CHAPTER 12

Arctic Hunters: Climate Variability and Social Flexibility

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Abstract

In the Arctic, climate change is widely experienced and talked about. Based on my own work in a north Greenlandic hunting community, I shall address the question of resilience in both a historical and a contemporary perspective. Historically, the Arctic communities have always had to live with changing weather conditions and larger climatic cycles, and their survival has depended on mobility. In modern times, the climate changes cannot be confronted in the same way, for a number of reasons that will be investigated with special reference to hunters in northern Greenland.

A central concept in the discussion of resilience in the far North is *flexibility*, as defined by Bateson, and it is argued that due to composite changes induced upon people from the outside, they experience a loss of flexibility. The ambition is to contribute to a general discussion of social action in face of climate change.

HFM 106 · THE QUESTION OF RESILIENCE. SOCIAL RESPONSES TO CLIMATE CHANGE
THE ROYAL DANISH ACADEMY OF SCIENCES AND LETTERS · 2009

The melting ice in the Arctic has become an icon of global climate change along with the polar bear clinging to the last tiny ice-floe in the sea. This icon has some basis in reality, as I shall show from northern Greenland, where hunters are possibly also facing the demise of their age-old way of life, all while catching more polar bears than before, as these leave the ice-floes for firmer grounds (Born et al. 2008). The aim of this chapter is not simply to lament cultural change, which is well known to the Arctic populations (Csonka &

Schweitzer 2004). While hunting is of course an ancient way of life in these regions, the people are wholly integrated into the modern world (see e.g. Dahl 2000). My aim is to seek a deeper understanding of how a hunting community responds to perceived changes in their environment of the current magnitude. Whether these will turn out to be irreversible, we cannot know, but what we do know is that the people of the far North are already living with an unstable 'sense of place' (Feld & Basso 1996). As the topographical realities shift, so does the emplacement of people – even when they remain in the same geographical location.

It is well known that whatever speed climate changes are accruing at the moment, and whatever the complex of causes that is fuelling them, they hit the Arctic environment more severely and rapidly than any other inhabited region, because the changes accelerate one another. This is not only a scientific fact but also very much part of local experience. Yet the people in the far North are exposed also to new political realities and to international quota systems designed at protecting particular species, often with adverse effects on the hunting community. In the following, I shall deal with these three dimensions of climate, politics, and species protection in order to show how they converge and constrict local social flexibility in North Greenland, mainly in the Thule district, the northernmost settlement in Greenland – and in the world.

Analytically, a central concept is that of *flexibility*, as defined by Gregory Bateson as 'uncommitted potential for change' (1972: 497). Bateson uses a parable of the acrobat on a high wire to illustrate the implications of this. To maintain his position on the wire, the acrobat must be free to move from one position of instability to another, and his arms must have maximum flexibility to secure the stability of more central parts. If the arms are locked, the acrobat will fall. During the period when the acrobat is *learning* to walk on the wire, and thus learning to move his arms in an appropriate way, a safety net is necessary; this gives him the freedom to fall off the wire. 'Freedom and flexibility in regard to the most basic variables may be necessary during the process of learning and creating a new system of social change' (ibid.:498). As I am going to suggest, the north Greenlanders are short on both of these accounts.

Climate: A chronic disaster

In the *Third Assessment Report* from the IPCC (2001), it was noted how in the Arctic, during the 20th century, air temperatures over land increased by 5°C, the sea ice thinned and declined, the ocean warmed, and terrestrial permafrost decreased in extent. Since 2001 the process has accelerated dramatically, and its consequences for the *social* systems have become conspicuous, as multiple reports based on solid scientific ground have emphasized (ACIA 2005; IPCC 2007; AMAP 2009).

One thing is the external, scientific observations another is the local perception of the changes. In the North American Arctic, people say that 'The earth is faster now', referring to the sense of rapid changeableness in the weather that is now prevalent (Krupnik & Jolly 2002). At the same time, they also note that 'We have seen these warm weathers before,' acknowledging the fact of living within an environment that was always prone to changes and demanding close attention for people to make the proper responses (Krupnik 2006). Thus there seems to be divergent local perceptions of the consequences of the scientifically established climate change; this is significant with respect to the argument of this chapter, because it immediately points to two different views of the world – one, the scientific, seen from outside of the landscape and generalizing particular trends; another, the local, which is seen from within the landscape and the concomitant practical tasks by which one engages with the environment (see Ingold 2000). However, there is no immanent conflict here; there are simply points of view. Among Arctic hunters, the relevant point of view relates to an age-old relationship to the animal world, which always compelled them to movement.

When the Inuit (or Eskimo, as they were called then) were first studied by anthropologists in late 19th century, their mobility was particularly highlighted. In his general observations on the Eskimo tribes, the founding father of American anthropology, Franz Boas, notes: 'That the mode of life of the Eskimo depends wholly on the distribution of these animals will therefore be apparent, for, as already observed, they regulate their dwelling places in accordance with the migrations of the latter from place to place in search of

food' (Boas [1888] 1964:11). Mobility was a sine qua non for survival in the Arctic, not in itself but in response to the movement of those animals upon which they subsisted. In the process, mobility became more than an activity getting from one place to another for the Inuit; it became a fundamental aspect of who they were, and still are, and how they learn about their environment (Henshaw 2009: 155).

