

EPICENTERS OF CLIMATE AND SECURITY: THE NEW GEOSTRATEGIC LANDSCAPE OF THE ANTHROPOCENE

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SIGNAL, NOISE AND SWANS IN THE ARCTIC

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The Arctic is a unique maritime domain and physical environment that is changing faster than any other place on Earth. The trend of abrupt and substantial variations in ice coverage, increasing temperatures, waves and coastal erosion, and unusual weather patterns is likely to continue, given persistent emission of greenhouse gases, primarily by the world's industrialized countries. These transformations profoundly affect both weather and climate in much of the Northern Hemisphere, and spur political dynamics that force governments and organizations to form new policies toward the Arctic region. Changes in energy and commodity prices, global transportation infrastructure, environmental and governance policies, as well as Russia's relations with the outside world, all impact the trajectory and pace of Arctic development.

This article examines the “signals” (ongoing trends), the “noise” (short-term fluctuations) and the “swans” (the wild cards) in the environmental changes in the Arctic and their geopolitical implications. Considering the rate and scope of the multilayered regional transformations, this paper argues that it is best to focus on the signals and not the noise, or the short-term fluctuations, while hedging, to the best of our ability, against the swans.

The Arctic is changing faster than any other place on Earth. The collapse of ice coverage and thickness, increasing temperatures, waves and coastal erosion, and changing Arctic weather patterns are not only unprecedented in human civilization, but also likely to continue, given the persistent emission of greenhouse gases. These physical changes profoundly affect both weather and climate in much of the Northern Hemisphere, and spur political dynamics that increasingly link the Arctic to world affairs.

THE SIGNAL AND THE NOISE: PERSISTENT TRENDS VS. SHORT-TERM FLUCTUATIONS

ENVIRONMENTAL CHANGE

The most dramatic change in Arctic conditions over the past 30 years is the decrease in both coverage and thickness of the summer sea ice. The change in sea ice impacts virtually every other component of the Arctic, both natural and human ecosystems, transportation, exploration, hunting and subsistence, and potentially even the weather in much of the Northern Hemisphere.³

While there is much year-to-year variability in the amount of ice loss, the decadal signal is relatively constant, and shows a loss of 80,000 to 90,000 km² -- the size of South Carolina -- each year.⁴ Much of this loss occurs in the late summer and early fall. While Arctic sea ice is decreasing in the winter at a rate of 2.6 percent per decade, the summer sea ice is decreasing at a much greater rate of 13.3 percent per decade.

Equally important, long-term trends show the thickness of Arctic sea ice is thinning, a consequence of warmer air and ocean temperatures, and the thick multi-year ice is flowing into the Atlantic Ocean through the Fram Strait, the deepest gateway to the Arctic Ocean. Although reliable and sustained observations of ice-thickness are difficult to acquire, estimates based on submarine data show Arctic sea ice to be 33 to 50 percent thinner now than in the 1950s.

Determining the long-term trend signal from the year-to-year noise is particularly challenging. The Arctic is undergoing changes not previously observed by human civilization so there is little historical knowledge to draw upon. Until recently, many computer projections underestimated significantly the rate at which the Arctic was losing summertime ice. However, as observed in 2013 and 2014, the rate of the decrease is not linear and there will continue to be seasons where summer ice coverage increases for a few years.

While some of the most aggressive forecasts of an ice-free Arctic later this decade (i.e., Maslowski's assessments⁵), most projections are for a month of nearly ice-free conditions to occur prior to 2050.⁶ However, even with that relatively conservative projection, it is still likely that the Arctic could experience a few days or weeks of virtually ice-free conditions years or even decades earlier. While the substantive impact of that event may be limited, it may be another political wake-up call in the Arctic, similar to the impact of Russia's policies in 2007–2008, symbolically expressed by the illustrious planting of the Russian flag under the North Pole in 2007. The event, although broadly overstated, was accompanied by such dynamics as an increase in Russian military activity, anti-Western rhetoric, the slump in US/NATO–Russia relations, and the 2008 war in Georgia. The Russian policies and their perceptions outside have been major factors – along with the climatic deviations and Arctic energy euphoria -- that have caused other countries to take notice of the Arctic dynamics.

