在来知、気候変動、生業活動適応・不適応: グリーンランドの調査から考える Local knowledge, climate change, subsistence (mal) adaptations

——Thoughts from Greenland——

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1. The question and problems

I began research in Greenland in 2003 as part of an investigation into representation of Indigenous peoples in media and museum exhibits. When visiting the Greenland National Museum in Nuuk, I became aware of sheep farming in south Greenland. Through this realization, the stark difference between the society and subsistence activities of north and south Greenland Inuit (Kalaallit = Greenlanders) and differing reaction to climate change became evident. Such a distinct variance is not evident in Alaska or Canada.

In order to substantiate my intuition, I began to gather data concerning the history of climate change in Greenland, the present situation of regional groups and their subsistence activities, and well as the stance toward climate change by Inuit organisations.

Today I present a brief review of representation in exhibits of Greenland National Museum, and then onto a synopsis of climate change research based upon research to date

(September 2013 ノース、チューレ文化、シオラパルク、Tasiusaq). Concerning the attitude of the Greenland government, I depend on prior research as my efforts to meet government agencies in Nuuk, September 2013 all were met with last minute cancellations.

2. Terminology

Permanent residents of Greenland are officially referred to as Kalaallit (カラーシュ リト⇒カラーリト). This designation has several self-contradictory and ambiguous connotations. Greenland's official designation is Kalaallit Nunaat, "The land of Kalaallit", and permanent residents, regardless of ethnic background are Kalaallit (Greenlanders in English). Inuit ancestry of the 56,000 residents is estimated to be approximately 50,000 persons. However, the Government, like Japan, does not query ethnic origin in the census. Is this omission to strengthen the Greenland/Denmark government-manufactured Kalaallit unity policy? (官製国民政策). I speculate that the national designation Kalaallit may be a political camouflage to obscure ethnic background (Inuit/Danish) and regional cultural/subsistence base differences.

However, Kalaallit is also a pseudo-ethnomym used in place of "Inuit" (Inuhuit in north Greenland, Ammassalik/ Ittoqqortoormiit in east Greenland). The ethnomym "Inuit" is avoided in south Greenland, seemingly to have the connotation of backwardness, even to

have a derogatory nuance. A young self-designated Kalaallit woman I met in Nuuk, in answer to my question why "Inuit" is not used, told me "the Inuit are the backward people up north". In south Greenland, I have not seen or heard the term "Inuit" save in academic situations.

Another implicit (I felt) facet of the designation Kalaallit has a connotation of a peculiar ethnicity among the "Inuit" of south Greenland. In his research into sheep farming in south Greenland, Hayashi [2013:69] writes

'There was always a debate about whether they should call themselves "Inuit" or "Kalaallit" (GI., Greenlanders). An interesting, persuasive opinion was that they are actually a mixture of Inuit and Danes, which makes them "Kalaallit.".

During my research in south Greenland, in response to my persistent interrogation into the difference between "Inuit" and "Kalaallit", a sheep farmer in his late 40s, said (in exasperation??) that Kalaallit is a new ethnic group made up of former Inuit and Danish ancestry.

「Hendrine を相手にアイデンティティと Kalaallit について夜 9 時半まで延々と話す。夫の Jorgen の意見では、Kalaallit は新しいアイデンティティ集団であり、かつての「イヌイト」 と家系にはデンマーク系のある Greenlander を包括する概念だという。

Hendrineはテレビ画面に出るKalaallitをKalaaleq(カラーシュレック)と発音 して、それは北欧人が18世紀にグリーンランドへ来た時分、あまりよくない意 味の言葉だったという。しかし、北欧人の影響だろうか、Kalaallitはイヌイト自 身に受け入れられた民族名称として定着して今日に至るという。

In either case, mixed Inuit/Danish ancestry seems to be an implicit, possibly decisive factor of being Kalaallit. However, this may not be, and probably is not a factor in the official usage of Kalaallit. In any case, these contradictions and ambiguities are essential to an understanding of Greenland politics and regional divisions.

Greenland Home Rule has become increasingly Greenlandized, rejecting Danish and avoiding regional dialects to <u>standardize the country under</u> <u>the language and culture of the Kalaallit (West Greenland Inuit)</u>.

http://en.wikipedia.org/wiki/History_of_Greenland There are three administrative regions of Greenland: North, East and West, but in this presentation, I refer to the area extending from Nuuk southward to the southernmost tip as south Greenland.