At Boas' time the interest in cultural history and in the ways of culture across continents was a prominent feature in the evolving science of culture in continental Europe, from where Boas originally came. This led to another interest in Eskimo migration across the North American continent, and their becoming 'Eskimos' in the first place. The origin of Eskimo culture, geographically and 'culturally', was located at the precise moment when the migrating populations from the western shores of North America finally conquered the Arctic coastlands and archipelagos and adapted to the marine resources (Steensby 1905). Since then, the Eskimos were by definition hunters, primarily of marine mammals.

The general pattern of seasonal migration in search of prey was further analyzed and systematized by Marcel Mauss, another ancestor of modern anthropology, in his claim that the movement between summer and winter dwellings was accompanied by two distinct social morphologies (Mauss [1906] 1979). His thoughts are still highly pertinent in the Arctic, where time, space, and community continue to be closely interwoven, even where mobility has decreased (Stuckenberger 2006). Both the long-term unidirectional migration and the shorter seasonal and partially cyclical movements were part of the strategy by which the Inuit were able to populate the northernmost regions on the Earth. In 1898, the Norwegian Eivind Astrup, who was a member of the two first Peary expeditions to the Smith Sound Eskimos in the early 1890s, was highly impressed by the people he encountered: 'Our small merry brethren in the Arctic regions represent an extremity of the human race; an insignificant section of it, who take up the battle of existence in regions which to our eyes offer poor prospects for life's sustenance, and where icy death would seem to reign supreme' (Astrup 1898: 48). They alone had been able to see the possibilities in the Arctic, where the climate was a chronic challenge.

With Peary and Astrup we are finally in the Thule district, known as such only since 1910, when the Danish Polar explorer Knud Rasmussen established a trading station in the area where Peary had worked, and gave it the name of Thule (Hastrup 2006; 2007). Later, the arch-typical (archaeological) 'Thule-culture' was established by reference to a dig in the same area, showing the artefacts and bone remains typical of a population of marine hunters (Hastrup 2008). However, when the inhabitants of the district were first described, they had abandoned some of the typical gear for reasons of impoverishment. Mauss, summarizing the situation of these people on the basis of the works by Astrup and Rasmussen among others, the Eskimos at Smith Sound were in a miserable state:

> The expansion of inland ice and the persistence of drifting ice throughout most of the year not only put an end to the arrival of driftwood but obstructed large whales, and made it impossible to hunt whales, walruses and seals in open waters. The bow, the kayak, the *umiak* and most of the sleds disappeared because of a lack of wood. These unfortunate Eskimo were reduced to such circumstances that they retained merely the memory of their former technology. (Mauss 1979: 42-43)

What transpires here is a double exposure to increasing ice and disappearing means of mobility and communication. When social life becomes too circumscribed, it tends to disintegrate. The vital strategy of mobility is hampered and people are stuck. Today, the ice is melting, but once again people are losing access to their hunting grounds due to the ice conditions, and their mobility is hampered.

A recent study of north Greenlandic polar bear hunters testifies vividly to a change in the ice conditions (Born et al. 2008: 31ff). All of the hunters in this study affirm that there is less ice than before and add a variety of more specific observations, notably that the ice thickens later and breaks up earlier than before, that is has thinned and is now perforated by more and larger holes. Travel by dogsledge has become more restricted and difficult. Meanwhile, boating has not become easier, not least due to new sea currents that will often pack the drift ice tightly in the fjord outside of Qaanaaq, the principal settlement in the district, numbering some 600 people.

The thinner ice is more likely to break up during storms, and it will take more time to re-freeze due to waves.

A hunter from Siorapaluk, another small settlement in the district, tells how the sea ice now is only 0.5 m thick, while before it was between 1.5 and 2 m thick; this severely affects walrus hunting from the ice front. He and his co-hunters blamed the currents. The people in the district also noted a decrease of the glaciers, now calving so massively that the ensuing swelling disturbs the narwhal hunt taking place in the bottom of the fjord. When I was in the field in the summer of 2008, I was struck by the soundscape produced by calving glaciers and tumbling icebergs. The thundering noise reminded us all that, indeed, the ice was faster now; with a new rhythm to the soundscape, a sense of urgency crept in upon people (cf. Feld 1996).

The new pace of the meltdown of the glaciers even affects the freshwater supply in Qaanaaq (and elsewhere), because the glacier river that supplies most of the water to the town is dwindling and melting down below its own deposit above the village. Precipitation in the Arctic likewise shows signs of an increase over the past century (Anisimov et al. 2007: 657). The trends are variable in space, but people in North Greenland assert that the weather has changed a lot recently, and become more rainy and snowy. In the Thule District the hunters stress that increasing wind, more rain and generally far more unpredictable weather conditions have had negative effects on their economy. They explain it with reference to the increasing patches of open water even in wintertime, and together with the break-up of the ice, it hampers communication and travel by traditional means. Fogs have also become more common, they tell me, again forcing people to stillness even at the peak of the whaling season, because boating as well as sledging is absolutely dependent upon sight and landmarks.

