Transforming theoretical tensions into new analytical tools: Lessons from the Arctic

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Annika E. Nilsson, Stockholm Environment Institute[1]
Gunhild Hoogensen, University of Tromsø[2]
Heather Nicol, Trent University[3]

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Abstract

This paper examines the new challenges posed by global environmental change and their impacts on international politics. Based on a case study of the Arctic, it explores and highlights the limitations of various competing theoretical approaches for understanding international politics and proposes a new framework. The Arctic region has gone through two major shifts in political climate in the past 25 years, first from Cold War frozen international relations to cooperation and region-building and, more recently, a shift towards increased focus on sovereignty, energy security and economic interests. Rapid climate change and declining sea ice are major factors in an increased interest in the region's fossil fuel resources and potential new shipping routes. A major question addressed in this paper is how such changes in the environment can be taken into account in theories of international politics. With reference to security, critical geopolitics, mainstream IR theories, as well as earth system governance and resilience theories, the paper highlights the Arctic as a complex, interconnected social-ecological system, where issues of security and geopolitics are interlinked with rapid environmental change. By identifying common concerns and connecting points among the theoretical approaches, the paper examines the potential for new analytical frameworks for monitoring international politics in times of rapid environmental change.

[1] Kräftriket 2 B, SE 106 91 Stockholm, Sweden; annika.nilsson@sei.se (corresponding author)
[2] gunhild.hoogensen@uit.no
[3] heathernicol@trent.ca

1. Introduction

The global environment is currently changing at an unprecedented rate and in ways that are closely interlinked with human activities (Steffen et al. 2002). One of the most illustrative examples is the rapid decline of Arctic sea ice in recent years (National Snow and Ice Data Center 2009), with its links to global climate change. Other changes occur more slowly but with impacts that accumulate over time in ways that affect ecosystem functions and human well being (Millennium Ecosystem Assessment 2005), such as biodiversity loss, eutrophication, and chemical pollution (Rockström et al. 2009). The causes of environmental change are often complex and can include local (e.g. local pollution; use of natural resources), regional (e.g. land use/eutrophication; air pollution) and global drivers (e.g. climate change, long-range transport of persistent organic pollutants; global resource demands).

Rapid environmental change poses new challenges not only to ecosystems, but also to the global perspectives, governance structures, and resulting policy approaches that are available for addressing both mitigation of the stressors and adaptation to new circumstances. Studies of local social-ecological systems have provided a wealth of knowledge about conditions that prevent tragedies of the commons, but have highlighted that global change adds another dimension to the challenge (Ostrom et al. 1999). Recent analyses highlight the importance of interlinkages among different social-ecological systems as well as interplay between issue areas and levels of governance (Folke et al. 2007; Galaz et al. 2008; Young 2002). A major challenge is to develop ways of analyzing how governance systems can handle such connectivity (Brondizio et al. 2009; Young et al. 2006).

Analysis of governance within regions or issues that involve the jurisdictions of several nation states also demands attention to the dynamics of international politics and how these dynamics are perceived and operationalized in policy. Generally, studies of social-ecological systems have not addressed questions of international politics, while discussions about environmental problems within many of the mainstream theories of international relations generally have been fragmented or parochial at best. Additionally, international relations analyses of the Arctic have often been limited and narrow, using either a traditional geopolitical analysis, or regime theory, or state-based security analysis, without seeing the important interconnections and insights between these perspectives. However, recent developments in the Arctic have shown that changes in the physical environment, such as the rapid decline of sea ice, can have profound effects on the international political climate. Some analysts go so far as to suggest that these physical changes in the Arctic have profoundly altered the political landscape, from a previous atmosphere of cooperation to one in which geopolitical concerns and security interests have become much more dominant (Young 2009a). A central aim of this paper to discuss the possibilities of creating new analytical tools that draw upon insights from studies of both local social-ecological system and international politics and which could eventually be used to identify

opportunities and challenges in international cooperation for addressing environmental problems and their drivers.

Both previous and recent developments within the Arctic provide the empirical base upon which this first sketch for an analytical tool is made. The impacts of global climate change are particularly visible in this region because of sensitivities in the Arctic social-ecological system and because climate change is occurring more rapidly here than in the rest of the world (ACIA 2005; Anisimov et al. 2007; ISAC 2009). Impacts of climate change that are already apparent in the Arctic include declining sea ice, melting glaciers, thawing permafrost, and landscape changes with the invasion of bushes and small trees in previously tree-less areas of the low Arctic tundra. Impacts such as these have posed an addition challenge for local people throughout the region, who are already facing many other problems, such as unemployment, out-migration, lack of local economic resources, and a struggle to maintain local cultures in the face of economic and cultural globalization (AHDR 2004). Arctic climate change has also gained attention because many impacts have potential global feedbacks. Prime examples are how declining ice and snow affect Earth's albedo and how melting permafrost can increase emissions of methane, both of which would add to the global warming.

Arctic climate change has also had political ramifications. Most notable is that the rapidly melting sea ice in the Arctic Ocean in 2007 spurred increased political and economic interest in the region's resources and potential for more accessible shipping routes. There are estimates that the Arctic holds a fourth of the world's remaining oil and gas (AMAP 2008). Political statements from several Arctic states as well as from the European Union emphasize the importance of these and other natural resources for energy and economic security. Recent policy statements also highlight issues of sovereignty and the need to negotiate claims to regions of the Arctic that have become economically valuable in the light of declining sea ice (Alexandrov 2009; Borg 2009; Canadian Government Office of Foreign Affairs 2009; Council of the European Union 2009; Lomagin 2008; US Government 2009; Vasiliev 2008).

Climate change thus has brought on a need for more complex analyses of the political dynamics in the region. Although the political challenges in the region have always been complex, up until recently political analysis in the region has been dominated by uni-thematic approaches, whereby the1970s and 80s were focused narrowly upon state-based Cold War tensions, and the 1990s focused on the transformation of the international space of the Arctic towards growth in regional cooperation and a focus on mutual interest for sustainable development. Climate change however has increased the visibility of a greater complexity of simultaneous cooperation and tension in the region. Could these shifts in political climate have been foreseen within current, dominant theoretical frameworks of international relations that have been thus far employed for the Arctic? Based on a review of different theoretical traditions in relation to Arctic realities, we argue that key perspectives are missing and need to be added in order to develop new analytical tools for international relations that can adequately take global environmental change into account.

The remainder of the paper is divided into three major sections. The first is a very brief introduction to the development of Arctic international space in the past 150 years, aimed mainly at readers who are not familiar with the region. The second provides a critical analysis of current IR theories in relation to the Arctic. The third part provides the outlines of a new analytical framework for understanding international politics in times of rapid environmental change.

2. A brief guide to international politics in the Arctic over time

This section provides a brief introduction to the development of international politics in the Arctic in relation to three key issues: structure, actors, and motives/drivers. The discussion is divided into four major time period: pre World War I, the war years and the Cold War period, the region building period starting in the mid 1980s, and the most recent development post 2007. The text is partly based on a more extensive review by Nilsson (2010).

Pre World War I

The political climate of Arctic international relations up until World War I can be described as having a strong basis in colonialism and nationalistic interests but space available also for other transnational actors such as scientists and the nature conservation movement. Some of the international political activities were aimed at guarding "common" interests. Self-determination of indigenous peoples generally eroded as the role of states increased.