3. Sketch of Greenland history

Four, possibly five genetic populations may be postulated in the history of Greenland: Palaeo-Eskimo (Saqqaq, Independence), Dorset, Thule, Norse and Danish. The Dorset are an enigmatic people, their genetic and geographical roots yet to be prescribed. Be that what it may, each group was significantly affected by historical changes in the climate. A relatively recent episode was the Medieval Climate Optimum (ca 950-1250), during which the Norse of Iceland, led by Eric the Red, settled south Greenland in 982. They brought their sheep, goats, cattle, horses, pigs and dogs to begin a pastoral society. The first settlement was established at Qassiarsuk and subsequently several hundred livestock homesteads flourished until the Little Ice Age (ca 1350-1850).

It was at this time that the Thule also began to migrate from northwest Alaska, following large whales moving into the de-iced summer Arctic Ocean. Both events were in response to a significant climate change.

The culture and society of both the Norse and Thule suffered greatly from the cooling, the Norse disappearing from Greenland in the mid-15th century. The whale-oriented Thule culture (the genetic ancestors of modern Inuit) disintegrated into dispersed mobile seal- and caribou-hunting Inuit groups as recorded in early ethnographies.

A Nordic people, the Danes, who re-introduced small small-scale stock farming in 1721, again populated Greenland. However, because Inuit the hunter-gatherers showed no interest, but rather disdain for farming, their way of life was not essentially affected until the 20th century. Sheep farming was introduced into the Kalaallit society of south Greenland at the turn of the century, but did not become a full/fledged industry until the 1950's. Even today, sheep farming constitutes a very small part of Greenland economy, but has become an established industry and may be a harbinger of economic development and change in this age of climate warming.

It is probably not coincidence that modern sheep farming was introduced around Qassiarsuk, where many Norse ruins dot the landscape. Is this a manifestation of local knowledge?

4. Climate change in the Arctic

The effects of climate change in Greenland receive sensational coverage by the media, here and abroad. The bulk of media focuses upon the negative aspects of climate change on north Greenland Kalaallit (Inuhuit), often in a disproportionate manner. Inuit representative groups such as the Inuit Circumpolar Council (ICC) take advantage of this coverage to pursue a discourse of a culture and way of life in danger of extinction. Namely, "the Inuit are finding it increasingly difficult to pursue traditional (that is post-Thule: Stewart comment) subsistence activities because of changes in sea-ice conditions and quarry distribution. For example, the use of snowmobiles is prohibited by law in north Greenland subsistence activities. Only dog sleds and other non-mechanical means are allowed. As the procurement of walrus and other quarry used for dog food is hard to come by, maintenance

of the essential dog teams is not easy. Thus, the vicious circle of insufficient dog food, not enough dogs to hunt walrus, no walrus, no dog food, no sea ice hunting.

However, in south Greenland, where 80% of the population is concentrated and the seat of government, there less concern over the warming trend. This is for economic reasons. Climate warming benefits domestic food self-sufficiency: sheep farming, vegetable production. Greenland is nearly self-sufficient in potatoes and mutton. Turnips and other vegetables show promise also.

More than this is the possibility of extracting mineral and petroleum resources in and around Greenland. These opportunities do not result only in economic development, but also extend into the realm of politics: full autonomy? new nation?

5. Climate change: a review

It is an indisputable fact that the climate is warming, a trend that is particularly evident in the Arctic. However, there are conflicting arguments concerning the severity, duration and cultural/economic ramifications of this trend. Serious and continuing erosion of shorelines in northwest Alaska, glacier retreat throughout North America, late formation and early spring melting of sea ice are but a few of detrimental changes over the past few decades. These changes negatively affect hunting activities, increase danger when on sea ice and cause variation in whale migration routes that make it difficult to find whales migrating from the Pacific to the Arctic Ocean in the spring.

On the other hand, many Arctic Indigenous people intimate that climate variation is the norm. Although negatively affected, local knowledge indicates that climatic and other environmental conditions are always in a state of flux, as noted in the following excerpts.