The changing weather conditions, therefore, not only affect the hunting by itself but also the use of ancient sledge routes. The early break-up of the ice seriously hampers communication between the settlements within the district and endangers travel. As pointed out by Nuttall and others in the Arctic Climate Impact Assessment Report: 'The mobility and flexibility that indigenous peoples once possessed to move in response to shifts in the pattern and state of their

resource base is no longer possible' (2005: 685). There are other reasons than weather variability for the constricted mobility, as we shall see below, but when we speak of climate change as an impingement upon social life it is important to stress the multitude of implications. The whole orientation system by which people have known their place in the world is breaking down; this includes forecasting techniques that are no longer reliable and which therefore add to the risk of travelling by land, sea and ice (Henshaw 2009: 156).

The changes in the icescape have another major implication for local orientation, as here suggested by Uusaqqak Qujaukitsoq, a hunter from Qaanaaq:

> Sea-ice conditions have changed over the last five to six years. The ice is generally thinner and slower to form off the smaller forelands. The appearance of *aakkarneq* (ice thinned by sea currents) happens earlier in the year than normal. Also, sea ice, which previously broke up gradually from the floe-edge towards land, now breaks off all at once. Glaciers are very notably receding and the place names are no longer consistent with the appearance of the land. For example, Sermiarsuaq ('the smaller large glacier'), which previously stretched out to the sea, no longer exists. (In Huntington & Fox 2005: 84)

This is a very important observation pointing to a deep-seated sense of change in the local sense of emplacement. Place names have for a long time served as a means to crystallize memory and society in the Arctic environment of infinite extension. As Kleivan has it: 'Past Greenlanders whose culture was based on oral and not written sources, were not in possession of maps, but the place names functioned as a kind of map which constituted a description of the land. Using place names enabled them to plan hunting trips as well as social visits: knowledge of place names was thus an important aspect of their hunting culture' (Kleivan 1986, quoted by Sejersen 2004a: 72-73). In Greenlandic, most place names refer to physical features of the landscape, to particular hunting grounds, or to activities of some kind, thus testifying to what Basso has called the people's participation in the landscape (Basso 1996: 44ff). For Inuit outside of Greenland it has also been noted how place names testify to a particular environmental knowledge; increasingly, they also serve as his-

torical markers of past possibilities and activities (Henshaw 2009: 161).

When place names are no longer consistent with the appearance of the land, a sense of homelessness enters perception. Memories are no longer valid, and this affects the sense of self; possibly even more important, at least when resilience is discussed, the people are also being deprived of their visions for the future (cf. Sejersen 2004a). Thus, the changing environment not only affects the hunt and communication, it unsettles people profoundly. This also goes to show that environmental disaster is never simply an event, because its effects are folded into both subjectivity and social relationships. Climate related disaster quickly becomes chronic in a precarious environment like the Arctic – and people are stuck.

Politics: The signature of the state

However small and remote some of the Arctic communities seem, they are tightly linked to the national (and international) political order and to the global economy (Nuttall et al. 2005). Political interests, trade barriers and conservation efforts affect and constrain the capacity for action in the Arctic communities. It has recently been suggested that a new 'environmentality' – i.e. the way human subjects understand themselves in relation to their environment – will change with new technologies of governance; this is extremely significant in the Arctic, where people have generally lived on the margin of the state (Lovecraft 2008). The hunters in focus here have subsisted on their own account since times immemorial, all while they have increasingly become inscribed into the modern political order. As pointed out by Nuttall, the current topographical reshaping of Greenland as the ice dwindles coincides with the emergence of a new Greenlandic nation that in itself redefines people's relationships to place and to their natural and social environment (Nuttall 2009: 297). Politics is thus very much part of current changes in Greenland.

One of the most pervasive trends in the general political development in the 20th century is centralization of the population. Most Arctic peoples were either forced or encouraged to settle perma-

nently in fixed locations. In Greenland, the early colonization by the Danes made the local population concentrate around the new store, the focal point of the 'colony' alongside the mission station. In later colonial times, during the twentieth century, further 'encouragement' to concentrate was provided when the stores of the tinier settlements were closed down. When communities had become accustomed to modern goods like guns, needles, sugar, and coffee, to mention just a few of the items that were traded for fur, closing the store was tantamount to closing the community. In North Greenland, having been completely outside of the colonial order of the rest of (western) Greenland, this pattern of trade and centralization first began with the foreign explorers. Before Robert Peary arrived in the late 19th century, contact had been sparse and left little trace. With Robert Peary, who wintered in the Thule District for several consecutive years, and kept coming back for two decades, this changed. Peary was the first to supply the people of Thule with guns etc., originally in his own interest since he and his team were totally dependent on efficient hunters. It is above any doubt, however, that he came to respect the people (see Peary 1898). When in 1910 Knud Rasmussen established his trade station, the road towards inclusion into the colonial order was definitively open. As Fabian noted for central African explorations, once stations – however scientific and friendly – were established, the political relations between hosts and guests changed; at the station 'exploration reached the end of the road and turned into colonization' (Fabian 2000: 48).

