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THE PACE OF CHANGE
Arctic State Changes: Implications
for Governance

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Introduction

The purpose of this short article is to persuade key stakeholders and other interested parties that:

- *The Arctic has experienced two state changes during the course of the last 25 years, one occurring in the late 1980s/early 1990s and a second unfolding during the 2000s,*
- *Each of these state changes has had or is having major consequences for Arctic governance, and*
- *Success in developing effective Arctic policies must take these consequences into account.*

The last 12-18 months have witnessed an unprecedented rise in public interest in the Arctic. Ironically, this development stems from the effects of (i) a series of disruptive impacts of climate change on Arctic biophysical and socioeconomic systems coupled with (ii) projections regarding economic opportunities in areas such as shipping, oil and gas development, fishing, and tourism that may open up as a consequence of the retreat and thinning of sea ice associated with climate change in the far North. The pattern of winners and losers likely to result from this development is one of the most dramatic consequences of the current state change in the Arctic; it will require serious consideration in any effort to address emerging governance challenges in this region in a manner that is equitable as well as effective. But this is not the first state change in the Arctic in recent times. An understanding of the prior state change, occurring during the late 1980s/early 1990s will help to set the stage for a consideration of ongoing changes in the Arctic and their implications for governance.

To explore these issues, I proceed as follows. The first substantive section of the article

provides a brief introduction to the idea of state changes in complex systems with special reference to the dynamics of socio-ecological systems. The next section examines the causes and consequences of the state change of the late 1980s/early 1990s, a shift marked by a decoupling of the Arctic from outside forces. The third section deals with the current state change in the Arctic, a development that differs from the earlier state change in ways that have far-reaching consequences for addressing the challenges of governance arising today. The concluding section looks toward the future of the Arctic from the perspective of governance. It argues that the fate of the region hangs in the balance today between a possible slide into a new, more conflictual era of 'high politics' and an alternative path marked by a swing toward ecosystem-based management or EBM.

What is a state change?

A state change is a sharp shift or flip of a complex and dynamic system that has far-reaching consequences for the functioning of the system, without eliminating the defining features of the system (Meadows 2008). Shifts of this kind are most familiar with respect to the behavior of ecosystems. Aquatic systems that shift sharply toward a state of eutrophication, predator/prey systems that turn a corner as a result of the depletion of prey species, and landscapes that undergo major changes resulting from prolonged droughts are all well-known examples. But similar state changes that focus on the dynamics of socioeconomic systems are also common. The collapse of the Soviet Union at the beginning of the 1990s, a case that has major implications for the argument I develop in this article, constitutes a prominent example. A current case centers on the flip of the global economic system during the last 18 months from a phase of growth into a condition of marked decline.

The same sort of dynamics occur in large socio-ecological systems defined by interactions

between human actions and biophysical processes (Walker and Salt 2006). A striking case of interest in the context of this article is the collapse of cod stocks and the resultant impacts on coastal communities in the Northwest Atlantic during the 1990s. Here, unregulated or under-regulated human harvesting led to severe depletions of the stocks, and the fisheries were closed (Harris 1998). Biophysical conditions (including climate change) have prevented recovery of the stocks during the intervening years. Another dramatic example involves the Dust Bowl of the 1930s in the American Southwest. Agricultural practices poorly suited to the biophysical character of the system made this area vulnerable to severe stress. Prolonged drought during the 1930s not only undermined the productivity of the region but also destroyed many human communities, as residents simply abandoned their homes and moved elsewhere (Egan 2006).