◆ New is always the same. (Willerslev 2012)

◆ Everything is the same every year because everything changes every year.

(Omura 2005:79).

✦ Because the Inuvialuit are experts at living in highly variable environments, it is not surprising that switching species and <u>adjusting the where, when, and</u> <u>how of hunting have enabled them to cope successfully with climate change</u> in the I990's (Berkes & Jolly 2001).

♦ As such, <u>traditional knowledge has been an important resource for Inuit in</u> <u>adapting to environmental change for thousands of years</u>, both in guiding individual behavior and experience, as well as in shaping a collective understanding of life in relation to the land. (Johnson 2009)

◆ In Kalaallisut (Greenlandic) the word for weather and climate is sila. Sila is also used to mean "the elements" or "the air". But sila is also the word for "intelligence/consciousness", or "mind," and is understood to be the

fundamental principle underlying the natural world. Sila is manifest in each and every person. It is an all-pervading, life-giving force – the natural order, a universal consciousness, and a breath soul. Sila connects a person with the rhythms of the universe, integrating the self with the natural world. As sila links the individual and the environment, a person who lacks sila is said to be separated from an essential relationship with the environment that is necessary for human well-being. When people in Greenland experience a change in the weather, this change is experienced in a deeply personal way. And <u>when they talk about their concerns about climate change, they articulate this not only in terms of how their own sense of self, personhood, and well-being is changing in relation to external climatic fluctuations, but in their concerns for their own sense of self and well-being in terms of climate change. (Nuttall et al 2005)</u>

✦ For Athapaskan people of Canada's Yukon Territory and southeast Alaska, memories of the Little Ice Age play a significant role in indigenous oral traditions. Eyak, Athapaskan, and Tlingit place names encapsulate information and local ecology and climate now rendered invisible by English names. <u>Stories about</u> changes in the weather, to the landscape, and to glaciers persist with a richness, range, and variety because of ongoing risks they posed to everyday life well into the 20th century. (Nuttall et al 2005)

◆Questionnaire to Kalaallit youth

Have you heard about climate change?

yes:	78%	
no:	16%	
How did you learn about it?		
from television:	98%	
in school:	74%	
from newspapers	:38%	
from parents/relatives:	11%	
personal experience:	0.1%	(Rasmussen 2010)

There other similar excerpts in the literature that I omit here. It goes without mention that there are many testimonies to suffering and loss resulting from "unprecedented climate" that must be judged from an historical perspective.

In opposition to these "one the site" (現場) observations, Inuit Circumpolar Council and other agencies bemoan that hunting skills and knowledge (local knowledge) will not be transmitted to the young generation. Sheila Watt-Cloutier, past Chair of ICC stated that the very survival the Inuit is at stake. The ICC filed a petition to the Inter-American Commission

on Human Rights, in which climate change is in violations of human rights, i.e. the right to life and physical security, to personal property, to health, to practice our culture, to use land traditionally used and occupied, to the means of subsistence.

I will criticise these points later.

On the other hand, national governments, trans-national corporations, emerging economic powers (i.e. China) and Kalaallit of south Greenland welcome "climate amelioration" (a corporate euphemism for global warming) for economic and political reasons. Economic benefits include access to seabed and land mineral/petroleum deposits, open ice sea-lanes. These all derive from late sea ice formation/early sea ice melting, glacier retreat brought about by climate warming.

6. Climate, politics, local knowledge

Mineral and petroleum deposits in and around Greenland have been known for decades, but glaciers and sea ice have made it impractical to extract and ship these resources to consumer centres. Recent change in sea ice conditions and glacier retreat facilitate resource development, and promise to open sea-lanes. Recently, Russia, China and South Korea have traversed, or are preparing to ship via the Northern Sea Route (Northeast Passage) from Nordic Scandinavia/NW Russia to the Pacific Ocean. This route, already a commercial shipping route, is more than 10,000 kms. shorter and 18 days faster than the Suez Canal route.

Climate warming stimulates anticipation to resource development, an anticipation particularly marked in the Greenland government. About half of public spending on Greenland is funded by block grants from Denmark which in 2007 totalled over 3.2 billion kr. (320 億クローネ=576 億円). Increased revenue from resource development could enhance Greenland's economic independence, which would allow demands for greater autonomy, possibly even nationhood?