Knud Rasmussen was a polar explorer and ethnographer, who first arrived in North Greenland with the Danish Literary Expedition to Greenland in 1902-04 (Hastrup 2006). He was the first one to name the local inhabitants 'Polar Eskimos', a tiny and widely dispersed population numbering some 250 people in the entire district. On his initiative a mission was established in 1909, and in 1910 the trading station of Thule was built at Uummannaq in the North Star Bay. His explicit ambition was to help the Polar Eskimos make the transition from an isolated hunting community to a modern society. The chosen means were conversion, trade, modern technical equipment, health care, and local laws. The result was a kind of centralization that made hunters and their families congregate at the

station; they were flexible, and might as well live there as anywhere else.

The trading post was named Thule after the ancient notion of Ultima Thule, the farthest, mythical north on the edge of the world (Hastrup 2007). In this barely inhabitable region, a people was 'dis - covered' and named, and thereby drawn into the modern world. The trading post was a great success, in that the hunters could here sell their furs (mostly polar fox) and hides for rifles, ammunition and household utensils. The surplus created financed most of the seven Thule Expeditions, led by Knud Rasmussen, that were to follow. The local people were as satisfied as Knud Rasmussen with the setup, and they soon adapted to the more permanent settlement pattern. The Thule trading station had managed to attract hunters from the entire area between Cape York and Etah, and they had more or less settled down in its shadow. This had a predominantly negative effect on the age-old subsistence activities of hunting, fishing, and herding.

After some years, the centralization of the population had affected the game badly, while human mortality had decreased and the population had started to grow in the same period (Gilberg 1984). Consequently, Knud Rasmussen and his associates in Thule sought to re-disperse the population by establishing a second trading station further north in Siorapaluk, being the first wooden structure to appear there, and making the settlement happen in 1929. Today some 50-60 people live in Siorapluk, still a viable settlement, almost exclusively living from hunting. At the time of its establishment, Siorapaluk offered easier access to trading for people from further north; today there are no people further north, but walrus and polar bear are still to be hunted up there, and the people of Siorapaluk are efficient hunters. The old shop still stands, although trade has now been taken over by a new building next to it.

Apparently, this first attempt at dispersal was not enough. At a meeting held by the Hunters' Council (*Fangerrådet*) February 3rd 1930, Knud Rasmussen made the following proposition: 'It is suggested that the population at Thule is thus regulated that each individual hunter may only stay in Thule three years at a time, and that the number of families living there is decided by the Council according

to the hunting conditions. This should be done in the interest of the people' (read in *The Thule Museum Archive,* Qaanaaq 2008). At first it was impossible to agree on this, and it was decided not to legislate on the matter until more people had been heard, but on the subsequent meeting May 16th 1930, the Council agreed about the proposition. The irony is that by now, the people were no longer driven by their own desires to move in search of game, but were forced to do so by the colonial power – yet still in their own interest. In 1953 the entire population at Thule was forced to move for completely different reasons, because of the establishment of an American airbase, and some 60 of them chose Qaanaaq as their new home place. (It has been hotly debated whether the migration was actually *forced* in a juridical sense, not least because it had already been established that the area around Uummannaq could not support the population. Space does not allow me to go deeper into this, however.)

Today, it seems that dispersal is the last thing governments want to propose. Instead they encourage further centralization and as people generally want access to modern technologies, schools and health care, they mostly comply. In the Thule District it has meant a vast increase in the population of Qaanaaq, the main settlement, now inhabited by some 550-600 people while another 100-150 live in the four remaining settlements in the district (numbers are fluctuating according to statistics). Roughly half of the townspeople in Qaanaaq come from further south and fill administrative and other professional functions, while the other half are in some sense natives to the region and mostly hunters.

One of the important functions of the village is still to run a shop, and just like in 1910, the inhabitants are dependent on ships coming in with goods. They can reach the fjord only during summer, and while before only one ship made it – if at all – now at least two ships are needed to provide the village with necessities for the next 11 months. In 2008, the 'first ship' landed on August 1st, and unloaded its goods over five days and nights when the tide permitted the floats to get to the shore. The store was next to empty, and for the spectator it is amazing to think of the calculations that precede the shipment; baby-food, socks, sweets, frozen rye bread, guns, washing machines, ice-tea, beer, birthday cards – you name it; how much is needed of

everything? Larger items like windows, dishwashers, and outboard motors for the dinghies are individually ordered. Yet at least some spare items should be at hand in the store. The weekly flight in and out of Qaanaaq may help out for lesser items and vegetables, but larger items must be brought in during the short summer – locally defined by open water. In 2008 the second and last freight ship arrived a month after the first. The current warming may make the sea ice break up earlier, but the ice floes and icebergs still prevent the ships from passing by except for within a very limited period.