The increasing influence of nation states as political actors is visible in the establishing of national borders in regions where indigenous people and other northern inhabitants had previously moved freely. Indigenous peoples initially retained a certain legal status in the own right. An example is the so-called Lapp Codicil that amended the 1751 border treaty between Sweden and Denmark (which at the time include Norway) and ensured Saami rights, e.g. regarding free movement across the border (Koivurova 2008; Samiskt informationcentrum 2005). However, many rights and the role indigenous peoples as transnational actors eroded as national influence increased. National influence arrived somewhat later in the North American Arctic and occupied much of the late 19th century, i.e. the acquisition of Alaska from Russia, and the division of the North America Arctic into American and first British, then Canadian territory. These borders were being negotiated with little regard to indigenous peoples.

Other transnational actors in the pre- WWI era were companies dealing with fur trade and whale hunting, who had been active in the Arctic since the 1600s. Scientists were initially actors in the colonial expansion of nation states but by the late 1800s, many of them became increasingly inspired by an ideology of internationalism and started building their own transnational networks (Crawford 1992; Nilsson 2009a). A movement of worldwide nature protection also emerged as a transnational actor, for example in efforts to protect musk ox in Greenland and reindeer in Spitsbergen (Young & Osherenko 1993; Selin and Linnér 2005).

As national borders were being established, formal cooperation between states became increasingly important, e.g. the Convention for Preservation and Protection of the Fur Seal

Treaty from 1911. It also became important to regulate responsibilities in non-claimed territories, such as Svalbard, where some were interested in nature protection and others in ensuring good conditions for industrial development (Wråkberg 2006), which led to negotiations for the Spitsbergen Treaty. The process started already in 1908, with strong involvement of actors from both nature conservation and science, but was interrupted by the outbreak of WWI. When it was resumed as part of the peace negotiations, state interests had become more prominent and keeping the Arctic open to colonialism was at the heart of the agreement (Wråkberg 2006).

The war years and the Cold War period

With WWI, the state influence on Arctic international politics had increased at the expense of other actors and this development was further accentuated during World War II with further state control of northern territory, including a strategic military presence. The increasing role of nation states in Arctic international politics continued during the Cold War, where the self interest of the two superpowers was the defining feature and key concepts of realism, such as power and self help, serves well to describe the political climate. Indeed, in North America WWII saw a new interest and occupation of the Arctic, as the system of radar stations for Distant Early Warning (D.E.W.) cemented cooperation between American and Canadian governments over defence (Haycock and Neilson, 1990).

With the UN Convention of the Law of the Seas (UNCLOS), state control formally reached the Arctic Ocean when it gave states the right to exclusive economic zones 200 nautical miles out to sea (Heininen 2004). As a consequence, areas that had been open to research only a decade earlier became increasingly restricted (Johnson Theutenberg 1982).

Globally, attention to environmental change rose to the international political agenda, but the Arctic was initially left out of this trend. Instead Cold War bi-polar dynamics remained until the mid 1980s, with only a few examples of international cooperation in the region. However, though the focus of analysis was dominated by Cold War tensions, other actors were nevertheless active, even if they were not “visible”. During the Cold War period some indigenous peoples started to organize across national borders, with the Saami Council established in 1956 and the Inuit Circumpolar Conference in 1977, but these organizations did not play a defining role in the international politics of the Arctic region until much later.

Region-building

Already in 1985, Young (1985) highlighted a new “Age of the Arctic” in foreign policy. When Soviet President Gorbachev in his famous Murmansk speech in 1987 proclaimed the Arctic as a zone of peace, it became the starting point for diplomatic efforts from Norway, Finland and Canada to formalize the new spirit of cooperation (Young 1998). It eventually resulted in negotiations that led to the Arctic Environmental Protection Strategy (AEPS) in 1991 followed in 1996 by the creation of the Arctic Council as high-level policy forum for Arctic cooperation. This development of Arctic cooperation during the 1980s to early 2000s has been described by several authors, including Young (1998), Archer and Scrivener (2000), Tennberg (2000),

Heininen (2004), Keskitalo (2004), and Schram Stokke and Hønneland (2006). A major activity of the AEPS/Arctic Council has been to conduct scientific assessments and it soon became a cognitive forerunner in international environmental politics (Schram Stokke 2006). This period of region-building has also seen the birth of a number of other cooperative arrangements, including fora for political discussions in specific subregions (e.g. Barents-Euro-Arctic Region), among Arctic parliamentarians and among subregional governments (Northern Forum), as well as platforms for scientific collaboration (e.g. IASC, Northern Research Forum). Simultaneously, while global environmental agreements and global scientific assessment processes became increasingly important in Arctic politics, the political landscape in the circumpolar north became characterized by an increasing density of international regimes dominated by the many connections between global and regional environmental politics.

The region-building period has also featured a growth in the number and kinds of transnational actors. Most prominent is the increasing role of transnational indigenous organizations, helped along by the fact that they have also has a seat at the table of international circumpolar cooperation as Permanent Participants of the Arctic Council. Other prominent transnational actors are environmental NGOs, especially WWF with its Arctic program, as well as the scientific community which was recently show-cased in the International Polar Year 2008/2009. The concept of governance architecture serves well to illustrate the pattern of northern international space that emerged during this period and one can discern new connections among networks of actors that had previously mainly played in different arenas, e.g. between indigenous peoples and climate scientists (Nilsson 2007).

A major driving force for international cooperation has been the common interest of protecting the Arctic environment and, to some extent, though at times more politically controversial, to promote sustainable development of the region. The level of engagement has varied among the state actors (Heininen and Nicol 2007), but the change in political atmosphere compared to the Cold War period was nevertheless very apparent where moral arguments about responsibilities for the environment and indigenous peoples rights have overshadowed the previous emphasis on competing military or economic interests. However, towards the end of this period, the previously strong focus on common interests in Arctic cooperation started to break down. This was apparent in the negotiations for a policy document to the Arctic Climate Impact Assessment, where US climate politics were at odd with most other international actors in the Arctic (Nilsson 2007). Another example was when the Inuit Circumpolar Council brought a case to the Inter-American Commission on Human Rights that argued that the United States, as the world's largest emitter of greenhouse gases, violated the human rights of Inuit (Koivurova 2007).

2007-

In recent years, the dimension of conflicting interests in Arctic international politics has been accentuated in a number of ways. The most significant is the current scramble for rights to the seabed of the Arctic Ocean. It started when a Russian private expedition planted a titanium Russian flag on the bottom of the sea at the North Pole in the summer of 2007, which did not

have any formal implication, but it coincided with a record low in Arctic Sea ice in 2007 and brought a surge in attention to the rich resources in the Arctic Ocean that may become more easily available because of climate change. Other states that are trying to prove that certain features of the Arctic Ocean seabed would allow them to extend their territorial rights under are Canada, Denmark, Norway, and the United States (Carpenter 2009).