Thus, the government is in a double bind. On one hand, government must be sympathetic to the plight of north Greenland Inuit, who although contribute almost nil to the national economy and comprise but a very small percentage of the population, are a symbol of "real Greenland, land of hunters". This stance is in contradiction to development of petroleum resources, a CO_2 emission culprit.

On the other hand, resource development, while contributing to greenhouse gases, could become the backbone of national economy and greatly contribute to economic prosperity and efforts for increased autonomy. This would run against the Inuhuit and Inuit Circumpolar Council campaign against climate change caused by greenhouse gas emissions. Government must take a stand against climate warming, while simultaneously taking advantage of the warming trend to bolster the economy.

- 7. What is 'local knowledge'?; ingenuous questions (素朴な疑問)
 - a. How does local knowledge differ or not differ from Traditional Ecological Knowledge (TEK), Traditional Knowledge (TK) and Indigenous Knowledge (IK)?
 - b. Why does not the international community and representative interest groups such as the ICC not recognise nor refer to local knowledge: the Thule/Inuit transition?
 - c. Is local knowledge any less political and liable to manipulation than 'science'?
 - d. What is the extent of local knowledge:
 - * limited to regional societies?
 - * societies in similar natural environments?
 - * urban societies?
 - * nations? (国民)
 - e. Why did (does) not local knowledge prevent societal disintegration?
 - * Dorset culture in Greenland
 - * Norse society of the 15th century
 - * impending inundation of Tuvalu, Kiribati, Nauru: these islands appeared in LIA
 Vs. Thule / Inuit transition
 - f. Does local (traditional) knowledge apply to contemporary Inuit society?
 - * limited to being a political tool / fulcrum
 - Inuit society has transformed from a mobile small-scale
 - hunting/gathering society into a sedentarised populous
 - hunting/gathering society
 - * contemporary reindeer/caribou sports hunting
 - * no local knowledge in sheep farming? Did Norse ruins have an impact?

Climate Testimonies and Climate crisis Narratives : Inuit Delegated to Speak on Behalf of the Climate, Lill Rastad Bjørst Acta Borealia 29-1,pp.98-113, 2012

The Inuit (or Greenlanders) as global and local witnesses is not so easy to grasp. Professor Tim Ingold spoke about anthropology of the North: "<u>Northern people have always</u> <u>perceived and inhabited their environments by moving around rather than staying put. They</u> <u>have never been local. And for the same reason they have not 'gone global'</u>." "<u>Environmental change is not a new phenomenon in the North</u>. Only by placing contemporary observation and experience in the context of the long term can we get a measure of the true significance of the changes, both social and environmental, that strike us so forcefully today" (Ingold, 1999: 70).

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Is it because of the Western fascination with the vulnerable hunting cultures in the Arctic which have had a devastating future at hand long before anybody was talking about climate change? Is it because the Inuit cannot (from a Western perspective) be included in the global liberal narrative about consumption, economic growth and "freedom to pollute"? Professor Zizek who is analysing ecology from a class and power perspective concludes that ecology makes the ideal candidate for hegemonic, where some are included and others excluded (Zizek, 2008: 424, 440).

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[Activists] were arguing for one global environment on one planet. However, as exemplified, even that kind of association comes in multiple topological shapes; it is perhaps more. Law & Urry (2004) argue that <u>there is not "one global"</u>, <u>but many "situated</u> <u>globalities</u>".

Taking the position as "vulnerable" does not mean that there is not more to it, as the two hunters from Ilulissat so nicely demonstrated. In some cases, it is a strategic choice: both <u>the hunters and the two young women wanted the world on a global scale to stop</u> <u>emissions pollution, which scientists told them contributed to climate change. But local</u> <u>affairs were entangled in an entirely different kind of cosmology, they argued, where</u> <u>Greenland has the right to develop and (in my words) pollute as much as it wants to</u>. They were delegated to speak on behalf of the climate on a global scale as firsthand witnesses, <u>but when it came to the local scale, they suddenly felt that they could only speak on behalf of Greenlandic society and felt no less embedded in global climate-crisis narratives.</u>

The tip of the iceberg: Ice as a non-human actor in the climate change debate Lill Bjørst, Études/Inuit/Studies, vol. 34, n° 1, 2010, p. 133-150.