In Greenland, centralization is extending even further these years. The municipality of Qaanaaq, flagging the narwhal on its emblem, has already been amalgamated into a larger northwest Greenlandic municipality, with Ilulissat as its centre, some 2000 kilometres to the south. This is where people will soon have to go in case of emergencies, and Thule will definitively be reduced to a tourist bureau and a crafts shop, catering for the increasing (albeit still very small) number of tourists. The general point is that the match between the age-old patterns of life and new global realities is not easily done. As stated in the ACIA report: 'Arctic peoples cannot adapt, relocate or change resource use activities as easily as in the past, because most now live in permanent communities and must negotiate greatly circumscribed social and economic situations' (Nuttall et al. 2005: 685).

Climate change plays an important part in this circumscription as we saw already, but as demonstrated here, it is accelerated by political realities. These are not only noted locally, but also increasingly brought to the attention of international bodies. The two strands are woven together in a recent submission to the United States Senate by the Inuit Circumpolar Conference in which it is held that climate change is 'an infringement on human rights because it restricts access to basic human needs as seen by the Inuit and will lead to the loss of culture and identity' (Watt-Cloutier 2004, cited in Anisimov et al. 2007: 661). This is highlighted also in the ACIA Report, where it is stated that 'Hunting, herding, fishing and gathering activities link people inextricably to their histories, their contemporary cultural settings, and provide a way forward for thinking about sustainable livelihoods in the future' (Nuttall et al. 2005: 685). History,

locality, and sustainability in the Arctic have always been related to hunting, and to unrestricted mobility in pursuit of the game for survival, as we have seen,

Returning to the theme of environmental threats, it seems clear that the uncertainties related to climate change in North Greenland are magnified, because they are underwritten by the 'signature of the state.' The notion is proposed by Veena Das, who also identifies the paradox of illegibility (Das 2007: 162ff). The state apparently works by way of decrees, laws, and rational calculations on the basis of intentionality and direction; it works on behalf of the common good. We have seen this in the shifting patterns of either centralization or decentralization in North Greenland. However, laws and regulations are always read in a wider context of anonymity and illegibility, the implicit feature of the workings of the state, and subtly infiltrating local self-perceptions within the larger political order allegedly working for the common good. With each regulation, the hunters have become more integrated into the state, colonial or otherwise, yet at the same time they have become marginalized from their own histories.

Today, outside the written, the state and its policies show up in everyday concerns about the future. Rumours of resettlement further south have spread in the wake of the latest and very recent effort at rationalizing (that is centralizing) the administration. This is a real enough fear, but misreadings of intention occur all the time due to the general sense of constriction in the north. Health campaigns – teaching people to eat vegetables, rye bread, and fish, and warning people against eating too much seal, walrus, and whale due to the presence of heavy metals in the meat, are seen to degrade the hunters' wish to continue eating their traditional food. Another local misgiving I stumbled upon during a conversation was the training of local, lay-judges able to act quickly in cases of local misdemeanour – the nearest official judge being some 2000 kilometres away – being read as a wish to split up local social solidarity. As seen from these examples, the 'illegible' aspects of the distant (if ever-present) state over-determine an interpretation that feed into the worst fear, expressed to me by an inhabitant of Thule: "in ten years we are no longer here". A new economic rationality with its own con-

cerns about sustainability will have overwritten the age-old and inherently sustainable subsistence economy – not to speak of the sense of belonging within a particular landscape and its affordances. As yet, no new technology of governance has seen light that might make the local subjects' and the policy-makers' sense of the environment converge. So far the local environmentality is at loggerheads with the state as rumoured, if not read.

Protection: A measure of responsibility

Politics enters into the sustainability equation in many ways and on various scales, local, national, and international. This also applies to my last point, namely the point of international protection and national wildlife management. As pointedly observed by Nuttall:

> Administratively, Greenland is being redefined as one national hunting and fishing territory, contrasted with a diversity of local hunting and fishing territories that have long characterized the social, cultural and economic make-up of the coastal areas. Caribou, whales, seals and fish, which have traditionally been subject to common use-rights vested in members of a local community, are becoming national and privately owned divisible commodities. The ways they are caught, used and consumed are now subject to rational management regimes defined by the state and the interest groups of hunters and fishers (such as KNAPK, the Greenland Association of Hunters and Fishers), rather than locally understood and worked-out rights, obligations, and practices. (Nuttall 2009: 307)

In the wake of global concerns with the changing climate the concern with bio-diversity and the protection of particular species has gained further momentum. In the Arctic, the polar bear has become an emblem of the new threats from the climate, and the big marine mammals are being counted and controlled with a view to assessing the possible harvest each year if the species are to survive. The Greenland Institute for Natural Resources gives regular advice to the administration, and hunters must report their catches in detail. There are not always unanimity between the biologists' view and the hunters', but in general this is not seen as a remnant of the colonial

structure, because (in contrast to North America) Greenland's game resources were always seen to belong to the Greenlanders, and local knowledge is often integrated into the biologists' advice (Sejersen 2004b).

