

## **Module 9: Security in the Circumpolar North**

Developed by  
Lassi Heininen  
University of Lapland  
Finland

### **Overview**

---

During the early 21st century, the circumpolar North witnessed a diverse rise in global interest due to its rich energy resources; the sanctuary it provides for ballistic missile submarines (SSBNs) and other strategic resources; the effects of globalization; the important multidisciplinary and transnational research on the environment and climate change (Heininen, 2005) and the effects and impacts of climate change, such as the fast melting of the Arctic ice cap (Heininen, 2008a). Together with the fact it is a stable and peaceful region with intergovernmental and regional cooperation and innovative governing institutions has made the Arctic important in world geopolitics and the globalized world economy. Major attractions are rich deposits of hydrocarbons, particularly oil and the potential contribution of new trans-arctic sea routes for global shipping.

Arctic states conduct many activities aimed at ensuring energy security that typically play an important role in foreign policy. Countries' efforts to assure access to natural resources often affect security dynamics (Proninska, 2007). While this does not necessarily mean there are emerging conflicts in the circumpolar North, the above issues are examples that affect states' security, defined either traditionally, such as national security, or meaning comprehensive security, such as human security.

### **Learning Objectives**

---

Upon completion of this module, you should be able to:

1. Identify, assess and interpret environmental security.
2. Identify, assess and interpret human security.
3. Explain and evaluate traditional security, and identify the measures of arms control and disarmament.
4. Compare policies of and for energy security by Arctic states.
5. Assess and interpret security challenges in and special features of the circumpolar North.

## Required Readings (including web sites)

---

Heininen, L. (2010). Globalization and Security in the Circumpolar North. In: *Globalization and the Circumpolar North*. L. Heininen and C. Southcott. eds. Fairbanks, AK: University of Alaska Press. pp.227-252.

## Key Terms and Concepts

---

- Arms Control, Disarmament and Confidence-building (measures)
- Danger, Threat and Risk
- Energy Security
- Environmental / Ecological Security
- Global Security Problems
- Human / Civil Security
- Nuclear Weapons and Weapon Systems (including nuclear waste)
- The Military and Military Technology
- Peace – Tension and Stability - Instability
- Securitization
- Special Features of Northern Security
- Traditional Security
- War and Warfare

## Learning Material

---

### Introduction

In the 1990s there was significant change in the international system and its security environment when the Cold War ended and the Soviet Union collapsed. This meant less military and political tension and was followed by cooperation, partnerships and stability.

The stability of the international system was strengthened by arms control actions such as the Comprehensive Test Ban Treaty and other global and regional security arrangements. This change moved the international system from a condition of bi-polar, multi-functional competition based on a nuclear arms race, balance of deterrence and arms control of two superpowers into a new uncertain and unstable system characterized by a new kind of dominance and hegemony by a single superpower.

Parallel to these occurrences there has been a rationalization of the military with economic and technical developments emphasizing quality over quantity, a general and global arms race, and growing arms trade.

The North Atlantic Treaty Organization (NATO) was established during the Cold War as a military union to contain communism and military dominance of the Soviet Union. NATO's original *raison d'être* no longer exists. NATO is still present in the region as a transatlantic organization for collective defence. NATO's membership includes circumpolar states Canada, Denmark, Iceland, Norway and the United States. However, the Partnership of Peace (PfP), the Euro-Atlantic Partnership Council (EAPC) and the NATO-Russian Council were established to bring all European states and former republics of the Soviet Union together. All Arctic states are members of the EAPC. While

they are not all “equal partners” it signifies that northern geopolitics has fundamentally changed from the days of the Cold War.

This has led from a situation of confrontation into one of cooperation in the North. Twenty-first century security in the High North is more comprehensive and complex, including environmental and human aspects, such as impacts of climate change.

Security is not objective, rather it is relative and socially constructed, and can include aspects of humanity, society and the environment. It can also be interpreted as being related to almost everything (Westing, 1989) and has been criticized for lacking focus. The term “securitization” in security discourses, as defined by the Copenhagen School, means almost all issues are securitized (Buzan, 1991). Security is complex and includes nationalistic and militaristic aspects (Deudney, 1999). This is the case where environmental problems and risks stem from military activities (Häyrynen and Heininen, 2002). Consequently, there are many ways to understand, define and interpret security and insecurity, and what is meant by danger, threat, risk and safety (Module 10, CS 100).

What generally is relevant in security discourses are questions such as: About whose security are we talking? Security from whose point of view? Is a change in problem definition or security paradigm possible? These questions indicate first, there are several actors dealing with and searching for security; and second, security is not objective but relative because it is socially constructed. Unlike traditional security where the state as defined by political and economic elite(s) is the main subject, security can be viewed from a broader perspective by recognizing different subjects of security (i.e., who or what needs to be ‘secured’). Following this, individuals, nations or states should be defined as objects of security. This makes it difficult to have an objective definition of security, especially meaning what is secured and how.