Scientific discourses on climate change are often confusing in terms of human impact as they move from local to global impacts over time scales ranging from 40 years to <u>a million years</u>. By focusing on ice, scientists, politicians, NGOs, and artists create narratives about Arctic climate change more than Greenland's local population and politicians do.

Unfortunately, <u>these narratives also construct a world without people or social facts</u>, ice being the Arctic's primary informant in various settings. My point here is that these narratives and metaphors adapt ice to new contexts and situations. Ice is accompanied by a cacophony of voices that let it act and speak in various ways. <u>Such is the paradox of non-human ice: it acts like a person and is never without the company of other actors in the climate debate. Hence, it is not only something about to melt. It is a giant, a heart, a highway, a field site, an obstacle, an icon, a symbol, a tourist attraction, a background picture in conference halls, a piece of artwork, and something that is hard to live with and without.</u>

Icebergs are acting in the climate debate in a way that not only creates narratives for themselves, but also for the Inuit. Such narratives may be critical. Ice represents the <u>Arctic and dominates the climate debate but also silences many relevant and important</u> <u>messages from the Inuit, in particular, their quest for development</u>.

It is an irony that the Greenland Inuit used ice to represent themselves during their parallel event at COP15. Visually, one could only see the tip of the iceberg. This image likewise symbolised just how little the other participants knew about the life and challenges of Inuit in a changing Arctic.

Buijs, Cunera Inuit perceptions of climate change in East Greenland, 2010

[P]olitical elites usually ignore Inuit perceptions of climate change, and Indigenous knowledge is often looked down upon by the policy-makers and natural scientists.

When outsiders such as Danish employees, scientists, journalists, tourists, NGOs, wildlife management organisations, <u>and environmentalists apply their Western norms and values to Greenland's situation, they are insufficiently aware that they stem from a different culture</u>. Sometimes their calculations and opinions do not differ so much from Indigenous observations. <u>But local opinion is being ignored.</u>

<u>Climate change and the perceptions of its effects on animal life are highly politicised</u>. International cultural politics is influencing the situation in East Greenland in the seal-hunt debate.

<u>There is a growing demand among Tunumiit to make their own choices and to take a stand</u> <u>against Euro-American dominance</u>.

Literature

岸上伸啓

2011 北アメリカ極北地域における気候変動の生業活動におよぼす諸影響に関する覚書:カナダ国ヌナヴィク地域と米国アラスカ北西地域を事例として」『海洋環境保全の人類学』(調査報告 97)、pp.299-315、国立民族学博物館

スチュアート ヘンリ

- 1982 「海進海退」『縄文文化の研究』第1巻、pp.130-142、雄山閣
- 2002 先住民と国民国家:カナダ・ケベック州を中心に、『国際社会(3)国民国家は どう変わるか』(梶田 孝道、小倉充夫 編)、pp.195-224、東京大学出版会
- 2005 「グリーンランド、カナダ、アラスカ、シベリアのイヌイト:ツンドラの世界」 『北米:講座 世界の先住民族』(富田虎男、スチュアート ヘンリ編著) pp.219-231、明石書店
- 本多俊和(スチュアート ヘンリ)
 - 2010 「極北地帯の環境: イヌイト社会と気候変動」『環境問題への文化人類学的アプ ローチ』(内堀基光、本多俊和 編) pp.80-93、放送大学教育振興会

ACIA (Arctic Climate Impact Assessment)

2005 Arctic Climate Impact Assessment Scientific Report, Cambridge University Press

Aminzadeh, Sara

2006-2007 A Moral Imperative: The Human Rights Implications of Climate Change, Hastings International and Comparative Law Review 30:231-265

Arneborg, Jette; Kirsetn Seaver

2000 From Viking to Norseman, Vikings: The North Atlantic Saga, (W.Fitzhugh, E.Ward eds.), pp.281-284, Smithsonian Institution Press

Arneborg, Jette, Niels Lynnerup, Jan Heinemeier, Jeppe Møhl, Niels Rud, Árný Sveinbjörnsdóttir