Obviously, the 'counts' made by the two groups are not necessarily convergent; a case in point is provided by an analysis of halibut fishing in the Disko Bay area (Roepstorff 2000). Noting their different measurements, Roepstorff concluded that local fishermen and biologists have different kinds of knowledge, because they have distinct practical interests. Yet, and this is the point, it is not a simple conflict of interests, as some would read it; the two kinds of truth about the stock cannot be measured directly against each other. Without a careful consideration of the processing of observations and the production of knowledge, the two kinds of knowledge are but that: two kinds of knowledge. The reason for stating this is a wish to confront any idea that anthropologists are always taking sides for local culture and against science; this makes no sense. For the biologist, a long-term reproductive estimate and the abstract entity of 'the stock' frame their counting, while the fishermen measure by sightings, by previous experience, and by catch. For both parties, the fluctuation of the populations is part of experience, and even within biology this is still largely unexplained (Meldgaard 1996). 'Protection,' therefore, may not always address the reason for stock diminishment.

In the Arctic, people have survived the fluctuations in their prey by basing their economy on a broad range of resources in addition to their high mobility. In the Thule district, apart from seal, narwhal, walrus, and polar bear are the most important species hunted, but reindeer and muskoxen are also hunted (by some) on headlands accessible by boat in the summer season. Additionally, people will fish for polar cod from the ice when possible.

The narwhal is the dominant 'cash-crop;' both the tusk and the *mattak* (a thick layer of blubber and skin) are sold at a high price, and it is no surprise that the hunters are keen on the narwhal, arriving in numbers in late July, early August and populating the fjord running eastwards from Qaanaaq for some weeks. The fjord has appropriately been named the Whale Fjord since the first Europeans

reached its shores. In 2001 the narwhals of the fjord were counted from the air, using new digital photographic equipment and a digitally superimposed fine-meshed grid; the count – corrected for submerged whales etc. – arrived at a little over 4000 narwhals in the fjord during the selected weeks (Heide-Jørgensen et al. 2002). I did not know about this count when I was in Qaanaaq in 2007 and talked with a man who had been allowed up in the aircraft to see how it was done. I was curious, not simply about the biological monitoring per se, but also of its level of convergence with local estimates. I asked whether the assessment made by biologists (of which I knew nothing, and had not been given any count), matched the hunters' own idea of how many whales there were. My friend took some time to answer: "It is difficult to say; how many is many? The hunters some times say that there are many, but they cannot know for certain how many there are. If they just get one, and there are more left, then there are many." The point is, that there seems to be *enough*. This feeling also applies to polar bear and to walrus, otherwise threatened by the warmer weather (Rosing-Asvid 2002; Born et al. 2008; Born 2005), because in the far North, there is so far no concrete indication of a lack of animals. The 'virtual' stock available in Greenland as a whole may be shrinking in the eyes of biologists, who assess the numbers from above, so to speak. But seen eye-to-eye with the prey, there is still more than enough.

In 2008, the hunters of Qaanaaq caught approximately 70 narwhals, I was told – just about their given quota. Compared to the estimated number of the pack in fjord, this does not seem excessive, and the hunters would have liked to go on. Yet, apart from the quota, there were other challenges to the hunt; the rapidly calving and thundering glaciers descending from the ice cap at the bottom of the fjord, where most of the whales were found, threatened the summer camps on the closest shores and islands by flooding. Also, while the hunters could normally float the narwhals to safer shores, and possibly even back to Qaanaaq for cutting up, this summer it was too risky, because the fjord was visited by killer whales who could not resist the temptation of a free meal floating behind the dinghy. It would therefore take many trips back and forth to bring a whale in; the tusk, if there was one, and as much *mattak* as the boat

could carry, was always in the first load. Relatives would gather on the beach at any time of the (polar) day, to celebrate the catch and receive a share. Although not exactly sub-standard in terms of actual catch, there was a sense that the hunt was somewhat circumscribed by the glacier melt down, by hostile whales in the wake of the 'good' ones, and also, certainly, by the quota – being distributed equally among all the registered full-time hunters of the village, who did not have equal success, of course.

It is not that the hunters want to hunt freely and that they do not care about potential over-hunting; they care more than anybody, but they also know more than most. First and foremost, they have always lived in close dialogue with the animal world and have killed only for survival. They followed the game, and migrated between winter dwellings where they largely subsisted on last summer's catch during the long polar night – with the odd polar bear or other animal added – and more dispersed summer dwellings where they had to fill up their larder. Not surprisingly, Qaanaaq was originally a summer settlement, where people went to catch whales and birds. Evidently, the hunters did whatever they could to ensure their survival, and by implication they paid close attention to their prey. They even courted it in earlier times.