These are many of the reasons behind the need to broaden the interpretation of a traditional approach into a more comprehensive approach to security (Common Security, 2002). There are several discourses on security and security concepts, such as human, environmental, energy and traditional security. This is also relevant when discussing climate change as a security factor and possible security dimensions of climate change. Likewise, this is relevant when trying to define regional security, not of a group of like-minded countries or security community (Bailes and Cottey, 2006), but more the security for a loose international cooperative region, such as the circumpolar North (Heininen, 2007). Through the lense of globalization this is very natural since humankind and the entire world should be the subject of security.

One of the most interesting features of security in the circumpolar North is that within the region several types of security exist and consist of special kinds of northern security or securities (Heininen, 2010). They are closely related with each other and with global issues. It is possible to argue most global problems or threats that impact the circumpolar North, either by being physically present in the region, as in the case of nuclear arms and long-range air and sea pollution, or through different indirect impacts, deal with security and include some aspect of security. It is becoming increasingly important to discuss how

global problems and globalization influence and possibly (re)define northern security. In particular, climate change can be emphasized as a global environmental problem that has special influence on redefining northern security and a state of security in the circumpolar North.

### **9.1 Environmental Security**

Environmental degradation has impacted the northernmost regions and seas for decades. The full impact of this degradation only became well known and understood as late as the 1980s due to long-range air and water pollution from southern latitudes to the northernmost latitudes. These kinds of environmental problems include persistent organic pollutants from agriculture, air pollution from industry, radioactivity from nuclear power plants and arctic haze from big cities. For example, persistent organic pollutants DDT and PCBs were transported as long-range contaminants from agricultural and industrialized areas in mid-latitudes of Europe and North America to the High Arctic by sea currents and air masses (AMAP, 2002). Long-range air and water pollution influencing northern peoples and communities became the first reason for concern about the environment and the first indicator of global environmental problems in the highest latitudes of the globe. All of this indicated that environmental or ecological security is relevant in the High North (Langlais, 1995).

Internal sources of pollution include exploitation of non-renewable natural resources through activities such as mining and oil drilling, local industry, transportation and traffic, settlements and cities in the region, and military activities. Environmental catastrophes, such as accidents and oil spills, are expected in northern regions due to increased mass-scale exploitation of oil and natural gas, and growing transportation of heavy oil and liquid gas (LNG) from the Barents Sea region to Central and Southern Europe and North America as well as other intensive sea traffic.

At the turn of the 21st century, nuclear safety became a symbol of new international cooperation on the arctic environment and environmental protection, and meant a change in problem definition of security discourses and premises by states (Heininen, 2010). The impetus for international cooperation was radioactivity in the Arctic, particularly in the Barents Sea region, crossing national borders either from dumped nuclear waste and nuclear tests in the region or from Sellafield, the leaking United Kingdom nuclear power station on the coast of the Irish Sea. There are still hot spots such as Russian naval space in Andrejevan Bay (Bergman et al., 1996; AMAP, 2002). Due to this, nuclear safety, i.e., problems and conflicts dealing with nuclear waste, spent fuel and nuclear weapons and plants, became an important and urgent item on the political agenda of Arctic states in the 1990s. Although the nuclear problem is no longer as acute it will likely be an issue in the future because it is complex, multi-functional and progress is slow (Heininen and Segersh ahl, 2002).

Perhaps the most challenging global environmental problem faced by northern regions and peoples is rapid climate change. As early as 1997, the IPCC emphasized climate change in the Arctic was occurring rapidly with several clear impacts such as food security. According to the IPCC's Arctic Climate Impact Assessment Report (ACIA,

2004), the Arctic has become an “indicator of climate change.” These kinds of phenomena are expected to intensify. In September 2007, the multi-year sea ice of the Arctic Ocean was its smallest ever and the Northwest Passage was free of ice for the first time. Climate change comes with multi-functional and complex physical impacts, such as evident rapid and global warming, thinning and melting sea ice, melting glaciers and thawing permafrost. There are new phenomena with many societal influences, such as rising sea level in oceans and other seas, and degradation of man-made infrastructure and cities built on permafrost (ACIA, 2004). Finally, there are effects of climate change on northern traditional livelihoods, such as fishing, hunting, reindeer herding and “uncertainty” related to climate change.