When the five Arctic rim states (Russia, Canada, United States, Norway, and Denmark) met and decided to block discussion of a new comprehensive international legal regime to govern the Arctic Ocean with reference to the existing rules under UNCLOS (Arctic Ocean Conference 2008), it was also an attempt to limit the number of legitimate actors in Arctic international politics, leaving indigenous peoples, NGOs and non-rim states out of the picture (BarentsObserver.com 2010). As well, the pitch of the political debate has become sharper in new Arctic policies being launched by several countries. An example is Russia's new Arctic policy adopted by the Russian Security Council in 2008, which highlights the great economic and geopolitical importance of Arctic resources for Russia (Vasiliev 2008). Statements from the United States and Canada also highlight national economic and security interests in discussing the Arctic. For example, Canadian Prime Minister Stephen Harper in 2007 announced the Canadian Government's plans to build "two new military facilities in the Arctic to boost Canada's sovereign claim over the Northwest Passage and signal its long-term commitment to the North" (Panetta 2007). He also revealed plans for a new Canadian Forces training centre in Resolute Bay and to refurbish an existing deepwater port in Nanisivik, "noting in a speech that a convergence of economic, environmental and strategic factors" in the region "will have critical impacts" on the future of the country" (Panetta, 2007). Thus far, most change in Arctic politics is in rhetoric only but there are also activities that signal increased attention to national sovereignty, such as Norway's tightening grip on the Svalbard islands (Pedersen 2009) and Russian military flights (Baev 2009).

Parallel to these political developments, there is an increasing interest from commercial actors, including transnational energy and mining companies. While many regional decision makers welcome the prospects of new economic opportunities, environmental NGOs warn about threats to the environmental values of the Arctic and have proposed the creation of new regimes to protect unique environments (e.g. WWF 2009). A new development in recent years is increasing interests from actors that have not previously been very active in Arctic politics. They include the European Union, which invests in research about Arctic climate change and policy analyses of the governance implications of Arctic climate change. The EU has also issued policy statements that highlights European interests in the region, not least in relation to energy security (Council of the European Union 2009). The EU has sought observer status in the Arctic Council, a request that so far has not been granted (Arctic Council 2009a; Arctic Council 2009b; Phillips 2009). Another new actor is China, which has a major interest in using an ice-free Arctic Ocean as a transport route to markets in Europe and North America (Jakobson 2010).

International politics of the Arctic is also intertwined with domestic political developments within the Arctic states, where some patterns are particularly relevant to international relations. One such trend is the development of new forms of indigenous governance which allow indigenous peoples greater local control over regional processes. At the local level it has led to a strong focus on various forms of co-management and partnerships that are thoroughly changing the relationship between science and traditional knowledge into one of more equal respect. For example, in Canada it has led to a greater propensity for government agencies to insist upon local consultation. In Norway, the *Finnmark Act* seeks" to manage lands and resources in Finnmark County, the ancestral home of Saami fishers, farmers and reindeer herders. "The Finnmark Act of 2005 is an historic law that recognizes the Saami as an indigenous people with substantive rights" (Penikett 2003:2). The implications are not limited to traditional livelihood and is relevant also to the increasing interest in fossil fuel and mineral resources. Richard Caulfield (2004:122) observes that recent land claims settlements in North America, and specifically in the Canadian North, have a "placed millions of square kilometers in the hands of for-profit and non-profit entities controlled by indigenous peoples." These corporations, he notes, "control vast resources, and they interact actively with both public and private resource governance institutions" (Caulfield 2004:122). This creates a landscape of economic development that is notably different from earlier eras of exploitation where development was often associated with colonization and where Arctic residents lacked recognized rights to resources and where such lack has often led to high social costs and loss of power.

In summary, recent international developments in the Arctic highlight conflicting interests but in a different political landscape than during the Cold War. There is a complex architecture of governance arrangements that link across both scales and issue areas, not least as governance lies at the core of security; for states, communities, and individuals. Governance lays the foundation for how actors must relate to one another, who holds power, and who does not. Through governance we attempt to protect that which we most value, be it territory, culture, identity, and/or resources.

Governance thus includes a focus on the increasing trend towards indigenous self governance with implications also for international relations, as well as governance trends at the supranational level as noted already with the development of the Arctic Council, the Northern Forum, and the interest of the EU. Thus governance speaks to the interplay and conflict between international regimes, sovereign nations, as well as local communities. In contrast to the cold war, many of the major actors (largely states) have expressed interest in continued international collaboration, including intentions to adhere to agreed upon procedures for settling conflicting interests. There is also an array of non-state transnational actors and new state actors, at the same time as Arctic rim states are trying to reassert their ownership of international negotiations that would be important for the future of the region. Moral arguments based on indigenous rights are present and as are moral arguments about our obligation to protect the Arctic environment.

Table 1. Summary of international politics in the Arctic since the mid 19th century

	Pre- WW 1	**War years and Cold War**	**Region-building**	**Security**
Structure	Nationalism Colonial expansion	Nationalism → balance of power/bipolar	Global environmental regimes + several regional regimes	Dense governance architecture Interplay among environmental and other regimes
Actors	States Companies Indigenous peoples Scientists NGOs	States → superpowers	States Indigenous peoples Scientists	States (military and policy makers) Indigenous people Companies NGOs Scientists Media
Motives	Nation-building Resource needs	Nationalism → internationalism Military security	Environmental concerns Human security Human rights and self determination	Energy and military security Self determination Global markets

3. Theoretical approaches to IR and their limitations

Realism

The basic assumptions of realism are that states are the main actors, that the realm outside state sovereignty is in a condition of anarchy (i.e. no central authority), and that the self-interest of states is the main driver for international politics (Dunne & Schmidt 2001) (Waltz 1979). Gaining or maintaining power is a central driving force for the actors.

Realist theory serves reasonably well to describe the structure, actors and their motives forces in the Arctic region during the wars years up until the end of the Cold War. In the pre-WWI period, it fails to capture the role of non-state transnational actors, such as scientists and conservation organizations, even if states no doubt became increasingly important as part of colonization efforts. After the Cold War, realist theory would not have been useful for predicting the growth of international cooperation in the 1990s, including the increasing role of non-state actors and moral arguments. One might argue that this was only a brief intermission while the current political conflicts and increased attention to security concerns have been there all along and ready to surface as soon as stakes were raised. The argument has some support from the fact that the Arctic Council has never been allowed to become a strong legally binding regime and that some contentious issues have been deliberately excluded from its agenda, e.g. military security. However, it is difficult to ignore the impacts that the norms of the Arctic Council have had on common activities, not least on the importance of giving indigenous peoples a voice. As well,

although not mandated to address issues pertaining to military security, it can be argued that the Arctic Council is heavily preoccupied with environmental, energy, and human security issues where oil and gas, health, well-being and sustainability for Arctic living conditions are key concerns.

The most recent developments challenge the assumptions of states as the main actors. Even if non-state actors are not always acknowledged by states, they nevertheless play an important role in decisions about the future of the region and are skilful at exerting their influence via other channels, such as mass media (for an example from the ACIA process, see Nilsson 2009b; Watt-Cloutier et al. 2006). The assumption of anarchy in realist thinking also fails to address the complex landscape of supra and sub-national governance structures and would therefore be inadequate for trying to analyze the role that this institutional complexity may play for the future of the region.

Institutionalism and theories on environmental governance

In neo-liberalism, or neo-liberal institutionalism, the interests are focussed on the interdependence of states and on the fact that international institutions, or regimes, play a role as mediator of self interests (Keohane and Nye 1994; Krasner 1983; Lamy 2001). The emphasis is shifted towards common norms and rules, including interest in the factors that foster common interests. It is nevertheless largely a state-centric approach, not unlike realism.