2012 Norse Greenland Dietary Economy ca. AD 980–ca. AD 1450, Journal of the North Atlantic, Special Volume 3:1–39

Barber, D. G.; J. V. Lukovich; J. Keogak; S. Baryluk; L. Fortier; G.H.R. Henry

2008 The Changing Climate of the Arctic, Arctic 61-5:7-26, Arctic Institute of North America

Berkes, Firket; Dyanna Jolly

2001 Adapting to climate change; social-ecological resilience in a Canadian western Arctic community, Conservation Ecology 5-2

Birchall, Jeff

2006 Canadian Sovereignty: Climate Change and Politics in the Arctic, Arctic 61-5:iii-iv, Arctic Institute of North America

Buijs, Cunera

2010 Inuit perceptions of climate change in East Greenland, Études/Inuit/Studies 34-1:39-54

Carmack, Eddy; Robie MacDonald

- 2008 Water and Ice-Related Phenomena in the Coastal Region of the Beaufort Sea: Some Parallels between Native Experience and Western Science, Arctic 61- 3: 265–280, Arctic Institute of North America
- Caron, Andrée; Gérard Duhaime
 - 2010 Analyzing Arctic Social Realities ArcticStat, The Political Economy of Northern Regional Development– Yearbook 2008, Vol. I, pp.251-286, TemaNord, Nordic Council of Ministers, Copenhagen

Crate, Susan

- 2006 Investigating local definitions of sustainability in the Arctic: insights form post-Soviet Sakha villages, Arctic 59-3:294-310, Arctic Institute of North America
- 2012 Climate change and ice dependent communities: perspectives from Siberia and Labrador, The Polar Journal 2(1):61-75, Routledge

Crate, Susan; Mark Nuttall

2009 Anthropology and Climate Change: From Encounters to Actions, Left Coast Press

Crump, John

2008 Many strong voices climate change and equity in the Arctic and small island developing states, Indigenous Affairs 1/2:24-33, International Work Group for Indigenous Affairs

Degeorges, Damien

2013 Greenland's State-Building Process: Still a Long Way to Go, Arctic Yearbook 2013: 337-339, Akureyri, Iceland: Northern Research Forum

Dugmore et al, Andrew; Thomas McGovern; Orri Vésteinsson; Jette Arneborg: Richard Streeter; Christian Kellere

2012 Cultural adaptation, compounding vulnerabilities and conjunctures in Norse Greenland, Proceedings of the National Academy of Science 109-10:3658–3663

Dyke, Arthur; James Savelle; Donald Johnson

2011 Paleoeskimo Demography and Holocene Sea-level History, Gulf of Boothia, Arctic Canada, Arctic 64-2:151-168, Arctic Institute of North America

Elling, Henrik

1996 The Independence I and Old Nuulliit cultures in relation to the Saqqaq culture, The Paleo-Eskimo Cultures of Greenland: New Perspectives in Greenlandic Archaeology (Bjarne Gronnow, ed.), pp.191-198, Danish Polar Center

Fast, Helen; Fikret Berkes

- 1999 Climate change, northern subsistence, and land-based economies, Securing Northern Futures: Developing Research Partnerships (D.Wall, et al eds.), pp.9-19, Canadian Circumpolar Institute
- Ford, James; Kenyon Bolton; Jamal Shirley; Tristan Pearce; Martin Tremblay
 - 2012 Research on the human dimensions of climate change in Nunavut, Nunavik, and Nunatsiavut: a literature review and gap analysis, Arctic 65-3:289–304, Arctic Institute of North America

Freeman, Milton; Lee Foote eds.

- 2009 Inuit Polar Bears and Sustainable Use: Local, National and International Perspectives, CCI Press
- Garcia-Alix, Lola
 - 2008 The United Nations Permanent Forum on Indigenous issues discusses climate change, Indigenous Affairs 1/2:16-23, International Work Group for Indigenous Affairs
- Glomsrod, Solveif; Iulie Aslaksen
 - 2010 Presenting the economy of the North, The Political Economy of Northern Regional Development– Yearbook 2008, Vol.I:237-249, TemaNord 2010, Nordic Council of Ministers, Copenhagen 2010

Gronnow, Bjarne; Jens Fog Jensen

- 2003 The Northernmost ruins of the globe: Eigil Knuths's archaeological investigations in Peary Land and adjacent areas of High Arctic Greenland, Meddelelser om Gronland (Man & Society) 29, Danish Polar Center
- Guralnick, E.