Due to this growing threat, an environmental ‘awakening’ among Indigenous peoples living in northern regions occurred (Nilsson, 2007). Indigenous peoples’ organizations, such as the Inuit Circumpolar Council and the Sami Council, became active in environmental protection and international environmental politics. They actively used research findings to push governments into signing the global Stockholm Convention on Persistent Organic Pollutants (POPs) (AMAP, 2002). This kind of epistemological cooperation can be seen as a success story of cooperation between northern Indigenous peoples and the Arctic scientific community (Nuttall, 2010). The Arctic Climate Impact Assessment (ACIA, 2004) is an example of this collaboration.

Much of the growing environmental concern of Indigenous peoples has been targeted against modernized socio-economic development, such as uncontrolled industrialization and urbanization, and the consequent degradation of the environment; increased vulnerability to natural and technological hazards, unsustainable natural resource extraction, and related political instability and social unrest. Environmental advocacy conducted by international environmental and intergovernmental organizations, particularly when focusing on marine mammal consumption, and protests and claims by Indigenous peoples for their traditional livelihoods against mining and forestry companies have inflamed environmental conflicts between Indigenous peoples, local entrepreneurs, industry, and national and regional authorities. Concern with the state of

#### **Learning Highlight 1:**

Compare the main security discourses and concepts and discuss the rationale for these discourses and interpretations of security.

the environment is commonplace – even a way of life and a matter of survival – to northern Indigenous peoples. The current state of the Arctic ecosystem, with pollution and the risks and threats related to climate change, is a concrete example of environmental security and shows how important it can be to the region and its peoples. Finally, the concern for the environment by northerners is a good example of how closely environmental and human security are related. The recent ‘awakening’ in terms of the recognition of climate change as a critical environmental problem emphasizes this.

### Learning Activity 1

List, describe and discuss examples, relevancies or the importance of environmental security in general and in your region in particular.

## 9.2 Human Security

Human security focuses on human beings as individuals and their everyday security rather than the security of a nation or society as a whole. Related is the fact that ordinary people's everyday security is affected by pollution and environmental degradation, including large-scale utilization of natural resources and climate change or rapid environmental change (Hoogensen, 2005). This approach was first adopted by the Canadian government in the 1990s (Dwivedi et al., 2001) and further defined by the United Nations in the UNDP's 1994 Human Development Report.

Climate change has caused, and is causing, insecurity among northern inhabitants, Indigenous groups and within communities in cities, villages and other settlements (Minority Rights Groups International, 2008). This insecurity is manifested in new conditions caused by climate change. This is particularly the case in areas where residents' livelihoods are based on traditional activities, such as hunting and fishing, where the season to undertake these activities has become shorter or the activities have become more dangerous (Report and Recommendations, 2006). There is an urgent need for mitigation of climate change, which at any rate may come too late, and the search for adaptation strategies based on special conditions and features of the Arctic, including resilience and traditional and local knowledge(s) (Nuttall, Forest and Mathiesen, 2008).

In many settlements of the Canadian Arctic food is becoming less available and it is more difficult to live on a traditional diet. This has raised concerns regarding food safety and food security. The traditional food system is threatened because climate change (in addition to the impacts of modernization) threatens traditional fishing and hunting on sea ice. Access to traditional diet and food is endangered in many parts of the Canadian Arctic due to "the impact of climate change on the availability of food species" (Chan, 2006) and there is no longer "the continued and predictable availability and access to food, derived from northern environments through Indigenous cultural practices" (Paci et al., 2004).

### Learning Highlight 2

Compare the discourse and concept of human security with environmental security and discuss the similarities and differences. Would it be better to have one concept and term for that kind of security, and if so, what might be a proper term?

Questions surrounding climate change are not only about the environment and environmental security, but also the impacts of warming on natural systems and human communities (IPCC, 2007). The uncertainty associated with climate change is, as Gleditsch (2008) says, one of the most serious effects peoples and societies face, which is related to their (human) security. There is a new point of view, even discourse, around the fact that “[there] can be no civil security in a world where food safety, supply and quality is uncertain” (Paci et al., 2004).

Climate change threatens the security of many northern peoples and peoples in Africa and Asia, and poses major risks to communities forcing them either to adapt or become environmental refugees. Climate change has become an important security issue for northern peoples and their communities.

### Learning Activity 2

Discuss food security as an issue or indicator of human and civil security.

## 9.3 Traditional Security and Arms Control and Disarmament Measures

Today, in the circumpolar North there is less political tension and military presence and activity than during the Cold War. Tension has largely been replaced with civilian and military regional cooperation and a confidence has developed between northern actors (Heininen, 2010; Östreng, 1999). At the same time, the circumpolar North continues to host military structures and assets, especially nuclear weapons systems of the United States and Russia, and remains a strategic area for weapons testing and arms systems. Despite the Pfp, the EAPC and the NATO-Russian Council, NATO, in its traditional role as a transatlantic organization for collective defence, maintains a presence in the High North. NATO’s mandate has changed and extended, e.g., Afghanistan and Libya, and increasingly NATO serves as an instrument of the United States’ global policy.