State changes have a number of things in common that make them particularly interesting and challenging from the perspective of governance. Such changes involve non-linear processes. That is why observers frequently describe them as system flips. They often occur abruptly or over short periods of time. In the usual case, state changes occur quickly once the relevant system crosses some critical threshold or, in a currently fashionable phrase, reaches a tipping point. In most cases, the forces of change have been accumulating for some time, but there is a natural tendency to focus attention on the tipping points or the triggers that precipitate abrupt change. Many observers focus on the subprime mortgage problem, for example, in thinking about the current economic crisis. But it is clear that conditions making the system vulnerable to this sort of crisis had been building for some time. State changes differ from system transformations in the sense that they do not alter the fundamental or defining features of the relevant systems (Gunderson and Holling 2002). Despite the impact of major changes, for example, we are still able to recognize the defining

features of the Northwest Atlantic or the area of the American Southwest affected by the Dust Bowl.

State changes are generally irreversible or, at a minimum, extremely hard to reverse. This quality can be desirable. The reforms instituted in China at the end of the 1970s, for instance, launched an enduring cycle of economic growth that has brought prosperity to some and lifted large numbers of people out of extreme poverty. As the example of the collapse of cod stocks in the Northwest Atlantic illustrates, however, there is often no going back to the status quo. It is not enough simply to terminate disruptive actions to ensure that preexisting conditions will reemerge. Perhaps the most dramatic case in point regarding irreversibility is the Earth's climate system in which changes resulting from increasing concentrations of greenhouse gases in the atmosphere are likely to unfold over centuries or millennia and to produce conditions that differ from key features of the climate system we experience today. When abrupt and irreversible changes produce outcomes that are also nasty in terms of human or social welfare on a large scale, a profound challenge of governance arises.

Arctic state change #1 – The late 1980s/early 1990s

Throughout the first several decades of the postwar era, the cold war was the dominant force in the Arctic. Divided between two armed camps with the Soviet Union on one side and the US and its NATO allies on the other, the region became a theatre of operation for the deployment of advanced weapons systems, including manned bombers carrying cruise missiles and nuclear submarines carrying submarine-launched ballistics missiles. The Soviet Union stationed large contingents of armed forces in the Eurasian Arctic; the US built the Distance Early Warning (DEW) Line across Alaska, Canada, and Greenland and established major military bases in remote locations like northwestern Greenland. Under

the circumstances, global concerns dominated the region, a condition that not only made it hard to frame issues in an Arctic-specific manner but also militated against efforts to approach the Arctic as a distinctive region with a policy agenda of its own.

A combination of drivers, largely socioeconomic in character, produced a striking state change in the Arctic during the late 1980s/early 1990s (Osherenko and Young 1989). Prominent among these were the waning of the cold war, the collapse of the Soviet Union, and the subsequent removal of barriers to circum-Arctic interactions in a host of areas ranging from scientific collaboration to enhanced connections among the Arctic's indigenous peoples and the launching of cooperative ventures on the part of subnational governments including states, provinces, oblasts, counties, and territories. An iconic moment in the course of this state change was Mikhail Gorbachev's Arctic zone of peace speech delivered in Murmansk on 1 October 1987. Stressing opportunities for cooperation in a number of areas, the Soviet President called for the establishment of "... a genuine zone of peace and fruitful cooperation" among the Arctic states (Gorbachev 1987). Of course, it is an exaggeration to ascribe great causal significance to an event of this sort. Yet, the Arctic, which had been treated by many as a cold war arena prior to this time, now emerged as a locus for a wide range of experiments in regionwide collaboration.

Once the floodgates opened, new initiatives of all sorts sprouted in what had previously been a barren landscape. Science led the way with the creation of the International Arctic Science Committee (IASC) in 1990. This was followed in rapid succession by the establishment of the Arctic Environmental Protection Strategy (AEPS) in 1991, the Northern Forum (NF) in 1991-93, and the Barents Euro-Arctic Region (BEAR) in 1993. The AEPS morphed into the more ambitious Arctic Council (AC) in 1996. Together, these developments soon led to the creation of the Indigenous Peoples Secretariat, the University of the Arctic, and the

Northern Research Forum. By the mid to late 1990s, what had seemed previously like one of the least favorable realms for cooperative ventures had blossomed into an arena for transboundary cooperation that made the Arctic the envy of many struggling to generate interest in cooperative initiatives in other parts of the world. By decade's end, the Arctic region remained recognizable as an ocean surrounded by the territories of a number of well-established states constituting an area of interest to many as a homeland for a variety of indigenous peoples and as a storehouse of valuable natural resources (AHDR 2004). But thinking about the character of this region as a focus of public policy had undergone a dramatic shift.

