, "The magic of 'multisolving'," Stanford Social Innovation Review. (2018).

- 46. Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference* (New York: Little, Brown and Co., 2006).
- 47. Kristian Åtland, "Mikhail Gorbachev, the Murmansk Initiative, and the Desecuritization of Interstate Relations in the Arctic,» *Cooperation and Conflict* 43, 3 (2008), pp. 289-311, https://doi.org/10.1177/0010836708092838.
- 48. Arundhati Roy, "The pandemic is a portal," *Financial Times*, April 3, 2020, https://www.ft.com/content/10d8f5e8-74eb-11ea-95fe-fcd274e920ca.
- 49. Victoria Herrmann and Eli Keene, "A Continual State of Emergency: Climate Change and Native Lands in Northwest Alaska," *The National Trust for Historic Preservation*, November 15, 2016. https://savingplaces.org/stories/a-continual-state-of-emergency-climate-change-and-native-lands-in-northwest-alaska#.XzP_oC05Qcg.
- 50. Timothy M. Lenton, Johan Rockström, Owen Gaffney, Stefan Rahmstorf, Katherine Richardson, Will Steffen, and Hans Joachim Schellnhuber, "Climate Tipping Points—Too Risky to Bet Against," *Nature*, November 27, 2019, https://www.nature.com/articles/d41586-019-03595-0.