The continuity of high military-political importance is complex. While in some parts of the region military bases and radar stations have closed, reduced or eliminated activities, in other parts military bases have extended and new areas are being used for military purposes. This has occurred for land-based activities in Alaska, north Greenland and the Kola Peninsula and for marine-based activities in the Barents Sea and Arctic Ocean.

Military presence in the region for either routine military defence, law and order, control of national borders and maintenance of sovereignty by Arctic states or global and strategic military hegemony consists of several types of military structures, functions and activities (Heininen, 2010). Of particular strategic importance are first, nuclear weapons, such as strategic nuclear-powered submarines (SSBNs) carrying ballistic missiles with multiple nuclear warheads; and second, Command, Control, Communications and Intelligence (C3I) systems, such as the North-American Air Defence system (NORAD) and the United States National Missile Defence system (NMD) with its deployed missile silos in Alaska and radar station in Greenland. The testing of new weapons, traditional

and nuclear; development of arms systems and military applications; and enhancement of military training and exercises have become an important function of the military in the North. This is influenced by the political orientation of western democracies, which believe that while military testing and exercises, such as low-level flying, are neither politically possible nor correct in densely-populated southern metropolitan regions, they are technically suitable and generally politically feasible in sparsely-populated “empty” northern peripheries.

The end of the Cold War did not result in real nuclear disarmament globally. Instead, it brought new wars and armed conflicts, particularly in the Middle East and Central Asia, and new members such as Pakistan, North Korea and possibly Iran into the nuclear weapons club. In 2010, there were roughly 11,530 operational nuclear weapons worldwide from eight nuclear weapon states; thousands “are kept on high alert, ready to be launched within minutes” (Kile et al., 2007). Decreased military tension and reductions in military facilities on a global level has resulted in progress in arms control and nuclear disarmament, including the 1996 Comprehensive Test Ban Treaty (CTBT) for a ‘de-nuclearized’ world and a new START (Strategic Arms Reduction Talks) agreement between the Russian Federation and the United States to decrease the number of warheads of strategic nuclear weapons to 1,550 in 2010.

National sovereignty has become a sensitive issue in the circumpolar North despite that there are neither conflicts nor disagreements on territorial borders, rather stability, mutual agreement and confidence in the “exclusive jurisdiction which a state may exercise within its borders” (Pharand, 2009). This is due to the strategic importance of energy security (oil and gas reserves) and the attention climate change has brought to the issue of national sovereignty, especially in Canada in relation to the Northwest Passage and in Russia in relation to the Northern Sea Route (On Thinning Ice, 2002). In its new Northern Strategy, the Government of Canada promotes a strong presence in the North by ensuring “the capability and capacity to protect and patrol the land, sea and sky in our sovereign Arctic territory”, which includes the provision of a military presence in the Canadian North and a new polar icebreaker (Government of Canada, 2009).

Climate change has already been interpreted as a potential threat to national sovereignty in sparsely populated northern regions. Climate change exhibits a sort of dualism with respect to traditional and national security issues. While climate change results in easier access to northern seas, increasing the utilization of natural resources and their exportation, it also acts like a trigger or excuse for security-political reasons for military patrol, e.g., as exhibited in new national claims to expand rights to utilize natural resources, i.e., as in the continental shelf or claims such as “use it or lose it” by the Canadian Prime Minister. Consequently, the littoral states of the Arctic Ocean and NATO have become more interested in military aspects of Arctic security. The development is not determined and does not necessarily mean the Arctic region “could erupt in an armed mad dash for its resources” as Borgerson (2008) speculated.

Climate change has also become a relevant factor from the point of view of traditional, national security and is one of the special features of northern security (Heininen, 2010).

### Learning Highlight 3

Define and evaluate the political-security and military situation of the current circumpolar North. Discuss what kind of military presence is needed in the circumpolar North and how to increase or decrease it.

One consequence is that the issue might appear to be a traditional security issue demanding traditional answers such as more military defence. This is problematic as climate change needs a more comprehensive approach that includes environmental, human and civil security. It has become extremely important to discuss and define the security dimension of climate change so it becomes a global factor that can “promote stability and peace between parties in conflict” (Carius, 2006-2007).

### Learning Activity 3

Give examples of military presence and activities in your region, particularly northernmost areas of your country. Define and discuss the purpose of these military activities for the national security and sovereignty of your country.

