Chapter 16
Franz Boas and Inuktitut Terminology for Ice and Snow: From the Emergence of the Field to the "Great Eskimo Vocabulary Hoax"

Igor Krupnik and Ludger Müller-Wille

Abstract Franz Boas, the "founding father" of North American anthropology, has long been credited with many pioneer contributions to the field of Arctic anthropology, as a result of his first and only fieldwork among the Inuit on Baffin Island, following the First International Polar Year 1882–1883. In this new "polar year" the SIKU project has initiated several studies of the Inuit terminology for sea ice and snow, including in the areas of Baffin Island once surveyed by Boas, as well as in the nearby regions of Nunavut, Nunavik, Labrador, and Greenland. Also, in the past decade the story of Boas' fieldwork on Baffin Island has become known in full, in diaries, personal letters, and field notes. This chapter capitalizes on these new sources: it examines Boas' knowledge of the Inuit terminology for sea ice and snow and its value to current discussion about language, indigenous knowledge, the Inuit, and beyond. It also addresses the so-called Great Eskimo Vocabulary Hoax debate of the past decades that misconstrues Boas' use of the Inuit terms and the analysis of the contemporary Inuit ice and snow vocabulary.

Keywords Franz Boas · Inuktitut · Baffin Island · Ice and snow terminology

Ever since the special issue of the journal *Études/Inuit/Studies* dedicated to the centennial of Franz Boas' work on Baffin Island (1883–1884) was published 25 years ago (Freeman 1984), Arctic anthropologists have claimed Boas as the "founding father" of their discipline. Not only was Boas praised for his pioneer contribution to the wide range of topics (Cole and Müller-Wille 1984:51–53), his name was also firmly linked to the first International Polar Year (IPY) 1882–1883, of which he was rather a post factum beneficiary than a scientific contributor.[1] A hundred-and-twenty-five years later, Boas' link to the first IPY served as a source of inspiration and a justification for social scientists to argue for their role in the Fourth International Polar Year 2007–2008 (Krupnik 2003; Krupnik et al. 2005).

I. Krupnik (✉)
Department of Anthropology, National Museum of Natural History, Smithsonian Institution, Washington, DC 20013-7012, USA
e-mail: krupniki@si.edu

I. Krupnik et al. (eds.), *SIKU: Knowing Our Ice*,
DOI 10.1007/978-90-481-8587-0_16,

In this current IPY, several projects follow in Boas' footsteps by exploring polar peoples' knowledge and use of the sea ice and/or snow habitats.[2] SIKU project, in particular, has initiated several studies of the Inuit terminology for sea ice and snow, including in the areas of Baffin Island once surveyed by Boas (Laidler et al. 2008), as well as in the nearby regions of Nunavut, Nunavik, Labrador, Greenland, and elsewhere across the Arctic (see Chapter 1, Introduction; Chapter 17 by Johns this volume; Chapter 14 by Krupnik and Weyapuk this volume). In addition, voluminous new details related to Boas' fieldwork on Baffin Island in 1883–1884 have become available over the past 10 years (Harper 2008; Müller-Wille 1998, 2008, 2009; Müller-Wille and Weber Müller-Wille 2006; Müller-Wille and Gieseking 2008). This chapter capitalizes on these new sources; it also examines for the first time Boas' knowledge of the Inuit terminology for sea ice and snow and its value to today's discussion about language, indigenous knowledge, the Inuit, and related issues.