In studies of environmental governance, the concept of institutions often includes not only formal rules of cooperation but also norms and common ways of framing an issue (Young 2002). Therefore it becomes relevant to look at factors such as new knowledge that can reframe an issue in such a way that common interests become emphasized and turn a problem from a malign issue into a benign challenge of coordination (Underdal 2001). The literature on international environmental governance also pays some attention to the physical environment. An example is the concept of "fit" which attempts to capture how institutions for managing the environment fit with the natural system that they attempt to manage (Folke et al. 2007; Folke et al. 1998; Galaz et al. 2008). This literature also features an interest in the growing landscape of international regimes, including their interplay across scales and issue areas, rather than analyzing one institution at a time (Young 2002). Moreover, increasing attention is paid to the roles of non-state transnational actors, such as NGOs (Corell and Betsill 2004) and hybrid networks between formal government structures and non-state transnational actors (Bulkeley 2005). Other dimensions that have received increasing attention are moral arguments (i.e. access and allocation of resources) and democratic values (i.e. accountability and legitimacy) (Biermann et al. 2009; Biermann 2007).

While international relations theories have traditionally made a sharp distinction between national and international politics, several of the new concepts challenge this conceptual separation and highlight issues such as multilevel governance and connections between local, national and international politics (Cash et al. 2005; Gupta et al. 2007; Marks & Hooghe 2004;

Rosenau 1997) and how this affects international diplomacy (Kjellén 2007). Another new issue is attention to change and the concept of "adaptiveness," i.e. how governance systems respond to change (Biermann et al. 2009; Folke et al. 2005), including how changes in the larger socio-political landscape, i.e. the complex networks of actors and regimes, affects issues of fit (Galaz et al. 2008).

Institutionalism provides a more adequate framework than realism for understanding development during the period of region-building in the Arctic that started in the 1990s, where a number of new institutions were created to facilitate cooperation in areas of mutual interests. Moreover, the literature focusing specifically on environmental institutions captures new phenomena such as regime interplay. However, institutional theories would not have been useful for predicting the recent increased attention to conflicting security interests. The developing thinking about earth system governance (Biermann et al. 2009) captures some of the complexity in current Arctic international affairs, including the range of actors and the potential role of moral arguments, but also does not adequately address the multiplicity of non-state actors, nor of conflicting interests that have become so apparent in recent years, or the fact that areas of low politics such as the environment have moved up on the international political agenda and become a matter of high politics. This is the case not only in the Arctic but also in the global climate negotiations as was very apparent with the failure to reach any substantive agreement at Climate Convention COP 15 meeting in Copenhagen in December 2009.

Security studies

Within the field of security studies that developed largely during the 20th century, realism has had little competition, and has largely reified the definition of the concept of security as the sole purview of the state, guided by an anarchic international system and balance of power, and largely military in character (Walt 1991; Buzan et.al 1998). Advances in security studies after the end of the Cold War have included different avenues within environmental security (ranging from state to ecology-based) (Ullman 1983; Mathews 1989; Barnett 2001; Dalby 2002), human security (UNDP 1994, CHS 2003, Owens 2004, Hoogensen and Stuvøy 2006), and the Copenhagen school (securitization theory) which expanded upon the notions of military, political, environmental, economic and societal security (Wæver 1995, Buzan et.al 1998). These various attempts to break beyond this narrow conception of security have been fraught with difficulties because many of these approaches nevertheless attempt to satisfy a dominant, state-based perception of security. As a result, for example, the process of securitization which is the process of bringing an issue or agenda into the security framework, requires a certain level of state mobilization (ibid), which is relegated to the level of 'high politics' and does not include action at other political level levels (such as social security or economic policy) (Blanchard 2003; Hough 2008). The state is *the* actor which is expected to provide security to 'the people', to individuals. Not unlike the Reagan "trickle-down economics" of the 1980s, this approach to security could be understood as "trickle down" security (Hoogensen and Rottem 2004).

Thus, what largely makes these other security discourses "alternative" is that they focus on different referents or subjects of security than the state, but if the state itself plays a leading role in defining the nature of these "alternative" approaches, it makes them considerably less "alternative" in the end. However, Tadjbakhsh and Chenoy (2009), among others, identify a series of human security approaches which attempt reconceptualize the relationship between individual and state-centered HS in terms of security referent, value, threat and normative approaches. This includes understanding HS as a holistic paradigm as a concept which focuses on self and self-freedom from threat. In general, alternative understandings of HS see security as "beyond the prerogative of state", and understand the "interdependence between security of individuals and that of systems" so that "human beings become a point of national and global interests" (Tadjbakhsh and Chenoy 2009: 49). Threats to security are understood less in terms of traditional military threats, although such threats are included, but instead include a broader perspective identifying threats and challenges with economic, social and environmental spheres which affect "quality of life". HS is both complicated by, as well as gets to the heart of, the problem of the relationship between individual and state, between global rights and national interests, and between HS as an act of empowerment, or HS as "virtuous imperialism" (Hoogensen 2006) which conflates "international security with social security and civil liberties" (Tadjbakhsh and Chenoy 2009: 42-43). It is this ambiguity and open-endedness that is sensitive to scale as well as the open-ended nature of security object and referent threat, and security provider.

In the Arctic, the human security agenda has evolved with reference both to international and regionalized events (Heininen 2004; Heininen and Nicol 2005, Hoogensen et.al 2009). At the local and regional level it is driven by developments in indigenous governance, which by definition is concerned with maintaining the conditions for indigenous lifestyle across the North, in the face of increasing encroachment from the South. These security approaches highlight some of the same issues that have come to the fore in studies of environmental governance. This trend is closely linked to an increasingly blurred line between environmental politics, economic development and security itself, which is reflected in the structure of regional governance. In many areas, thus regional structure incorporates new forms of both self-governance and regional governance, federal governance and community actors. The result is an increasing number of boards, both regulatory and advisory, which have authority of economic development and its economic impact and indeed over the terms of security itself.

The widening of security from the ahistorical, Cold War "traditional" approach already started in the late 1970s with discussions about the environment. One such early work included that by Richard Falk titled "This Endangered Planet" (Falk 1971). His awareness about the environment is directed to environmental degradation but also to the power implications between those who "have", and those who "have not" when competing for scarce resources. While pointing out the problems of inequality associated with scarcity, Falk highlights a central tenant of environmental security at the time, and which continues today: scarce resources must be secured for the

purposes and interest of the state. Falk's purpose was in part to address the ways in which the environment could be used to exacerbate the already gross inequalities that existed between nations and peoples. But the issue regarding scare resources appeared to hold more sway amongst security theorists at the time, as evidenced by the oft-cited work by Ullman in "Redefining Security" (1983). In this work, security was both redefined as well as reified. Ullman argued that national security threats were more than those which the military could dispose of, and he gave particular focus towards the implications of environmental change and degradation upon national security. Many of the operational definitions of environmental security since then have not moved too far beyond the state focus.