The circumpolar North of the early 21st century is a stable, peaceful cooperative area free of war, armed conflict and serious internal security issues. The main military structures, particularly nuclear weapon systems of Russia and the United States, remain in the region partly as a legacy of the Cold War, but mostly due to strategic, military and political reasons. The region also hosts routine military activities, normal control of sovereignty and national borders, and testing of weapons, arms systems, military applications, and military training and exercises. These activities can pollute the

environment and pose risks to human security (Heininen, 1994).

## 9.4 Energy of the Arctic States

Energy is of growing importance among national interests. Activities of nation-states aimed at ensuring energy security are an important element of foreign policy. Energy security is playing a more important role because energy is assumed to be “securitized.” Energy security provides the basis of many relations between major powers and is also an emerging issue in the circumpolar North.

According to a comprehensive definition energy security includes security of supply, especially of oil and gas, and security of investment, the environment, and energy cooperation or dialogue. Energy security has a growing strategic importance among national interests and a key part in the foreign policies of established powers, e.g. the United States, Russia, Germany, France, the United Kingdom, Japan and emerging economies, e.g. China, Brazil, India, South Korea, Nigeria, South Africa.

Behind its importance is the relative scarcity of energy resources. Whenever scarce natural resources, e.g. fresh water, are defined as strategic, they become a global issue. If

this scarcity continues, it will create a growing interest in access to these resources and there will either be competition for those resources or more trade and cooperation. For states with rich resources this gives good reason to protect them and their transportation and export against possibilities like terrorist attacks or hostile activities by rivals. The scarcity of energy sources, particularly the hunt for oil, has led to conflicts over strategic resources, such as the Gulf War in 1990; so-called group identity conflicts, such as migration caused by environmental degradation or lack of natural resources; and insurgencies as a direct challenge to a state (Dalby, 2002).

At the same time that energy security is becoming highly strategic in world politics and globalized world economics, it is becoming increasingly important and strategic in northern geopolitics. This has been enhanced by rough estimations that a significant share of the world's undiscovered oil and natural gas – approximately 90 billion barrels of oil and 1,670 trillion cubic feet of natural gas – is north of the Arctic Circle, mostly in the Arctic Ocean shelf (USGS Fact Sheet, 2008). The fact that the High North is seen as “an immense reservoir of resources” for the rest of the world is the main reason littoral states of the Arctic Ocean are seeking to expand their claims to the continental shelf outside of their 200-mile Exclusive Economic Zones. Although this is in accordance and compliance with UNCLOS, as the 2007 Russian expedition to the North Pole sea bed demonstrated, there is an interpretation and discourse arguing this is a ‘race’ for energy resources and emerging conflicts (Beary, 2008).

Energy security has become a significant factor in the strategic importance of the High North as a result of the region's rich energy resources, particularly those of Norway, Russia and the United States. In addition to routine defence of national security and state sovereignty, states have taken strategic steps to protect resources such as oil and natural gas deposits and their transportation, i.e., energy security. If necessary, states are ready to guarantee energy security through military means, which reflects the traditional security viewpoint emphasizing state hegemony and national interests, such as economic welfare, prosperity and energy security.

## **9.5 Security Challenges in the Circumpolar North**

Throughout history there have been numerous changes and challenges which people, societies and states face and define as problems, dangers or threats to everyday life. These include natural catastrophes, rapid climatic changes, scarcity of resources, migration, and wars and conflicts between states and nations (Diamond, 2005).

Many challenges are worldwide and can be defined as global security problems. According to Hakovirta (2005) such challenges include global security problems such as the arms race, proliferation of nuclear weapons and international terrorism; overpopulation, poverty and other economic and development problems; scarcity of natural resources such as energy and fresh water; pollution, ozone depletion, climate change and other problems causing environmental degradation; refugees and other human rights problems; diseases and pan-epidemics such as HIV/AIDS; and other problems including international crime, meteors, space refuse and “bio-invaders.

Currently, many of these problems exist in the circumpolar North and influence the level of northern security. Security challenges considered to be most relevant in the North include global environmental problems such as long-range air and water pollution, and other problems causing environmental degradation and (rapid) climate change. Although there are no existing or emerging armed conflicts in the region, nuclear warfare could become a security challenge in the circumpolar North in the event that a war or armed conflict between major powers escalates to become worldwide.

Northern security special features include: first, implementation of the technology models of geopolitics; second, nuclear safety; third, relations between the environment and the military; fourth, relations between Indigenous peoples and traditional security; fifth, (global) energy security; and sixth, climate change, which also represents a global problem (Heininen, 2010; Module 10 “Geopolitics, Security and International security”, CS 100).

All special features of northern security relate to discourse on traditional security and comprehensive or human security with emphasis on environmental security. Many special features also deal with peoples and societies either directly or through environmental degradation. Nuclear safety issues of the 1980s and 1990s precipitated change in problem definition of security discourse(s) and premises; climate change has a similar potential to introduce new points of view in theoretical discourse and premises on security.