In late 2008, one of us (I.K.), while working with Friedrich Erdmann's early Eskimo–German and German–Eskimo dictionaries from Labrador (Erdmann 1864–1866), tried to match Erdmann's Labrador Inuit terms for sea ice with the Inuktitut words listed in various Boas' publications, diaries, and short papers (i.e., Boas 1888, 1894, 1911; Müller-Wille 1998:273–276). Of those, Boas' Inuit "dictionary" (lexicon) from Cumberland Sound, Baffin Island (Boas 1894), offered by far the largest corpus consisting of more than 2,000 Inuit words, and personal and place names recorded during his work with the local Inuit during 1883–1884. From these sources, the initial sample of about 20 terms for types of sea ice and associated phenomena was compiled and translated from the German original. Then the second co-author (L.M-W) joined the study leading to a new SIKU research focused on the early historical lists of Inuit ice and snow terms. Boas' list of the Baffin Island Inuktitut terms emerged as a valuable source to compare to both historical and modern Inuit ice lexicons from the adjacent regions of Canada and Greenland. This chapter assesses Boas' material from 1883 to 1884/1894, his relations with the Inuit, and his grasp of their language and of their snow and sea ice terminology, specifically. We also address the so-called Great Eskimo Vocabulary Hoax debate of the past decades (that misconstrued Boas' use of the four Inuit terms for snow from his Baffin Island fieldwork) and approach it from the analysis of the contemporary Inuit ice and snow vocabularies collected during the SIKU project. We argue that the latter "debate" is completely misdirected and that the Inuit (Eskimo) have many more terms associated with the sea ice than with snow.

Franz Boas and Inuit Languages

It is one of the many legacies of Franz Boas that despite having collected and published extensive materials on Inuit anthropology, ethnography, and geography, his degree of linguistic competence and fluency in Inuktitut, the language spoken by the Inuit he worked with on southern Baffin Island, has been questioned (Harper 2008). Learning more about his linguistic competence would help evaluate the validity of the materials he documented and interpreted. In order to understand Boas' level

of immersion into Inuktitut, the record of his linguistic engagement can be traced in archival documents, such as in the Boas Papers in the American Philosophical Society (APS), in Philadelphia, U.S. and the Hinrich Rink Papers in The Royal Library, Copenhagen, Denmark, as well as in his publications (Boas 1885, 1888, 1894, 1911).

Although his original research interests were in natural sciences, in particular in physical geography and cartography, Boas understood fully the necessity of learning the languages of the people he intended to study and to live with during his full-year sojourn in the Canadian Arctic, i.e., Inuktitut (in German *Eskimoisch* at that time) with the Inuit and English with the American and Scottish whalers. He had a solid, but passive grounding in classical Greek and Latin, as well as in French. Due to family connections in New York and private tutoring, Boas obtained functional knowledge of English early on; it was still limited but improving while he was on Baffin Island. Boas also mentioned that he started to learn Russian during his first term at university, but that did not seem go far.

More important, in 1881–1883, while preparing for his research in the Arctic, he began to learn Danish and Inuktitut. He knew very well through his literary studies that practically all materials concerning Inuit languages, such as grammars and lexicons, were published in these languages, mainly on Greenland, except for works that were written in German and collated by Moravian missionaries who had been stationed in Greenland and Labrador. Based on Boas' comments in his letters and diaries, he made some limited progress in learning Inuktitut. In a letter to his parents in November 1882 sent while he was in Berlin, he stated proudly: "In English, Danish and Eskimo I am rather diligent."

Although Boas referred to only a few sources directly, it can be safely assumed that he had access to the literature in this area in German libraries, mainly at the University of Göttingen. In the summer of 1881 he went on a trip to Copenhagen with the purpose of visiting the National Museum and university library to learn about Inuit culture and language. He left no record of what he actually achieved.

There were three authors whose works Boas most likely consulted and studied for the purpose of becoming familiar with the Inuit and, in particular, their language. Friedrich Erdmann (1810–1873), a Moravian missionary who worked in Labrador, compiled extensive "Eskimo–German"[3] (1864) and "German–Eskimo" (1866) dictionaries, which was later translated into English and revised by Edmund James Peck (1850–1924) in (1925). Samuel Kleinschmidt (1814–1886), also a Moravian missionary who was born and stayed all his life in Greenland, published an exhaustive and seminal grammar (1851) and a Greenlandic–Danish dictionary (1871) expanding on two earlier dictionaries published in the late 1700s. Kleinschmidt's two books put Greenlandic on a solid footing as a written language. Lastly, Hinrich Johannes Rink (1819–1893), geologist, geographer, ethnologist, linguist, and administrator in Greenland, wrote in detail about the Inuit and Greenland in Danish and English (1866, 1871, 1875 and, after Boas' research, 1887). Boas was to establish direct contact with Rink in 1885, sending him Inuit texts and word lists for his review and corrections (Rink 1887:39), visiting him in Copenhagen, and maintaining correspondence with him until Rink's death in 1893.