ECONOMIC DEVELOPMENT

While the environmental changes may be rapid, the economic development is proceeding at a slower pace. Although the ice is decreasing, its amount in any given location at a specific point in time is still subject to great uncertainty. This variability, along with other external influences such as commodity prices, regulations and policies, relative economic opportunities in non-Arctic regions, and, in the case of Russia, international sanctions, economic crisis and long-standing structural problems, all modulate the rate of expansion of human activity in the Arctic.

One example is the rate of growth of the Northern Sea Route (NSR), the shipping route extending from Europe across the top of Russia, exiting through the Bering Strait to the Pacific Ocean. Before 2010, the NSR functioned traditionally as a Russian domestic transport passage. However, after a significant slowdown in the 1990s, the NSR experienced rapid growth through 2013 with 71 vessels making the NSR transit, accounting for approximately 1.36 million tons of cargo.⁷ The number of transits decreased, however, to just 31 in 2014.⁸ Thicker ice, lower commodity prices, political tensions and sanctions had a cumulative chilling effect. While the signal is for growth of the NSR, it is not at the exponential rates the noise suggested between 2008 and 2013.

Tourist traffic on cruise ships is evolving in a similar manner. While tourism in Svalbard, Greenland and Canada has slowly grown over the past decade⁹, the growth has been variable, or noisy, both from year to year and within each region.

These large fluctuations make policy decisions much more challenging. While no nation or organization wants to be too late to react to changes in the Arctic, investing time and resources ahead of the true need is also not wise.

THE SWANS: WILD-CARDS

Nassim Nicholas Taleb defined the concept of “black swans” as events that are rare, have high impact, and are predictable only in retrospect.¹⁰ Taleb also discusses “grey swans,” or improbable and significant events that are on the edge of predictability. Given that the physical changes occurring today in the Arctic are beyond modern human experience, the Arctic has high potential for either type of “swan” events, as traditional risk and probability theories based on normal distributions may not apply. While we do not pretend to have predictive powers, it is helpful to think through scenarios that could happen and imagine their impact on a future Arctic. The following scenarios are simply examples of some events that, if they were to happen, could fundamentally change how the world views the Arctic.

SHIPPING AND OIL SPILL DISASTERS

While cruise ship and oil spill disasters are discussed frequently, there has been little written about the higher-order consequences beyond the immediate tragedy. In 2014, nearly 65 percent of cargo shipped along the Northern Sea Route was oil-based product.¹¹ What are the long-term impacts of a ship grounding or collision at the eastern or western edges of the NSR, sending oil into the territorial waters of other nations? Or the ramifications of a large cruise ship that hits a rock, ice, or catches fire in the Arctic, resulting in hundreds or thousands of deaths, exposing the lack of rescue capacity despite the Arctic Council's 2011 Search and Rescue (SAR) Agreement? What if most of those fatalities are citizens of a country not a full member of the Arctic Council?

Apart from potential disastrous environmental consequences, an oil spill in the Arctic is likely to impede the economic development in the region as well as threaten the way of life of the indigenous population. The long response time in the Arctic makes it necessary to reach a decision as quickly as possible, potentially made harder when the accident or its consequences encompass several state and non-state stakeholders.

A different type of shipping disaster would be a large cruise accident in the Arctic. As the sinking of the *Costa Concordia* demonstrated, human error and blunders on the ocean have not been eliminated by modern technology. Dozens of passengers died from an accident within sight of the Italian mainland. A similar accident in the remote reaches of Greenland or the Canadian Arctic is likely to have a far-higher death toll and would expose the inadequate SAR and law enforcement capacity in the region.

In addition to the tragedy of severe and sustained environmental damage or numerous fatalities, it is an open question how the geopolitical repercussions would unfold. Such an event could bring nations closer together to work in cooperation to prevent such future tragedies. The sinking of the *Titanic* in 1912 spurred the adoption in 1914 of the first international convention for the Safety of Life at Sea (SOLAS). Or, conversely, would another nation use the events as a pretext to fundamentally disrupt the Arctic Council and force a change in Arctic governance?