Thule was always the gateway to Greenland, meaning that it was up there in the far North that the pre-historical Eskimo hunters crossed the strait between the American continent and Greenland. Archaeologists have documented several waves of immigration, among which the so-called Thule Culture, mentioned above, was the latest. Throughout the entire Eskimo region and across all of the archaeologically defined cultures, there is a remarkable continuity in the making of the harpoon head. It is carefully cut in bone and fashioned like a seal head, and it is generally established, historically and ethnographically, that the soul of the prey resides in the harpoon (Rasmussen 1929: 185; Gulløv 1997). The harpoon head had to attract the seal, whose soul was then incorporated into it for some time after its death. Quite apart from the fact of courting the prey, the harpoon heads also tell another story: Gulløv has been able to show how changes in the design of the harpoon head correlate with climatic changes. In the twelfth century a new harpoon type enters the

scene up north at the time of warmer climes, where the prey consisted of smaller seals (Gulløv 1997: 132). After a couple of hundred years the Thule culture disappeared and there are no finds from the around 1500 to 1800 – the time (later) known as the Little Ice Age. Further down the west coast of Greenland, the harpoons are 'characterized by quick changes of types, some disappear completely, new paths are sought, and at the same time the design becomes less fixed, the variations increase. I will call this a period of stress' (J. Meldgaard 1986, quoted in Gulløv 1997: 136).

In order to fight off poverty and deprivation, the Greenlanders worked creatively to manage the environmental change. When in the 17th and 18th centuries a significant change in the natural resources took place due to the changing climate, the appeasement of the prey had to ensured by all means. As Gulløv has it:

> Our earliest ethno-historical sources originate from this period. They tell about the necessity to change the design of the hunting tools if for some reason the prey failed to come. Just as it was the case at the Gateway to Greenland half a millennium earlier, this process of change was not characterized by random choices, but was deeply rooted in a tradition which determined the design. (Gulløv 1997: 136)

As long as the seals approved of the harpoon head, people would be able to survive. When climate-derived stressors affected the local economy, designing new harpoon heads was one way to circumvent potential misery, and to flatter the Sea Woman, who was in charge of releasing the seals from the bottom, and who played her own role in the process of cultural change (Sonne 1990).

There are several lessons from this story of harpoon heads, in itself a testimony to the value of detail in scholarship. The first lesson is that, evidently, hunters care very much about their prey, and that they always went a long way to please it – even to court it, one might say, so that the prey gave itself up for consumption. The second lesson is that the climate has changed before and that artisan creativity was a counter-measure to destitution. Further, it goes to show how the sense of place and the perception of nature's affordances are deeply embedded in a cosmological order, which makes no distinction between nature and culture. Characteristically, 'the Greenlandic

word for "overfishing" is a moral concept, qualifying a person, not a virtual stock' (Roepstorff 2003: 134). The local version underscores the direct relationship between hunter and prey as well as the paramount value of not killing more than is strictly needed for survival. By contrast, the biological view of overfishing points to a global perspective and to absolute numbers – that will always remain estimates.

This takes us right back to the people of Thule and their misgivings about the quota system with which they must comply. They have always lived by their own measure of protection, and in many ways this is far more efficient than the counts and numbers appealed to by scientists. Again, the important thing is to make clear that the possible conflict is between points of view, and not between long-term interests. The first written measure of protection of the prey is found in the Thule law, made by Knud Rasmussen and his associates in 1927, in the name of future generations – or as we would say today, with a view to sustainability. The law was designed at regulating life in the Thule District, still a privately owned and autonomous colony in the far North, but the law itself was administered by the local population and has been appropriated by later generations as well: 'Local people from Avanersuaq/Thule have themselves made these rules. As far as we know, regulations were printed for the first time in 1927 with the assistance of Knud Rasmussen' (Qujaakitsoq 1990: 104). Today, the main protection relates to modern technology: 'We prohibit direct involvement of motor boats in the hunt. The reason for this is the fact that the narwhal is one of the most important resources in the Thule region. The hunter is requested to use his kayak, and the narwhal must be harpooned before it is shot' (ibid.). Hunters still live by these rules and are very proud also of the measures by which they have contributed further to protect the animals upon which their life depends.

While covering the longer distance to a hunting camp the hunters travel in their dinghy with an outboard motor, but as soon as the get near to a pack of whales they descend into their kayak and approach it with the harpoon. The harpoon is fastened with a line, furnished with a seal skin floater that prevents the whale from disappearing into the deep. Only when secured do they use their gun to finally

kill it off. No whale is ever wasted by this method. By contrast, the Thule hunters claim, everywhere else hunters sail directly into the pack of whales in the motorboats, scaring the pack off for the next hunter, and shooting directly at the prey. Many killed whales are lost this way. Even worse, in some places that were named to me people would kill the whales only for the tusk, and leave the meat to rot. This is the ultimate insult to the animal and to nature in general. Qujaakitsoq explains further:

> We try to avoid making our own shadows when we hunt narwhal. The narwhal is a sensitive creature, and when it sees your shadow in the water, it will not come up. In order that we shall not make shadows, our hunting position is determined by the position of the sun. And we try to avoid making any noise. The narwhal is very sensitive and hears well. So we try to be quiet when paddling or walking on ice. We try to hunt in the way tradition teaches us.
>
> Our equipment is: the harpoon (*unaaq*), the bladder (*avataq*), and the throwing-stick (*niutaq*). (Qujaakitsoq 1990: 104)

Small wonder that the people of North Greenland are likely to feel mocked when they are allotted their quota on the same premises as everybody else. Up there, no diversification of livelihoods is possible, and people must continue to respect the soul of the prey. Economics is one thing, another is the sense of being alive and belonging to a network of social relations that is also closely related to the hunt. When whales are landed, relatives gather on the beach to have a share, and when winter darkness turns into collective stillness, people need the *mattak* to fight off depression, they tell me – and I am convinced.