1982 Vikings in the West, The Archaeological Institute of America

Hamilton, Lawrence; Benjamin Brown; Rasmus Ole Rasmussen

2003 West Greenland's Cod-to-Shrimp Transition : Local Dimensions of Climatic Change, Arctic 56-3:271-282, Arctic Institute of North America

Haywook, John

1995 The Penguin Historical Atlas of the Vikings, Penguin Group

- Healey, G.K.etal
 - 2011 Community Perspectives on the Impact of Climate Change on Health in Nunavut, Canada, Arctic 64-1:89-97, Arctic Institute of North America
- Hamilton, Lawrence; Rasmus Rasmussen
 - 2010 Population, sex ratios and development in Greenland, Arctic 63-1:43-52,

Arctic Institute of North America

Huntington, Henry; Shari Fox

2005 The changing Arctic, Arctic Climate Impact Assessment, pp. 2-20, Cambridge University Press

Jensen, Jens; Bjarne Gronnow

2003 Discussion and conclusions, Meddelelser om Gronland (Man & Society)
 29:328-341, Danish Polar Center

Kaae, Berit

2002 Nature and Tourism in Greenland, Wilderness in the Circumpolar North: Searching for Compatibility in Ecological, Traditional, and Ecotourism Values, USDA Forest Service Proceedings RMRS-P-26:43-53

Kleivan, Inge

History of Norse Greenland, Arctic; Handbook of North American Indians (D. Damas ed.), Vol. 5:549-555, Smithsonian Institution

Lange, Manfred

2005 Climate change, Encyclopedia of the Arctic, Routledge

Larsen, Joan

2010 Climate change, natural resource dependency, and supply shocks: The case of Greenland, The Political Economy of Northern Regional Development– Yearbook 2008, Vol. I,pp.205-218, TemaNord, Nordic Council of Ministers, Copenhagen

Lindholt, Lars

2008 Arctic natural resources in global perspective, The Economy of the North (Solveif Glomsrod; Iulie Aslaksen eds.), pp.27-37, Statistic of Norway

Lynnerup, Niels

2000 Life and death in Norse Greenland, Vikings: The North Atlantic saga (W.Fitzhugh, E.Ward eds.)pp.285-294, Smithsonian Institution Press

Mainland, Ingrid; Paul Halstead

2005 The economics of sheep and goat husbandry in Norse Greenland, Arctic Anthropology 42-1:103-120, University of Wisconsin

McGhee, Robert

1996 Ancient people of the Arctic, UBC Press

Nilsson, Christina

- 2008 Climate change from an Indigenous perspective: key issues and challenges, Indigenous Affairs 1/2:8-15, International Work Group for Indigenous Affairs
- McBean, Gordon
 - 2005 Arctic Climate: Past and Present, Arctic Climate Impact Assessment, pp.

2-20, Cambridge University Press

Murray, Robert

2012 Arctic politics in the emerging multipolar system: challenges and consequences, The Polar Journal 2(1):7-20, Routledge

Nuttall, Mark

- 1997 Nation-building and local identity in Greenland: resources and the environment in a changing North, Arctic Ecology and Identity (S.A.Mousalimas ed.), pp.69-84, Akademiai Kiado
- 2004 Inuit, marine resources and climate change: risk and resilience in a changing Arctic, Indigenous Use and Management of Marine Resources (Senri Ethnological Studies 67), 410-427, National Museum of Ethnology
- 1998 Protecting the Arctic: Indigenous Peoples and Cultural Survival, Harwood Academic Publishers
- 2008 Climate change and the warming of politics of autonomy in Greenland, Indigenous Affairs 1/2:44-51, International Work Group for Indigenous Affairs
- 2008 Self-rule in Greenland: towards the world's first independent Inuit state? Indigenous Affairs 3/4: 64-70, International Work Group for Indigenous Affairs
- 2009 Living in a world of movement: human resilience to environmental instability in Greenland, Anthropology and Climate Change: From Encounters to actions (Susan Crate, Mark Nuttall eds.), pp.292-310, Left Coast Press
- 2010 Epistemological conflicts and cooperation in the circumpolar North Globalization and the Circumpolar North (Lassi Heininen, Chris Southcott eds.), pp.149-178, University of Alaska Press
- 2012a Introduction: politics, science and environment in the polar regions, The Polar Journal 2(1):1-6, Routledge
- 2012b Imagining and governing the Greenlandic resource frontier, The Polar Journal 2(1):113-124, Routledge
- Nuttall, Mark; Fikret Berkes; Bruce Forbes Gary Kofinas; Tatiana Vlassova; George Wenzel
 - 2005 Hunting, herding, fishing and gathering, indigenous peoples and renewable resource use in the Arctic, Arctic Climate Impact Assessment Scientific Report,pp.649-690, Cambridge University Press