With regard to issues of governance, the state change of the late 1980s/early 1990s was essentially a delinking or decoupling shift. Of course, this does not mean that the region became irrelevant to those thinking in global strategic terms. Oil continued to flow from Prudhoe Bay in Alaska along with gas from several supergiant fields in Northwest Siberia. Nuclear-powered submarines still roamed the Arctic Ocean on a fairly regular basis. Still, this state change gave rise to a substantial flow of activities that were regionwide and Arctic-specific. Both the Arctic Council and the Northern Forum, for example, are bodies designed to bring together representatives of all the key Arctic players to address issues of particular concern to the Arctic. As we shall see, non-Arctic states like China, France, Germany, and the U.K. have chafed at being relegated to observer status in the AC, and it has proven impossible to ignore the links between the Arctic and the outside world in thinking about the impacts of persistent organic pollutants or climate change on northern ecosystems and human communities. But the shift from an emphasis on the concerns of southern capitals, like Washington, Ottawa, Copenhagen, and Moscow, to an emphasis on issues of concern to the Arctic's residents was dramatic in the wake of this state change.

At the same time, it is important to note that the governance systems emerging in the Arctic during this period focused almost exclusively on capacity development and knowledge generation in contrast to the exercise of regulatory authority (Young 2009a). The Arctic Council is a clear case in point. Based on the 1996 Ottawa Declaration, the AC is without legal personality and has no authority to develop regulatory arrangements, much less to monitor compliance and to take steps to deter or punish violators. Under the circumstances, the successes of the Council, in such forms as providing a forum for the articulation of indigenous peoples concerns, commissioning scientific assessments that have made a difference in the realm of policymaking, and amplifying the voice of the Arctic in addressing global issues, such as persistent organic pollutants and climate change, are remarkable. Few students of public policy or international relations would have anticipated that a body with such sharp constraints on its authority and severe limitations on its resources would have managed to achieve the significant results that are rightly attributed to the work of the AC during its early years of operation. At the end of the day, the impacts of this delinking state change on governance were mixed. The change freed the region to focus on Arctic-specific concerns and, in the process, to develop the idea of the Arctic as a distinctive region with a policy agenda of its own. But the flip side of this coin was a separation between Arctic governance and the pursuit of governance on a more global scale. While this did not present a challenge in cases where issues could be addressed effectively at the regional level, it loomed increasingly as a limitation in cases like climate change where the Arctic is on the receiving end of human activities occurring on a global scale.

Arctic state change #2 – The 2000s

As we move deeper into the 21st century, a new set of changes have come into focus in the Arctic treated as a socio-ecological system. This second state change is a work in progress; it may well be premature to attempt to characterize it clearly, much less to analyze its implications for governance. Nevertheless, the basic forces at work are relatively easy to identify. They center on global environmental change and on global social change or what is typically referred to as globalization. The Arctic is already experiencing dramatic impacts of climate change. This is not only a matter of the melting of sea ice as emphasized in the popular press; it is also a matter of the deepening of the active layer of permafrost and the dramatic damage to housing and all sorts of infrastructure resulting from this development (ACIA 2004). For its part, globalization is strengthening the links between the Arctic and the outside world on a number of fronts (AHDR 2004). An obvious case in point is the growing pressure to exploit the region's reserves of oil and gas in light of the political instability of Middle Eastern producers and the rising competition for oil and gas arising from the rapid industrialization of China. But other forms of globalization are prominent as well. The development and dissemination of new forms of information technology, for instance, have made it possible for those located in remote parts of the Arctic to follow world events in real time and to develop tastes for goods and services that have no analog in traditional Arctic cultures.