As a state-based environmental security perspective developed, so too did a more global, shared response. It was argued that sovereign entities such as states lacked the capacity to care for common goods such as air, water and natural resources (Hough 2008). This "Tragedy of the Commons" type thinking became common during the 1970s, and could be seen in agreed-upon principles such as the "Common Heritage of Mankind" as a part of the Third UN Conference on the Law of the Sea (UNCLOS III) (ibid). Issues such as acid rain, tropical rain forest depletion, and desertification rose in importance on the political agenda, and were beginning to be perceived as global threats. Discussions about global environmental threats (and indirectly, security) took place at the United Nations Conference on the Human Environment in 1972 (Buzan, et.al; 1998). The term environmental security was popularized in the Brundtland Commission report *Our Common Future* (Brundtland Commission,1987). At that time the term still largely reflected state-based security definitions, in that linkages were made between the environment and large scale warfare, particularly nuclear war. It also highlighted the extent of environmental degradation and devastation that would be and is caused due to other weapons of mass destruction, and the arms "culture" (ibid).

Although global efforts continue sporadically, they do continue, both at the global/international level as well as at regional levels. The 2003 European Security Strategy briefly acknowledges the possible impacts of climate change, or global warming, upon the competition (and conflict) over scarce resources, namely water (European Security Strategy 2003). The "overlap" in security referents is clear here, whereby the ecological as well as human impacts are considered. People are identified as in threat and/or vulnerable to a degrading environment, and highly dependent upon a degrading exploitation of natural resources in which to survive.

A broader, more systems-oriented environmental security approach is often expressed through the concept of ecological security. Ecological security recognizes and prioritizes the protection of the biosphere, or the sum of all global ecosystems, including human and non-human life forms alike (Dalby 2002). In many respects ecological security *includes* human security, insofar as human beings are part and parcel of the ecosystems being considered. The connection cannot however be assumed to be an uncontested one. Although human well-being is intrinsically connected to the well-being of the biosphere, some human value systems may not place the biosphere within their security priorities.

However, not only are the linkages between humans and other species within and between ecosystems clear empirically (humans are but one, albeit a dominant, species), but the securitization of the biosphere with no acknowledgement of the important relationship of humans to global ecosystems has little to no potential for action as it is human beings at all levels (individuals, communities, states and global community) who need to become engaged; this requires that human value systems include ecosystems. Social, economic, political and cultural transformations no longer can be considered as separate or distinct from ecological or biospheric developments.

Environmental (such as climate and ecological perspectives) have been significantly peripheral in the human security debates. The reasons for this might be many, but two come particularly to mind; the prioritisation of large scale violence over "other" security issues, and the questionable validity of the environment as a security referent. The recognition of the environment as a potential security "sector" gained some support when this theme appeared in Buzan, Wæver, and de Wilde's *Security: A New Framework for Analysis* (1998). The authors made clear however that they were not necessarily endorsing the securitization of the environment, but were merely recognizing that there were some actors that were attempting to do so. The difficulties in securitizing the environment (where securitization is recognized as the articulation and validation of a security threat) is the extent to which "urgent" action is required; it is argued that environmental problems are usually, and more effectively, handled at the level of politicization or normal politics (ibid).

According to an climate and ecologically-informed view of human security, human beings, from individuals up to the global community are a part of the system; they impact as well as are impacted by, the system and any changes. Changes are already underway, and it is illogical that human security would not be informed by climate and ecological security approaches. This means making visible the "empirical evidence" of security practices by non-state actors – mapping values, priorities and actions taken by individuals and communities in response to environmental factors. However, one of the fundamental weaknesses of human security is a missing focus on practice at the level of humans and communities in relation to the environment. On the one hand it is a relationship of exploitation and extraction, on the other it is a relationship of inclusion and reciprocal impacts. Each dimension reflects a political choice and a particular set of values. A human security approach alone will not necessarily produce or reflect a greater or raised consciousness about human impacts upon the environment. Some elements of human security may necessitate placing value upon the exploitation of the earth's natural resources rather than protecting them (economic security).

Sustainable development agendas have attempted to balance such human security needs – the desire to continue to make use of natural resources while attempting to protect the basis for these resources. But these attempts have not been conflict-free, not least when there exists disagreement about the extent to which one can be "sustainable" about the environment while continuing to extract and use oil and gas which has considerable destructive effects upon the

environment. An ecological view further strengthens a security perspective that places top value upon the protection and preservation of the biosphere, both for humans but also for all other species that share these ecosystems. It contributes to a human security approach that must examine the ways in which human systems specifically will be impacted, but will also account for impacts between human systems (Arctic and its southern counterparts, for example), and between human and non-human systems (i.e.: how humans impact the environment). It must also root itself in practices taking place from the bottom-up – those who do not have first recourse to military might to solve problems, nor value military or statist priorities. Human security must also be seen with critical eyes, both for its value as well as for its dangers. It can potentially embody the values for not only supporting human lives and well-being (all of which require a degree of self-sustainability, but also for doing so across divides (rich/poor; North/South; insured/uninsured; human/ecological).

In relation to understanding developments in the Arctic, traditional security studies, similar to realism, offer analytical power for understanding the military dominance of the region during the second world war and the cold war, which should not come as a surprise considering the conceptual roots of these perspectives. More interesting is to look at the relationship between traditional and broader security approaches in light of northern development. Looking at the Canadian North, it is clear that there is little in the way of literature which problematizes the concept of security, nor takes into account the significant developments within security studies with regard to the environment and the human relationship to the enviornment. Lakenbauer's (2009) analysis of the indigenization of Arctic security arrangement with the implementation and expansion of the Canadian Rangers program, for example, identifies the changing context of security activities over time, and the relatively modest contribution the program makes in expanding the definition of security beyond the conventional notion as that of traditional security delivered by the state, to the state, and for the state, within the Canadian Arctic. Military protection, focused upon the twin pillars of providing national security and sovereignty, explain the establishment and expansion of the Ranger force between WWII and the late 20th century (Lackenbauer, 2009). Indigenization of military security through the Rangers program was thus to deliver a "new" type of traditional security because "the military could not feasibly station large numbers of regular soldiers in the North" (ibid., 63). In this sense, the implementation of a Rangers force as the main security force within the Canadian North did not reflect an inherent shift to a more individualistic, sensitive and comprehensive human security, but a reimplementation of traditional or military security consistent with earlier decades of military activity in the North.

Lakenbauer suggests, however, that by 1987, the growth of the Canadian Rangers program reflected the way in which definitions of security in the North had broadened, because of the specific nature of Northern security environments. He notes that "In essence, the Rangers became a different firm of "defence against help (U.S. challenges to Canadian sovereignty in the North). They allowed Northerners to "show the flag" and assert sovereignty without becoming

overwhelmed by the southern military machine" (Lackenbauer 2009: 68). This made possible the expansion of the concept of security in the Canadian North from that pre-occupied with military threat, to one which also reflected that fact that security and sovereignty "had become intertwined with broader themes of militarization and indigenous survival. The Rangers fit in with a new security discourse that no longer allowed military considerations to be intrinsically divorced from domestic socio-economic, cultural and environmental health" (ibid.).

It is this burgeoning definition of a broader human security which was privileged to a greater degree during the 1990s and early 2000s, consistent with a new understanding of the North which was developing through the Arctic Council's various activties. By 2003 it was possible to think of a Canadian North in which the concept of human security was proactive, and where emerging land claims, indigenous development projects, and the development of increasing conduits for indigenous participation in regional decision-making would ensure that the new human security discourse bore fruit for indigenous Northerners. This human security agenda had by then become normative within circumpolar discourses, both academic (Hoogensen, 2004; Heininen and Nicol 2005; Hoogensen, Bazely et.al 2009) and political (Keskitalo 2004) and seemed to herald a new dawn for the North. Indeed, intergovernmental cooperation across the borders, initially for environmental reasons, had taken human security beyond security policy to the political agenda of the circumpolar states themselves (Heininen and Nicol 2005).