Special aspects of northern security involve discourse on traditional and military security, and human or civil security with emphasis on environmental security. This perspective involves peoples and societies either directly or through impacts of environmental degradation. While the technology model of geopolitics and energy security relate primarily to military and traditional security discourse, most others represent alternative discourses on security.

### **Conclusion**

Special aspects of northern security involve discourse on traditional and military security, and human or civil security with emphasis on environmental security. This perspective involves peoples and societies either directly or through impacts of environmental degradation. While the technology model of geopolitics and energy security relate primarily to military and traditional security discourse, most others represent alternative discourses on security.

### **Discussion Questions**

---

1. Discuss the main security discourses and concepts and their similarities and differences. What might be reasons for different interpretations of security? What problems or dangers might there be in conceptualizing them as such?
2. Discuss the interrelations between energy security and climate change in the circumpolar North.
3. Which security challenges are currently most relevant in the High North?

## Study Questions

---

1. What is the biggest existing environmental challenge in the circumpolar North? What is the most challenging emerging one? What environmental concerns have already been addressed with some success?
2. Which government first adopted human security and when? Is food security best described as an issue of environmental, human or civil security from the point of view of northern Indigenous peoples?
3. From the point of view of major nuclear weapon powers, what is the most strategically important military weapon deployed in the circumpolar North?
4. Is 'energy security' closer to traditional or comprehensive security?
5. List and briefly describe the special features of northern security.

## Glossary of Terms

---

**Arms Control and Disarmament Agreements:** are between states and, in the case of nuclear weapons and nuclear weapon systems, between nuclear powers. Among these agreements are:

- Non-Proliferation Treaty, NPT (signed 1968 – in force 1970) with 189 parties;
- Partial Test-Ban Treaty, PTBT (no weapon tests in the atmosphere, outer space and under water) (signed August 1963 – in force October 1963) with 125 parties;
- Treaty on the Limitation of Anti-Ballistic Missile Systems, ABM Treaty between the United Soviet Socialist Republic and the United States (signed 1972); the United States unilaterally withdrew from the treaty in 2002 due to the start of the US National Missile Defence System (NMD);
- Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, Enmod Convention (signed 1977 – in force 1978) with 72 parties;
- Convention on the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction - Chemical Weapons Convention (CWC) (signed 1993 – in force 1997) with 181 parties;
- Comprehensive Nuclear Test-Ban Treaty (CTBT) (signed 1996 – in force 2007) with 138 parties.

**Civil Security:** emphasizes human beings as citizens with rights and duties; idea of good polity of citizens, meaning some sort of 'community' (Griffiths, 1993).

**Confidence-Building:** (measures) include, for example, treaties on nuclear weapon free zones, e.g., Antarctic Treaty (signed 1959 – in force 1961), Treaty of Tlatelolco on Latin America and the Caribbean (1967), Seabed Treaty (1971–1972), and South Pacific Treaty of Rarotonga (1985–1986). The international agreement on the archipelago of Svalbard (1921) was a confidence-building measure because it stated the archipelago should be demilitarized.

**Copenhagen School of Security:** places particular emphasis on the social aspects of security. Theorists associated with the school include Barry Buzan, Ole Wæver and Jaap de Wilde. Many of the school's members worked at the Copenhagen Peace Research Institute.

**Danger:** neutral term that means there is reason to cause insecurity, or that you are not secured. A threat, either is implemented as social, economic, or environmental, or is subjective and psychological. Danger is based on the perception of the seriousness of perceived threats in the public consciousness of a society (Haila and Heininen, 1995).

**Human Security:** has a focus on human beings as individuals, rather than a nation or society as a whole. Human security first refers to everyday security of ordinary people as affected, for example, by pollution, physical impacts of climate change, large-scale utilization of natural resources, poverty, hunger, thirst, or personal violence (Hoogensen, 2005). Under the auspices of human security, food security means scarcity of traditional diet and country food, not a lack or scarcity of food supplies per se.

**Interrelation between Security and the Environment:** (Galtung, 1982) are due to and through multi-functional environmental impacts of the military in peacetime. Interrelation between security and the environment includes the following categories: 1) use of strategic minerals (copper, lead), energy (oil as fuel), land, water and air (for bases, infra, patrolling and exercises), intellectual resources, and toxics, chemicals and radioactive materials; 2) pollution and CO<sup>2</sup> emissions; 3) nuclear and other accidents; and 4) disarmament (e.g., destroying of chemical weapons).