The iconic moment of this state change may well turn out to be the public release of the *Arctic Climate Impact Assessment* (ACIA) prepared under the auspices of the Arctic Council and submitted to the Council formally at the November 2004 ministerial meeting in Reykjavik, Iceland (ACIA 2004). This report, combining an accessible and appealing overview together with in-depth scientific background papers, quickly achieved a high level

of visibility not only in the scientific community concerned with climate change but also with attentive publics located far beyond the confines of the Arctic. ACIA demonstrated beyond a reasonable doubt that climate change is already producing major impacts on Arctic ecosystems and social systems, that a number of feedback processes could lead to rapid climate change events (RCCEs) in the region during the foreseeable future, and that what is happening today in the Arctic may well be a harbinger of things to come in other parts of the Earth system. With the publication of ACIA, the debate about the reality of climate change in the Arctic ended, and a more sustained investigation of its probable impacts and options for adapting to them commenced.

The result, reflected in the dramatic rise in public interest in the Arctic, is profoundly ironic. It is clear that this second state change is fraught with dangers for those living in the Arctic in such forms as storm-driven erosion washing away coastal communities, enhanced dangers encountered by those engaged in subsistence hunting, and the destruction of many forms of infrastructure (e.g. roads, airfields, utility systems). But what has caught the attention of the outside world is the prospect that biophysical changes, especially the melting of sea ice, is opening up a range of new opportunities in the Arctic in such forms as the exploitation of offshore oil and gas, the development of new shipping routes, the emergence of new fisheries, and the growth of tourism (Graf 2007; Borgerson 2008). At this writing, the evidence suggests that efforts to take advantage of new opportunities associated with the impacts of climate change in the Arctic will outweigh meaningful responses to threats to the welfare of vulnerable human communities. Whether we like it or not, there is every reason to believe that this is the reality we will face in the coming years.

The prospects for enhanced oil and gas development, shipping, and so forth are largely speculative at this stage. Projections of recoverable reserves of oil and gas in the offshore

areas of the Arctic are based on a minimum of hard evidence. With some exceptions (e.g. the Shtockman gas field in the Barents Sea), evidence from test wells is lacking. There is no guarantee that commercial shipping in the Arctic will prove profitable during the foreseeable future. As industry representatives regularly point out, what counts is the cost (measured in terms of time and equipment requirements) of moving goods from point A to point B rather than the number of miles traveled. The probability that commercially significant fisheries will develop in the Arctic any time soon is impossible to compute. It may well turn out that the current hype regarding emerging opportunities in the Arctic evolves into a case of great expectations that fail to materialize on any grand scale.

Nonetheless, these expectations are already producing developments that have major implications for governance in the Arctic. Two of these developments deserve particular attention here. First is the growing interest on the part of the Arctic rim states in exercising extended jurisdiction over the seabed in the Arctic beyond the limits of the Exclusive Economic Zone under the terms of Article 76 of the UN Convention on the Law of the Sea (Proelss and Müller 2008). Although it may take some years to resolve fully competing claims in this area, there are good reasons to believe that they will eventuate in extended coastal state jurisdiction over the sea floor in the Arctic. One interesting consequence of this development from a governance perspective is the divergence of interests arising from this focus on control of the seabed between the five Arctic rim states and the other three members of the Arctic Council (Finland, Iceland, and Sweden), not to mention an array of non-Arctic states.