During his 1883–1884 stay on Baffin Island, Boas expanded his efforts to learn Inuktitut by associating with James S. Mutch, the Scottish manager of the Kekerten whaling station at Kingua Fjord, Cumberland Sound. Mutch was fluent in Inuktitut and functioned as a translator and facilitator between the Inuit and Boas for a long time thereafter (Harper 2008). From the start, Boas kept word lists in alphabetical order, systematically mapped and collected place names, and recorded stories and legends in Inuktitut. Some of this original linguistic material is in the archives of the Royal Library (Rink Papers) in Copenhagen and the APS (Boas Papers), but it has not been studied extensively.

In his own estimation, Boas did not feel that he had acquired satisfactory expertise in Inuktitut and sought all the help he could get from knowledgeable people. Here Hinrich Rink became the person who helped him the most in his effort to overcome his linguistic shortcomings offering friendly advice with regard to translation, interpretation, and orthography. Recognizing his limitations, Boas wrote to Rink in April 1885:

> You overestimate my knowledge of the Eskimo language, because my understanding of the songs is immensely deficient, some of them I almost do not understand at all; those which I master according to their content, I know due to the thorough narrations by the natives.... Some unintelligible words might have originated from the erroneous recognition of the sounds on my part, which happens easily when knowledge of a language is incomplete.... Indeed, I feel that I am in no way up to this task.[4]

Franz Boas' Publications of Original Inuit Linguistic Material

Today, the name of Franz Boas is strongly associated with the emergence and development of the linguistic study of aboriginal languages in North America. Therefore, in retrospect, it is curious that he, despite some major personal efforts, published few of the original Inuit texts or even word lists. The publications were restricted to listing of place names, personal names, or vocabularies/lexicons (Boas 1885, 1888, 1894) with translation into German, but without any assessment or interpretation. The materials Boas included in "The Central Eskimo" (1888), particularly on religion, traditions, and arts, are solely presented in English except for a glossary of Inuit terms with derivations (1888:659–666). Still neither yet edited nor published, the Rink Papers in Copenhagen contain Inuit texts of tales (myths) recorded and transcribed by Boas in his own handwriting, which he sent to Rink for examination in 1885.

Clearly, Boas was reluctant to publish the original Inuit texts. However, he included a detailed list of Inuit place names (toponyms) he had collected in his cartographic survey and from published maps (1885), which remains a lasting and important source and heritage of Inuit geographical knowledge to this day. Then in 1894, 10 years after his return from Baffin Island, he published a list of Inuit words, with some conjugations and derivations, place names, and personal names (ca. 2,200 entries), with German translation. This list most likely comprised all that he had collected during his stay with the Inuit on Baffin Island. He cross-checked his list with the sources from Greenland and Labrador mentioned earlier and

demonstrated a closer linguistic relationship between Labrador and Baffin Island Inuktitut than with Greenland.

In order to understand Boas' reason for publishing this list in 1894, it is useful to refer to his short introduction in which he provided some explanation regarding the "dialect" of the Inuit on southern Baffin Island. Boas' linguistic recording was the first ever that was carried out to such a broad extent in that particular region of the Inuit homeland. In that way the word list is of special historic interest both linguistically and culturally, particularly with respect to human–environmental relations and interactions as experienced by the Inuit during the 1880s. Although Boas stated explicitly his intention to go deeper into a linguistic discussion of the Inuit languages at a later stage, this intention never materialized. His mentor in Inuit languages, Hinrich Rink, who had seen the original list had died in 1893, just before it was published.