**Military:** is a general term for military presence, which correspondingly is for the defence of sovereignty and national security of a state. The military aspect of national security includes all aspects of normal national defence and routine patrolling (e.g., patrolling of strategic nuclear submarines (SSBNs) and long-range strategic bombers), testing of weapons and weapon systems, deployment of weapon systems, radar stations and forces, and training and troop exercises. It also includes nuclear weapon systems and their implementation.

**Nuclear Weapon System:** includes the following categories of nuclear involvement:

- Weapons:
  - Permanent weapons such as testing, land-based deployment, bases for ships and aircrafts, and storage;
  - Transit such as ships, aircrafts, ports of call and aircraft staging;
- Weapons-related involvement such as missile testing, surveillance and communication, and uranium; and
- Non-weapon involvement such as dumping, storage, provision and nuclear energy.

**Risk:** you qualify, rank and measure risk based on quantitative analysis of a probability calculation, e.g., nuclear accident. Risk is conscious and definable, and said to be part of a normal human life in modern 'risk' societies. Risk is relative because people interpret different things as a risk. Risk is socially real if it is interpreted to be real, whether it has materialized or not.

**Securitization:** defined by the Copenhagen School, refers to discourse as an act which interprets something as a security issue and has been used to interpret security discourse (Buzan, 1991).

**Traditional Security:** means weapon-oriented and "unilateral competitive national military security" (Newcombe, 1986) where the state is the subject of security. This means that security or peace is guaranteed by the military or the deterrence of the use of it. National security by an army is taken as a guarantee for state sovereignty and therefore national security does not have a prize.

## References

---

- ACIA. 2004. Impacts of a Warming Arctic: Arctic Climate Impact Assessment. Policy Document. Cambridge, UK: Cambridge University Press.
- AMAP. 2002. Arctic Monitoring and Assessment Program. Arctic Pollution. Oslo.
- Bailes, A.J.K. and A. Cottey. 2006. Regional Security Cooperation in the Early 21st Century. SIPRI Yearbook 2006: Armaments, Disarmament and International Security.
- Beck, U. 1992. From Industrial Society to Risk Society: Questions of Survival, Social Structure and Ecological Enlightenment. In: M. Featherstone ed. *Cultural Theory and Cultural Change*. London: Sage.
- Beary, B. 2008. Race for the Arctic. Who Owns the Regions's Undiscovered Oil and Gas? *Global Researcher. Exploring International Perspectives* 2(8):213-242.  
[www.GLOBALRESEARCHER.COM](http://www.GLOBALRESEARCHER.COM)
- Bergman, R., A. Baklanov, B. Segerstahl. 1996. Overview of Nuclear Risks on the Kola Peninsula. Summary Report. IIASA Radiation Safety of the Biosphere. International Institute for Applied Systems Analysis, Laxenburg. May 1996.
- Borgerson, S.G. 2008. Arctic Meltdown: The Economic and Security Implications of Global Warming. *Foreign Affairs*, March/April. Foreign Affairs web 16.3.2008.
- Buzan, B. 1991. *People, States and Fear: An Agenda for International Security Studies in the Post-Cold War Era*. Hertfordshire, UK: Harvester Wheatsheaf.
- Carius, A. 2006. Environmental Peacebuilding: Conditions for Success. *Environmental Change and Security Program* REPORT 12.
- Chan, L.H.M. 2006. Food Safety and Food Security in the Canadian Arctic. *Meridian* Fall/Winter, 1-3.
- Common Security. 2002. A Blueprint for Survival. UN/A/CN.10/38. Independent Commission on Disarmament and Security.
- Dalby, S. 2002. *Environmental Security. Borderlines*. Minneapolis: University of Minnesota Press.
- Deudney, D.H. 1999. Environmental Security. A Critique In: D.H. Deudney and R.A. Matthew eds. *Contested Grounds. Security and Conflict in the New Environmental Politics*. Albany: State University of New York Press.
- Dwivedi, O.P., P. Kyba, P.J. Stoett and R. Tiessen. 2001. *Sustainable Development and Canada, National and International Perspectives*. Canada.
- Galtung, J. 1982. Environment, Development and Military Activity. *Towards Alternative Security Doctrines*. Oslo-Bergen-Trondheim.
- Gleditsch, N.P. 2008. The Liberal Moment Fifteen Years On. *International Studies Quarterly* 52(4):691-712.

Government of Canada. 2009. Canada's Northern Strategy Our Heritage, Our Future. Minister of Indian Affairs and Northern Development and Federal Interlocutor for Metis and Non-Status Indians. Ottawa.

Griffiths, F. 1993. Defence, Security and Civility in the Arctic Region. Nordic Council's Arctic Conference, Reykjavik.

Haila, Y. and L. Heininen. 1995. Ecology: A New Discipline for Disciplining? *Social Text* 42:153-171. Duke University Press.