The second major consequence takes the form of a growing interest in what goes on in the Arctic on the part of non-Arctic states. Fueled by an interest in the region's natural resources as well as a professed concern for environmental protection and the welfare of

indigenous peoples, the European Parliament passed a resolution in October 2008 calling for the development of new approaches to Arctic governance, including the idea of negotiating an Arctic treaty of some sort. The European Commission followed up in November with an extensive communication on the Arctic, and an EU Arctic policy statement is widely expected to be announced in the near future (European Commission 2008). Although its approach is more low-key, China is also taking steps to enhance its knowledge of Arctic issues and to establish its position as a legitimate stakeholder in Arctic affairs. Predictably, the Arctic rim states have moved to head off such claims, asserting in the process that they are committed to acting as good stewards in the Arctic, that outside initiatives regarding Arctic policy are both unwelcome and unneeded, and that there is no reason to think about negotiating any sort of treaty covering Arctic issues (Ilulissat Declaration 2008).

In contrast to the state change of the late 1980s/early 1990s, the change unfolding in the Arctic today is a linking change. Both climate change and the prospect of increased shipping, oil and gas development, and so forth are driven by forces that are global in scope. Public interest in the Arctic is rising, but largely due to the actions and interests of outsiders rather than to any concern about the fate of Arctic communities or ecosystems in their own right.

What are the implications of this linking state change for the pursuit of Arctic governance? To begin with, we are experiencing renewed contention regarding the identity of legitimate stakeholders in the region. Following a lively debate during the state change of the late 1980s/early 1990s, consensus emerged on the proposition that Arctic affairs are and should be the province of the Arctic 8 (the five Nordic countries plus Canada, Russia, and the U.S.). The delinking character of this state change served to diminish interest in Arctic affairs on the part of others. Today, this consensus is eroding. The Arctic rim states (Canada, Denmark, Norway, Russia, and the U.S.) have started to take actions without consulting

Finland, Iceland, and Sweden. Even more significant is the rise in interest in Arctic affairs among non-Arctic states and the European Union. Given the linking nature of the current state change, this development is by no means surprising. In all likelihood, the Arctic states will find it impossible to deny a role in Arctic affairs to a number of non-Arctic states and the EU as this state change continues to unfold. This is not necessarily a bad thing. But the acceptance of new actors as legitimate stakeholders in Arctic affairs will alter substantially the dynamics of efforts to address issues of governance in the region.

There are also good reasons to expect an increasing politicization of such efforts in the coming years. The Arctic Council eschews matters of high politics (the Ottawa Declaration states explicitly that the AC should not deal with matters of military security) and lacks the authority to establish and implement regulatory arrangements. But it has had considerable success in sponsoring influential scientific assessments (e.g. AMAP's *State of the Arctic Environment Report* in 1997; ACIA in 2004) and in bringing Arctic issues to the attention of those dealing with issues like long-range transboundary air pollution and climate change at the global level (Downie and Fenge 2003). Unless the status and authority of the Arctic Council are upgraded substantially, a development that does not seem likely to occur any time soon, it is probable that the current state change will have the effect of marginalizing the efforts of the AC. The activities of the Council aimed at framing issues and setting the agenda clearly made a difference during its first decade of operation. But as we move into a phase of hard bargaining over regulatory measures relating to shipping, oil and gas development, fishing, and so forth, the limitations of the Council are likely to become increasingly apparent.

As these comments imply, the need to create new or more effective regulatory arrangements in the Arctic is on the rise. As a variety of actors take steps to exploit the

resources of the Arctic, we will need to move in a concerted fashion to introduce a mandatory Polar Code for Arctic shipping, to establish or upgrade Regional Fisheries Management Organizations (RFMOs) encompassing major segments of the Arctic, to create an Arctic tour operators association, and to craft effective measures both to prevent and to cope with threats (e.g. oil spills) to the Arctic environment (Rayfuse 2007). Of course, the UN Law of the Sea Convention (LOSC) is fully operational in the Arctic, and it provides a constitutive framework within which to address regulatory issues of this sort. But it does not include the detailed regulatory measures required to govern specific activities occurring under Arctic conditions. There is little or no likelihood that the Arctic Council can be reconfigured to take on these regulatory tasks and to perform them effectively. It follows that efforts to find ways to address such regulatory issues effectively are destined to loom large as priority concerns in the realm of Arctic governance during the coming years.