Osofsky, Hari

2007 The Inuit Petition as a Bridge?: Beyond Dialectics of Climate Change and

Indigenous Peoples' Rights, American Indian Law Review 31:675-697

Parkinson, Claire

2000 Variability of arctic sea ice: the view from space, a 18-year record, Arctic 53-4:341–358, Arctic Institute of North America

Patterson, William, Kristin Dietricha, Chris Holmdena, John Andrews

- 2010 Two millennia of North Atlantic seasonality and implications for Norse colonies, Proceedings of the National Academy of Sciences 107-12:5306-5310
- Piper, Liza; John Sandlos
 - 2005 A broken frontier: Ecological imperialism in the Canadian North, Environmental History 12:759-795
- Pringle, Heather
 - 1997 Death in Norse Greenland, Science 5302, pp.924-926, American Association for the Advancement of Science
- Rasmussen, Rasmus
 - 2000 The sheep-farming Kujataamiut of south Greenland, *Endangered Peoples of the Arctic: Struggles to Survive and Thrive* (Milton Freeman, ed.), pp.113-130, Greenwood Press
 - 2002 Food consumption patterns and local markets in the Arctic, *Sustainable Food Security in the Arctic: State of Knowledge* (Gerard Duhaime ed.), pp.117-144, Canadian Circumpolar Institute
 - 2010 Climate change, the informal economy and generation and gender response to changes, *The Political Economy of Northern Regional Development– Yearbook 2008*, Vol. I,pp.219-238, TemaNord, Nordic Council of Ministers, Copenhagen

Rasmussen, Rasmus et al

- 2008 Food security and sustainable development in Greenland: a synthesis Arctic food security (Bernard Duhaime ed.)pp.169-202, CCI Press
- Rigor, Ignatius
 - 2005 Sea ice, Encyclopedia of the Arctic, Routledge
- Robards, M.; L. Alessa
 - 2004 Timescapes of Community Resilience and Vulnerability in the Circumpolar North, *Arctic* 57-4:325-454
- Savelle, James; George Wenzel
 - 2002 Out of Alaska: reconstruction the social structure of prehistoric Canadian Thule culture, *Hunter-gatherers of the North Pacific Rim* (Senri Ethnological Studies 63:103-122), National Museum of Ethnology
- Strauss, Hannah

2012 Procedures for large-scale energy projects: local communities and siting processes in the Arctic, *The Polar Journal* 2-1:93-112, Routledge

Streever, B. et al

2011 Environmental Change and Potential Impacts: Applied Research Priorities for Alaska's North Slope, *Arctic* 64-3:390-397, Arctic Institute of North America

Tremblay, Martin et al

2008 Climate Change in Northern Quebec: Adaptation Strategies from Community-Based Research, *Arctic* 61, Supplement 1:27–34, Arctic Institute of North America

Tyrell, Martina

2006 More bears, less bears: Inuit and scientific perceptions of polar bear populations on the west coast of Hudson Bay, *Etudes/Inuit/Studies* 30-2:191-208 Laval University, Inuksiutiit Katimajiit Association

Weller, Gunther

- 2005 Climate, Encyclopedia of the Arctic, Routledge
- Willerslev, Rane
 - 2012 "The New as always the Same" A Critical Perspective on Yukaghir Hunting Adaptations to Climate Change. Bulletin of the Hokkaido Museum of Northern Peoples 21: 1-18, Hokkaido Museum of Northern Peoples (北海道 立北方民族博物館)

「在来知」とは

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