Hakovirta, H. 2005. Muutama suositus ihmiskunnan uudelleen koulutukseen. Globaaliongelmät ja niiden hallinta. *Kosmopolis* 35(4):30-45.

Heininen, L. 2010. Globalization and Security in the Circumpolar North. In: L. Heininen and C. Southcott eds. *Globalization and the Circumpolar North*. Fairbanks, AK: University of Alaska Press. pp.227-252.

Heininen, L. 2008. Changing Geopolitics of the North. In: G.R. Thorsteinsdottir and E.E. Oddsdottir eds. *Politics of the Eurasian Arctic. National Interests and International Challenges*. The Northern Research Forum and Ocean Futures, Akureyri. pp.31-46.

Heininen, L. 1994. The Military and the Environment: An Arctic Case In: J. Käkönen ed. *Green Security or Militarized Environment*. Dartmouth Publishing Company.

Heininen, L. and B. Segerstahl. 2002. International Negotiations Aiming at a Reduction of Nuclear Risks in the Barents Sea Region. In: R. Avenhaus, V. Kremenyuk and G. Sjöstedt ed. *Containing the Atom. International Negotiations on Nuclear Security and Safety*. Lexington Books.

Hoogensen, G. 2005. Human Security in the Arctic. *Presentation to ICARP II*. Copenhagen, Denmark in November 2005.

Häyrynen, N. and L. Heininen. 2002. Changes in Problem Definition: A Case Study of Nuclear Risks in the Barents Sea Region. In: P. Strand, J. Torun and Å. Sand ed. *Proceedings from The 5th International Conference on Environmental Radioactivity in the Arctic and Antarctic*. St. Petersburg, Russia.

IPCC. 2007. Climate Change 2007 Synthesis Report. Summary for Policymakers. Intergovernmental Panel on Climate Change.

Kile, S.N. 2007. Nuclear Arms Control and Non-proliferation. In: SIPRI Yearbook 2007: Armaments, Disarmament and International Security. Oxford: Oxford University Press.

Langlais, R. 1995. Reformulating Security. A Case Study from Arctic Canada. *Humanekologiska skrifter* 13. Göteborg University.

Minority Rights Groups International. 2008. Minority and Indigenous Groups: Silent Victims of Climate Change Says New Global Report. March 11, 2008.

Newcombe, H. 1986. Collective Security. Common Security and Alternative Security: A Conceptual Comparison. *Peace Research Reviews* 10(3):1-8, 95-99.

Nilsson, A.E. 2007. A Changing Arctic Climate. Science and Policy in the Arctic Climate Impact Assessment. Linköping: Linköping University, Department of Water and Environmental Studies, Linköping Studies in Arts and Science No. 386.

Nuttall, M. 2010. Epistemological Conflicts and Cooperation in the Circumpolar North. In: L. Heininen and C. Southcott, ed. *Globalization and the Circumpolar North*. Fairbanks, AK: University of Alaska Press. pp.149-178.

Nuttall, M., P.A. Forest, S.D. Mathiesen. 2008. Adaptation to Climate Change in the Arctic. A background paper for the Joint Seminar of UArctic Rectors' Forum and the Standing Committee of Parliamentarians of the Arctic Region on February 28, 2008 in Rovaniemi, Finland.

On Thinning Ice: Climate Change and New Ideas About Sovereignty and Security in the Canadian Arctic. Presentation Abstracts. CARC, CMSS and CPC, 2002.

Paci, J., C. Dickson, S. Nikels, L. Chan and C. Furgal. 2004. Food Security of Northern Indigenous Peoples in a Time of Uncertainty. Position paper for the 3<sup>rd</sup> NRF Open Meeting, Yellowknife, NWT, Canada.

Pharand, D. 2009. Canada's Arctic Sovereignty and the Northwest Passage, *Meridian* Spring/Summer:1-5.

Proninska, K. 2007. Energy and security: regional and global dimensions. In: SIPRI Yearbook 2007: Armaments, Disarmament and International Security. Stockholm International Peace Research Institute, Oxford, UK: Oxford University Press. pp.215-240.

Report and Recommendations. 2006. Report and Recommendations from a Workshop The Arctic and Canada's Foreign Policy, sponsored by the Walter and Duncan Gordon Foundation, October 4-5.

USGS Fact Sheet. 2008-3049. Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle. P.H. Stauffer. ed. U.S. Department of the Interior, U.S. Geological Survey.

Westing, A. 1989. The Environmental Component of Comprehensive Security. *Bulletin of Peace Proposals* 20(2):129-134.

Östreg, W. 1999. National Security and International Environmental Cooperation in the Arctic, the Case of the Northern Sea Route. Kluwer Academic Publishers. Environment and Policy, Vol. 16, Dordrecht.