As Boas wrote in his introduction (1894:97, English translation by Ludger Müller-Wille):

> The following material was collected during a journey to Baffin Land during the years of 1883 and 1884. The dialect, to which this material refers, is spoken in Cumberland Sound and in the parts of the west coast of Baffin Bay lying somewhat farther north. The dialect is closer related to the one in Labrador than to the one in Greenland, which should not surprise us since the customs and traditions of these tribes are also more similar to the ones of Labrador than of Greenland.
>
> I have hesitated long with the publication of the material collected by me because it is in many respects deficient and imperfect. These are the results of an initial journey and the collector's insufficient experience shows the material's lacunae and imperfection. During my whole journey I was not fully aware of the importance of linguistic studies since I believed, that the studies by missionaries in Greenland and Labrador provided a sufficient image of the Eskimo language, and therefore concentrated on geographic and ethnological problems. Only after my return it became apparent, when I tried to get the obtained texts translated, what the ancient texts, the peculiar secret language of the angakut [shamans] and the dialectical variations offered for an interesting study.
>
> After careful consideration it seems to me that the collected material still offers enough new insight to justify its publication.
>
> The present article includes collected vocabulary that is compared with the lexicon from Labrador and Greenland. A subsequent article is to contain the texts, phonetics, grammar and a discussion of the vocabulary.
>
> I have used the orthography developed by missionaries in Greenland, however, the long vowels are presented only by their lengths. The accents within the words are provided often. The velar k is expressed by q and the German ch like in Bach is rendered by χ. All other letters are pronounced like in German.

List of Words and Place Names: Ice, Snow, and Related Phenomena

The following list of the Inuktitut words and names related to ice and snow presented in alphabetical order has been taken directly from Boas' publications along with his original German translation (1885:90–95; 1894). The English translation from German marked by slashes is by Müller-Wille partially based on a preliminary translation by Krupnik in 2008. Words beginning with a capital letter are place

names. The abbreviations for the provenance of words used by Boas (1894) are as follows: G. – Greenland (based on Kleinschmidt 1851, 1871; Rink 1866, 1871, 1875, 1887), L. – Labrador (based on Erdmann 1864, 1866). In the few cases where Boas uses the Greek letter χ it is replaced here with the standard q.

Boas must have collected as much as he could possibly obtain and grasp. The resulting collection was clearly influenced by his own experience of living and traveling extensively with the Inuit for a period of 12 months, which were most of the time defined by ice and water. Furthermore, it should be noted that the list includes several hundred toponyms and personal names that are normally not part of a lexicon.

Ice

a'jorang Spalt im Eise (Sprungspalt, nicht die Spalten am Ebbestrande)/crack in the ice (extensive crack, not the cracks in the low tidal flats)/L. *ajorak.*

A'jorang die Spalte/the crack/

Aqti'nirn wo das Eis vor der Flussmündung schmilzt/where the ice melts in front of the mouth of a river/

Angmaritung das Offene, nicht Ueberfrorene/the open one, not frozen over/L. *angmarok.*

Angmartung das Offene (nicht überfrorene)/the open one (not frozen over)/

igjijug dick, dickes Eis/thick, thick ice/L. *ivjo'vok*, G. *ivssuvoq*.

imakti'nirn Eis auf schmelzendem Schnee, stark genug Schlitten zu tragen/ice over melting snow, strong enough to carry a sled/

ivu'dnirn Grundeis am Strande/ground ice on the beach/,L. *ivuvok* – Eis treibt am Strande übereinander/ice piling upon the beach/

kaqvaq Packeis /pack ice/L. *kackvak*.

manituā'dlu hügeliges Land, rauhes Eis/hillocky land, rough ice/

mase'lirang dünnes Eis, das sich im Frühjahre auf dem Schnee bildet, nasses Moos/thin ice that is formed on the snow in spring, wet moss/L. *masalerak.*

miso'majung in's Meer reichender Gletscher/glacier reaching into the sea/G. *misugpa* – er taucht es sein/he dips it into [something]/

nilang Süsswassereis/freshwater ice/L. *nillak*, G. *nilak*.

penartua'dlu Wasser steht auf dem Eis/water on ice/

piqalu'jang Eisberg/iceberg/L. *Pekkalujak.*

Piqaluirtung reich an Eisbergen/abundant with icebergs/

qaqbang mehrjähriges Eis, Packeis (siehe *kaqvaq*)/multi-year ice, pack ice (see *kaqvaq*).

qati'dinrn das Eis am Strande im Herbste, das bei Fluth schwimmt, bei Ebbe strandet/the ice on the beach in the fall that floats at high tide and is stranded at low tide/L. *kattinek.*

qavirpi'jung Grundeis/ground ice/G. *qaungoq.*

qu'gnirn Spalte im Grundeis/crack in the ground ice/L. *Kongnek.*

quta'rong Eisfuss an einer Steilküste/ice foot at a steep coast/

sī'ko Eis/ice/L., G. same.