Recent developments and the impacts of climate change on the Arctic physical and political environment illustrate that the development from narrow to more broadly defined security interests do not necessarily continue in a linear fashion. Rather, different security perspectives increasingly clash with each other depending which actors are in focus and because the physical landscape of the Arctic Ocean is changing in pace with the diminishing sea ice. Although the Canadian North is used here for illustration, the change in geopolitical climate is similar in the circumpolar North more broadly. The Canadian North has always served as a romantic frontier for southern Canadians, but such a notion of empty land and colonial frontier is wildly inaccurate. Even it has always been sparsely inhabited, it is the homeland to a substantial number of people, including indigenous peoples whose claim to this homeland has been made by multiple centuries, if not millennia, of occupation. Yet the perceptions of a frontier remains strong among Canadians living outside of the North, and condition the way in which they perceive, and ultimately define sovereignty for the North, which has led to a strong discursive focus on enhancing Canada's military capabilities in the North because of new threats posed by "global warming." From a human security point of view, defined in terms of human well-being and individual impact, such analyses remain out of step with the real factors of insecurity relating to Arctic inhabitants. These factors include indigenous political marginalization, unemployment, lack of socio-economic development, poor access to health and education, substance abuse, housing crisis and unprecedented levels of youth suicide. And while these crises deepen with environmental change prompted by a warming climate, most southern Canadians fret about the "national security crisis" which may be brought on by delineation of maritime boundaries in the

North. The potential melting of Canada's Arctic waters, and even the prolongation of the ice free season (increased transit), has been perceived as a very present threat to Canada's sovereignty in the North. The issue of heightened shipping (and shipping disasters), regional access to terrorists, challenges to the internal water status of the Northwest passage, and the erosion of Canada's potential claims to much of the High Arctic maritime space take precedent in the news, in political discussions at the highest level, and within the international context.

It is not just Canada that defines Arctic security in traditional military terms. This perspective has become a very recent trend throughout the circumpolar North, where over the past three years an aggressive geopolitical discourse has emerged concerning the territorialisation of the Arctic's unclaimed maritime spaces. The "Arctic Rush" of the news journal and media accounts (Nicol 2009) threatens to eclipse the emergent human security agenda, the latter being a human security defined by regional actors by themselves and for themselves.

In summary, various strands of security studies have focused on different aspects of developments in the Arctic but so far they have failed to connect with each other and offer new insight about the relation between military state-centered security and human security perspectives. Instead it appears that the challenge of incorporating environmental change in the analysis has led to more strongly diverging discourses. The advantage of security studies is that so many perspectives are represented and have been developed, perspectives which are necessary for our understanding of the dynamics taking place within the region. In fact, the Arctic provides an excellent example of how governance, security, and geopolitical analysis merge, and how a multidisciplinary, multi-actor approach is necessary to gain a better understanding of the political, social and economic dynamics taking place in the region. The concept of security is very closely linked to that of governance. Governance is a process, which can take many forms (from local, indigenous self-government to supranational bodies like the Arctic Council), that is intended to create security. The connections between security and governance also demonstrate the political nature of that which we securitize, that which we value, and what we do to protect what we value. We see that contradicting drivers inspire our actions behind security, from self-interest to human and ecological well-being. What security studies requires now however are inputs and dialogue with other disciplines to see the connections between these perspectives – military, ecological, human - rather than treating them in an isolated fashion.

Contributions from ecology: Resilience theory and attention to ecosystem services

Resilience theory has its base in studies of how ecosystems behave in relation to stress, e.g. how they adapt or transform into new structures (Folke 2006; Holling 1973). Current literature emphasizes the interconnectedness between the natural and social world and generally, which is captured in the key term social-ecological system (Berkes et al. 2003). The word resilience initially referred mainly to the capacity of a system to withstand perturbations from various shocks and rebuild itself but resilience thinking has increasingly paid attention also to how systems renew or transform themselves into new stable states (Gunderson & Holling 2002).

Recently, some steps have been taken to apply lessons from resilience thinking also to institutional dynamics (Duit et al. 2010; Young 2009b).

The focus in resilience theory on the fact that systems undergo change makes it interesting for looking at processes over time. It also acknowledges that although change can be gradual, continuous and predictable, it can also occur suddenly and involve a disorganization of the system as such. Such non-linear dynamics leading to regime shifts are well documented in ecosystems (Scheffer et al. 2001) and also historically looking at societies (Diamond 2005). In today's world, with climate change along with increasing human influences on global biogeochemical cycles and pressures on ecosystems from resources use and land-use change, many systems are currently operating close to their boundaries (Rockström et al. 2009). It is therefore not unlikely that earth as a system is entering a time where periods of abrupt change is likely to increase in frequency and magnitude.

Regime shift are often caused by a number of interacting drivers that may occur at different spatial and temporal scales and by interactions among systems in nature and society (Folke 2006; Kinzig et al. 2006; Norberg et al. 2008). They are generally difficult to foresee and pose a special challenge to governance systems as they may drastically change the conditions for collaboration. Another aspect of the behavior of complex social-ecological systems is path dependence. It implies that inability to respond to feedbacks can push interconnected social-ecological system into undesirable pathways from which it is hard to escape because of self-reinforcing feedback mechanisms (Kay 2003). Historical institutionalists have focused on explaining how institutions produce such paths, including studies of how institutions structure a nation's response to new challenges. There has also been interest in understanding how long periods of stability and incremental change can interact with abrupt, non-incremental, large-scale changes, a process sometimes referred to as "punctuated equilibrium" (e.g. Baumgartner and Jones 1991; True et al. 1999).