Whither the Arctic?

The Arctic stands now at a crossroads where one track leads toward high politics with its emphasis on control, jurisdictional conflicts, and the prospect of the emergence of a new ‘great game,’ while the other track leads toward more cooperative and holistic measures needed to provide the basis for practicing ecosystem-based management in the Arctic (Young 2009b). These two tracks are fundamentally incompatible; it is hard to imagine powerful actors seeking to control the Arctic’s natural resources in a manner that allows for success in the practice of EBM. It is perfectly possible, however, that both tracks will continue to develop for a period of time during which the forces leading in each direction play out and compete, at least implicitly, for dominance in charting the Arctic’s course over the next several decades.

There is nothing unfamiliar about the resultant cognitive dissonance in the realm of

public policy. At some stage, nonetheless, the balance should tip in favor of either the high politics track or the EBM track with respect to the future of the Arctic. To listen to the pundits, who are talking about who owns the Arctic and envisioning an Arctic meltdown, a very cold war over the Arctic's resources, and an Arctic perfect storm leading to armed clashes, it may seem that the outcome is a foregone conclusion. We are moving into a period of growing conflict in the Arctic in which nation states (or groups of states in the case of the EU), motivated largely by a desire to gain control over and benefit from the extraction of the region's natural resources, confront each other in a manner that is bound to generate conflict and can easily lead to a remilitarization of the Arctic and the outbreak of one or more severe crises (Borgerson 2009). If nothing else, alarmist accounts of this sort make for dramatic and rousing copy in popular media.

Still, it is by no means apparent that this is the inevitable fate of the Arctic in the wake of the current state change in the region. We know that the Arctic is a complex and dynamic region that is coupled increasingly tightly to global forces with regard to matters like climate change and the long-range transport of contaminants such as persistent organic pollutants. There is nothing to be gained in terms of "good stewardship" from carving up the Arctic in jurisdictional terms and acting in a manner dictated by the traditional norms of high politics. In contrast to Antarctica, there is no prospect that the Arctic can be demilitarized and managed as an area dedicated to peace, the protection of the natural environment, and the conduct of science. Even so, the Arctic could emerge as a region that lends itself to experiments in ecosystem-based management, even though it is a homeland for sizable groups of permanent residents and a storehouse of natural resources that are attractive to industrialized societies located far to the South. The challenge here is not to declare the Arctic off limits or to treat it as a pristine area in which human activities are either banned

or restricted to a bare minimum. Rather, the Arctic presents us with a governance challenge featuring the desirability of maintaining its relatively unspoiled character, even while allowing the development of a variety of human activities on a properly managed basis. If we can meet this challenge successfully in the Arctic, we may learn a lot about what is needed to address such matters effectively in the more complex circumstances characterizing the socio-ecological systems of the mid-latitudes.

A Final Note

I have presented these thoughts about the implications of state changes for governance in the Arctic in a largely analytic manner. Thus, I have tried to identify the sources of state changes, to differentiate between linking changes and delinking changes, and to comment on the nature of the state change unfolding in the Arctic at the present time. But I believe those of us who have worked on Arctic issues for a long time and who care about the future of the region have an obligation to become engaged in these processes as players rather than simply standing by as passive observers. In my view, the ecosystem-based management track is far superior to the high politics track not only for the welfare of the Arctic itself but also from the perspective of sustainable development at the global level. If my analysis is correct, the future of the Arctic currently hangs in the balance, and there are opportunities to exert influence, at least in a small way, that may make a difference regarding which track becomes dominant over the next decade. I intend to do whatever I can to improve the odds on the success of the ecosystem-based management track. I hope that others who care about the Arctic as a distinctive socio-ecological system will do the same. I would be ready, able, and willing to join forces with them in the interests of meeting the current challengers of governance in the Arctic in a constructive manner.

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