GREENLAND'S FUTURE

Another potential scenario considered in recent years is that Greenland “goes alone” by seeking independence and is aggressively courted by China. How might that alter the dynamics among Arctic nations and between Arctic and non-Arctic states? While the collapse in the oil markets in 2014 and a general slowdown in the economic viability of Arctic-related projects have dampened these tendencies, commodity prices will rebound at some future time. Have Europe and the United States fully thought through the consequences of an independent Greenland with about 50,000 citizens sitting astride a strategic strait to the Arctic and halfway between Europe and North America?

STRANGE BEDFELLOWS

Although unlikely today, it is possible that either the United States or Canada could force a resolution to the Northwest Passage (NWP) sovereignty issue at some point in the future. Canada claims the NWP as “internal waters,” while the United States and other nations state the maritime channel is an “international strait” as defined under the UNCLOS. Currently there is almost no routine shipping through the NWP, and Canada and the U.S. agree to disagree about the strait’s ultimate status. If the United States or Canada decided to force a resolution to the NWP sovereignty issue, would Russia and China side with Canada? Russia already defines the NSR as an integrated national transport route, and China might use the Canadian NWP precedent to bolster its own claims on control of the South China Sea. What would that support for China look like? Would there be pressure (asymmetric response) applied in other parts of the world? Could the dispute be enough to rupture the North American Free Trade Agreement (NAFTA) and realign trading blocks later this century?

THE RUSSIA FACTOR

Uncertainty connected to Russia’s domestic, foreign, and security policies and their impact on the Arctic is a recurring theme in circumpolar relations. While the Russian authorities have officially assured that they do not see any immediate threats in the Arctic, their anxieties and fears concern several regional issues. Commander in Chief of the Russian Navy, Admiral Viktor Chirkov, stated in March 2014 that the Arctic polar region could be potentially used to create new security threats against the whole Russian territory, which, he said, justifies the military modernization of both nuclear and conventional deterrence.¹² Since Putin’s return as president in May 2012, Russia has embarked on a large-scale military build-up in the region including all defense branches. One scenario is that sanctions against Russia continue, the military situation in Ukraine deteriorates and virtually all communication ceases between the West and Russia. Russia declares its entire Exclusive Economic Zone in the Arctic to be a security zone and requires permission for any vessel to sail in or through. Despite volatile commodity prices and economic recession, Russia has successfully completed upgrading its Arctic military capabilities and training to modern standards. How will the West respond? Would the Western countries unilaterally cede military superiority to Russia in the Arctic, or would the Arctic again become a contested operating theatre?

CONCLUSIONS

While the Arctic continues to change rapidly, that change will not be uniform in its rate or impact. The ever-increasing concentrations of greenhouse gasses in the atmosphere will continue to force changes in Arctic weather patterns and ice conditions for decades to come. However, economic development, trade routes, commodity prices, environmental and safety regulations, and geopolitical events that happen thousands of kilometers away from the Arctic will all impact the rate and scale of the regional development, which will not be

linear. One consequence of the variations in the political interest, and related investment and preparedness, in the Arctic may be a higher risk for accidents in the region, which will still continue becoming more accessible, even without an energy or transportation bonanza. Another risk is a greater danger of miscalculation. If we ignore the region and then are confronted with a sudden crisis, how much expertise and understanding will there be to best manage that (potential) future crisis?

These factors complicate policy options and actions, as governments do not want to be too late in a reactive mode nor too early by spending finite resources when they are not yet needed.

The best course of action is to consciously identify and separate out the long-term signals from the shorter-term noise while continually thinking through potential swan scenarios and how best to manage and minimize those risks.

For the United States, as for the other Arctic nations, now is the time to invest in long-term, foundational capabilities that will be required as the Arctic opens up. In addition to mapping, better weather, ocean and ice forecasting, and infrastructure capabilities, U.S. government agencies and the private sector should gain experience operating in the Arctic, a region that is still harsh and without much organic support capabilities. How best to partner with, learn from, and respect the native cultures that have lived in the Arctic for thousands of years must also be a component of any Arctic plan.

NOTES

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