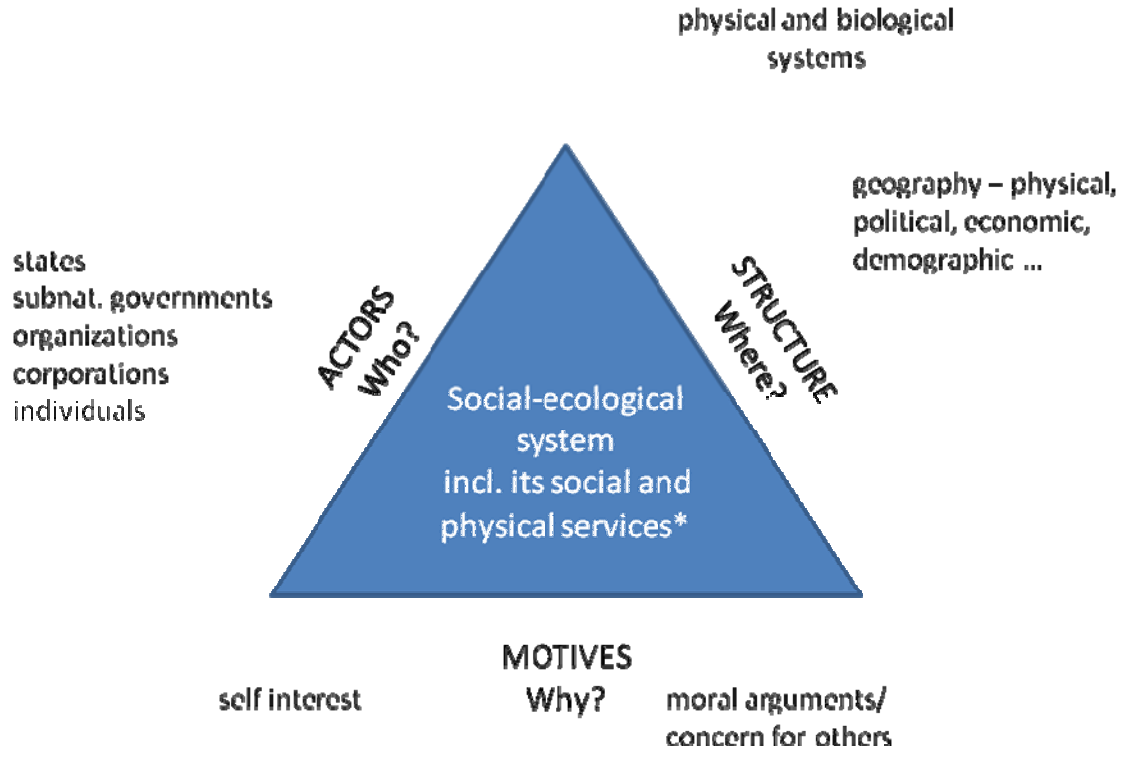
Another aspect of looking at connected social-ecological systems that has come increasingly to the fore in recent years is an emphasis on the services that ecosystems provide society. From an older discourse that motivated nature protection mainly for nature's aesthetic and intrinsic values, such as the protection of iconic species, there has been a shift toward emphasizing the range of services that nature provides, so-called ecosystem services. They include provisioning services (e.g. food, fibre, fuel), regulating services (e.g. climate regulation, water purification, flood regulation), cultural services (e.g. spiritual, recreational, educational) and supporting services (e.g. primary production, nutrient cycling, soil formation) (Millennium Ecosystem Assessment 2005). For the analysis of international relations, such a perspective makes it necessary to include not only classic parameters of geography, such as oceans and mountains, but also the biological aspects of nature. It touches some of the same issues that are brought up by human security perspectives as it stresses essential needs.

Some ecosystem services are mainly relevant at the local or national levels but many are closely interlinked with issues that are on the international political agenda. They include cooperation and conflicts connected with fisheries and politics surrounding agriculture and forestry, as well as less visible services such as the ability of ecosystem to store carbon, which is a central question in global climate politics. In a world where rapid changes in ecosystem services may occur in connection in regime shifts, as has already happened in relation to fisheries, it is likely to have consequences also for international relations. More indirect links to the international system are also relevant such as situations where a stress on ecosystems increases the vulnerability of local populations and contributes to social tensions. Many of these links are well recognized in international policy processes, including the UN Conference on Environment and Development in Rio de Janeiro in 1992 and its follow-up ten years later with the UN Conference on Sustainable Development in Johannesburg. For the Arctic, it would be very difficult to understand today's international politics without including ecosystem services in the analysis. They are relevant for strong national interests in ecosystem-dependent industries such as fisheries. In relations to climate politics, the carbon-storage capacity of the Arctic is globally significant and potentially unstable as the tundra thaws. In spite of the fact that these issues today play a central role in international politics, they are not as yet well integrated into mainstream IR theory.

4. A new analytical framework for international politics in the context of a rapidly changing environment

What are the striking features of developments in the Arctic and which conceptual tools from existing theories would be relevant to incorporate into a new analytical framework? We will try to answer this question by looking at the region through a simplified prism that attempts to capture aspects of both structure and agency, including the relationship between them. The issue of agency is represented by as actors and the motives that drive their actions. As illustrated in Figure 1, structures include both physical and social aspects of the system.

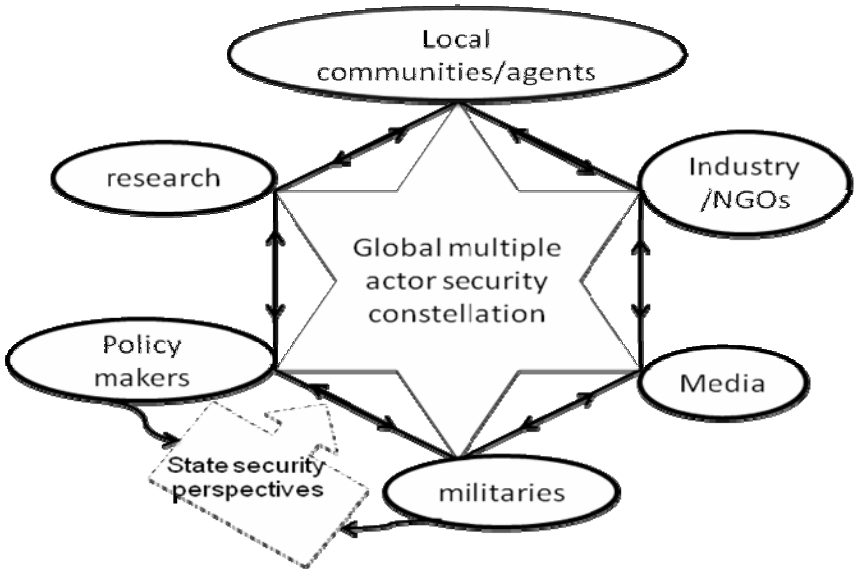
Figure 1. Aspects of the Arctic as a social-ecological system



Using some examples from the Arctic, the following provides some examples of how the framework could guide an empirical case study where the aim is to gain a better understanding of interactions between international politics and the social and material context in which it takes place.

Looking at actors, states have always played and still play a dominant role in Arctic politics and their action have had power to change the discourse within which Arctic international relations are take place. However, their power has not been absolute and their maneuvering space has often been defined or changed by non-state actors, including indigenous peoples and the international scientific community. As well, states themselves contribute with multiple and sometimes contesting actors, between different policy programs and governmental ministries that may have conflicting outlooks (ministries of the environment vs ministry of defence, for example. Durant 2007). There is thus a need to continue looking at the state but to view states as part of a network of actors, i.e. attention to how non-state transnational actors interact in hybrid networks that cut across governance levels (Bulkeley 2005; Joas et al. 2007). Developments in security studies are also recognizing the importance of a multi-actor framework, illustrating the network of actors in the following manner:

Figure 2. Multiple security actors (Hoogensen, et al. 2009).



Multiple security actors, both those who identify threats as well as those who contribute to creating security (security providers), include a much broader network of actors than what the dominant but narrow, state-based security perspective (using the military as the tool and primary actor of security) includes. The above network does not presuppose equality between actors, but demands an exploration of the power dynamics between them, which in turn depends on the context bringing the actors together.

In examining the motives for political development in the Arctic over time, three issues are particularly relevant: resource demands, national identity, military security. They can all be classified under the general heading of self interest of states and are all well captured in studies inspired by realist thinking. However, actors in the Arctic have a range of different interests at heart, some of which have little to do with state self interests or a narrow conception of security as understood through conventional high politics. Three motives that have become prominent more recently are indigenous peoples striving for self-determination, human security, and wishes to protect a unique environment. They have their basis in moral arguments about either human rights or nature having a right of its own. The global role of Arctic ecosystems is also starting to gain some attention. A new theoretical framework would have to pay attention to how these different arguments gain strength in the general discourse: Which actors are they supported by? Which regimes give credence to the arguments? How are the values of the relevant actors changing which are bringing broader, human well-being concerns to the fore over self-interested ones? And how are motives and values of self-interest and moral, communal concern interacting with each other in the Arctic context?