For a community based on the hunting of marine mammals since times immemorial, the concern about species protection is immanent in hunting practices. Yet the circumscription of nature's potentiality with international measures that cannot pay heed to local variability threatens their sense of justice. For the hunters, bear, walrus, narwhal and seal are part of an environment to which people also belong; they play different parts in the ever unfolding environmental drama, yet together they constitute a whole, still struggling to find a place within the modern world, where qualitative differences are

taken into account before quantitative restrictions are imposed upon their living.

Once again we see how climate change converges with other changes and make the community's space of manoeuvring shrink to the point where local sustainability is no longer an option. The national measures of protection, deriving from international biological monitoring and internationally acknowledged values of protection, are – for all their right intentions – overwriting the local sense of responsibility with adverse effects.

Resilience: An exercising of flexibility

This finally leads me back to the general discussion and to suggest that an important parameter in any notion of resilience is that of flexibility. In the Arctic, flexibility – and indeed survival – has been closely linked to mobility. People have lived within a nomadic landscape in the sense suggested by Deleuze and Guattari. In their often-cited essay on nomadology, they claim that 'even though the nomadic trajectory may follow trails or customary routes, it does not fulfil the function of the sedentary road, which is to *parcel out a closed space to people*, assigning each person a share and regulating the communication between shares' (Deleuze & Guattari 2004: 420, original emphasis). By contrast, 'the nomadic trajectory does the opposite: *it distributes people (or animals) in an open space*, one that is indefinite' (Deleuze & Guattari 2004: 420, original emphasis).

In the far North, the territory as such is relatively unmarked. In the polar North the Inuit have migrated, moved apart, regrouped, and exchanged news and kinsfolk as a matter of course. This in itself makes a huge difference from living within more confined spaces, where territory is closely related to property rights and other well defined social relationships. But today, people have become 'sedentary' with all that this implies (Hastrup 2009). Their mobility has become circumscribed as has their access to game – both by the chronic climate disaster, by political trends, and by an increasing emphasis on an internationally endorsed quota system.

Bateson says: 'To maintain the flexibility of a given variable, either that flexibility must be exercised, or the encroaching variables

must be directly controlled' (Bateson 1972: 503). Since the Arctic peoples cannot control the encroaching climatic, political, and ecological changes, they must exercise flexibility – pursuing whatever problem is set before them without a fear of falling. Exercising flexibility is not necessarily to explode traditional thinking. By contrast it could be argued that traditional thinking, in the sense of disciplined and recognizable ways of rationalizing about the environment, is a precondition for a sustained creativity. Conversely, creativity incorporates knowledge and features deriving from many sources – ranging from biological to cosmological.

The Arctic hunters have always had to be creative to capture the possibilities of the moment and, as we saw for the harpoon heads, this creativity was based in a sense that the environment had to be courted rather that fought (compare Willerslev, this volume). The point I want to make is that local knowledge and a tradition for physical and conceptual flexibility in an ever-changing environment provide the necessary safety net for the hunters, while still uncovering the basic variables of the emerging reality. Another safety net is of course provided by the welfare state, leaving no-one starving.

It is important to note here that by referring to *local* knowledge, it is an agglomeration of many kinds of knowledge, traditional and modern, experiential and scientific, as these have been brought to bear on the engagement with the landscape. A case in point is the gradual adoption of satellite navigation in the Arctic, which cannot replace age-old orientation systems by way of landmarks and implicit routes, but which may improve it in some ways (Aporta & Higgs 2005). This is still not part of life in the Thule District, however – but it is known and wished for.

Exercising flexibility is an implicit part of social life. Resilience at this level implies a commitment to exploring the gaps between convention and creativity, or between fixed cultural frames and individual agency in the face of new challenges. This applies thoroughly in the Arctic where an ever changing and challenging environment has been part of experience and where survival has depended upon an acknowledgement of that fact. Climate change in Greenland is understood as consistent with the constant remaking of the world (Nuttall 2009: 299). Flexibility has been the hallmark

of local resilience in a world of flux, as has the sense of community within which one knew who one was.

However, concerning flexibility, there is not much potential for change that is not already committed to fighting off immediate disasters; flexibility of response with respect to climate change is restricted because of the collateral changes of the political and the ecological order taking place at the same time. The well-known safety net fitted to the Arctic hunters' environment – their mobility and their feel for nature – is becoming increasingly threadbare. While not starving, the hunters may not be able to recognize themselves for much longer; if flexibility is already committed as merely a means of complying with specific rules, it is no longer flexibility in Bateson's sense.

In anthropology we encounter another challenge in the face of this and other histories of climatic impact on the social life of people: we no longer know what to mean by 'resilience' in the social world. This challenge is a welcome inducement to conceptual creativity.

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