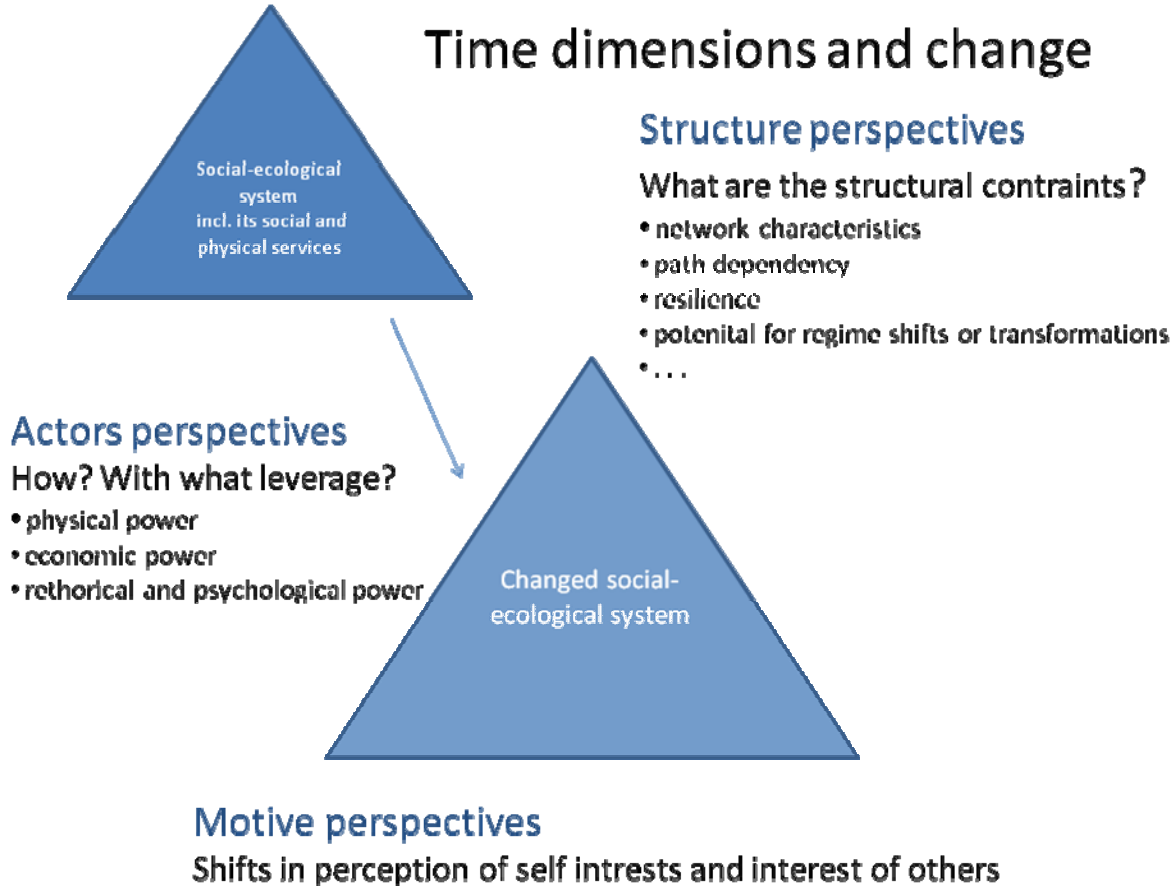
The structural dimension informs and shapes the nature of agency, i.e. the material and social dimensions that define the degree the maneuvering space for various actors (McAnulla

2002:271). It includes social structures that that are the result of historical pathways. Examples from the Arctic include those that are linked to the history of economic, political and cultural colonization of the North and the demographic characteristics of the region (age structure, migration) and to gender issues (AHDR 2004). It also captures issues raised within new institutionalism. Looking at governance regimes, concepts such as governance architecture and regime interplay across scales and issues areas are increasingly important to understand current developments. At a generic level, they may also be important for analyzing historical developments.

Structure is not only about social relations and institutions. Looking at the Arctic, it is clear that physical and biological structures are highly relevant to understanding the region. Without is its geology, the Arctic would not been seen as a storehouse of mineral and fossil fuels. Without its highly productive marine ecosystems, Arctic fish supplies would not have the same economic importance as they have today. Without its iconic species and landscapes that can conjure nationalistic images along with globally important climate feedbacks, environmentalists and scientists might never have cared as much about the region as they have done in the past 150 years. As pointed out by Østreng (forthcoming), “the last decades have seen dramatic changes in arctic politics and natural conditions. Due to a set of intermingling political and environmental factors, civil societal organizations are slowly but surely gaining access to areas of the North previously either designated for military purposes only or sealed off from human exploitation by the frosty fences of the sea ice.” In his analysis the combination of these factors has led to a brand new set of values, interests and priorities making their mark on the political agenda in ways that affecting the geopolitical significance of the region and the development of security politics, from the state to the individual.

A map of actors, motives, and structures would give a picture of the social-ecological landscape at a given time. It might also indicate tensions that point towards potential changes. However, in order to analyze the actual potential for change, it is necessary to introduce a time dimension and to consider the dynamics of change, see Figure 3.

Figure 3. Time dimensions of social-ecological systems



including both gradual changes and of tipping points that drastically alter the system. A special concern is the issue of non-linearity and rapid state changes that are often caused by a number of interacting drivers that may occur at different spatial and temporal scales. It is these kind of multiple aspects that the analytical framework attempt to capture rather than looking at single drivers or motives one at the time. Another generic issue that emanates from structural dynamics is the relationship between regime complexity and system stability. Does the degree of complexity in the governance architecture and its relations to various actor networks and their respective values in and of itself make the system more or less resilient or prone to regime shifts and transformations?

A focus on change would also address agency. An empirical study would include identifying actors with specific motives and values and analyze a change in the social-ecological system as the outcome of a combination of motives and the power by which the actors in question can use for leverage. The questions that become relevant to ask focus on the kinds of power that are available to which actors. It includes military power, as well as economic and rhetorical power.

The latter is becoming increasingly important in media-oriented democratic societies. The physical powers of nature should not be excluded. They can have a role in and of themselves but can also be enrolled by different actors who make themselves spokespeople for nature (Latour 1987), or who use nature for legitimizing their arguments. In relation to motives, it becomes relevant to study how the perception of self interest versus interest of other can change depending on how an issue becomes framed is such a process. Questions about the role of knowledge become relevant, including attention to the basic research, scientific assessments, scientifically based scenarios of change, monitoring, and technologies.

The purpose of the proposed analytical framework would not be to forecast the future, which is usually rather futile. However, it can provide a complement to future studies approaches that use back casting to understand drivers of change and potential leverage point. It could also provide a more systematic approach compared to workshops that attempt to look at possible futures based on a range of experts meeting and trying to highlight the issues they think are the most important.

Next steps

The thoughts presented in this paper very much represent work in progress. The framework needs to merge/integrate the work done on actors in security, strengthen and make more visible the ties and relevance of governance structures, and discuss more in depth the relevance of the resilience theories. At the SGIR conference, we invite feedback both regarding the analysis of existing tools from IR and on the requirements that a new analytical tool need to meet.

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