Sikosuilaq das Eislose/[location is] free of ice/

sikoqa'ngenut über das Eis/across the ice/

siko'qoang 1-1 1/2 Fuss dickes Eis im Herbste/1 to 1 ½ ft of thick ice in the fall/

sī'koaq dünnes Eis beim ersten Gefrieren/thin ice formed by the first frost/

siku'kulu kleine Stücke Treibeis/small pieces of drift ice/

sikū'liaq dünnes Eis an der Eiskante im Winter/thin ice at the ice edge during the winter/

Sikosū'ilaq das Eislose/[place] without ice/

sinā' seine Kante, Eiskante/his edge, ice edge/

Sirmilling mit einem Gletscher versehen/place where there is a glacier/

si'rming dünnes Eis, Firn, Gletscher/thin ice, firn, glacier/L. *sermek*, G. *sermeq*.

tu'vang dickes Wintereis/thick winter ice/L. *tuvak*.

tuvarea'qtung dickes Eis im Spätherbste /thick ice at the end of the fall season/

Snow

aqilokoq weich gefallener Schnee/softly fallen snow/(G. *aqipoq* – es ist weich/it is soft/), L. *akkiilokàk*.

apun liegender Schnee/snow on the ground/L. *aput*, G. *aput; aput* (Boas 1911:25).

Auqardnelling mit im Frühling schmelzenden Stellen/with spots that thaw in the spring/

ikijuq, ikivū' Wind höhlt Schnee aus /wind hollows out snow/

mauja weicher Schnee/soft snow/L. *maujak* (derives from G. *mauvoq* – er sinkt mit den Füßen ein/he sinks in with his feet/).

Maujatung Reich an weichem Schnee/abundant with soft snow/

piegnartoq der Schnee ist gut zum Schlittentreiben/the snow is good for driving sled/L. *piarngnartoq*.

pi'rtsirpoq der Schnee treibt/drifting snow/L. *perkserpok*, G. *Persoq; piqsirpoq* (Boas 1911:26).

qaneq fallender Schnee/falling snow/L. *kannek*, G. *qanik*. *qa'nerpok* – es schneit /it is snowing/, *qana* (Boas 1911:26).

Qimi'sung Schneewehe (?)/snowdrift (?)/, Hundsfell (?)/dogskin(?)/(see *qimu'qdjung*).

Qimissung die Schneewehe/the snowdrift/

qimu'qdjung Schneewehe/snowdrift/L. *kimuksuk*; *qimuqsuq* (Boas 1911:26).

savujua'rtuang Schneeblock/snow block/(from *savik* – Messer/knife/).

siorpā'lirpoq Athem gefriert zu Eis/breath freezes to ice/

Related Phenomena

agdlu Seehundsloch/seal's breathing hole through the ice/L. *aglo*, G. *agdlo*.

Audnerbing Wo man nach Seehunden kriecht/where one crawls for seals [on the ice]/

aunerpoq er kriecht auf dem Eis nach Seehunden/he crawls over ice for seals/L. *Aungniarpok*.

igdlu Schneehaus/snow house/L. *igloo*, G. *igdlo*.

Igdluviaujang das einem Schneehaus Ähnliche/the one similar to a snow house/

Sarbartijung reich an Stromschnellen/abundant in currents/[referring to open places in sea ice, i.e., polynya], from *sarbaq* – starke Strömung im Meer/strong sea current/

taglun Schneeschuhe/snowshoes/L. *taglut.*

tilu'qtun Schneeklopfer/snow beater/L. *tilluktũt*, G. *tilugtût.*

ukiuq Winter/winter/L. *okkiuk*, G. *ukioq.*

ū'toq Seehund auf dem Eise bei seinem Loche liegend/seal on the ice basking at its [breathing] hole/L. *otok,* G. *utoq*.

The terminology on ice, snow, and related phenomena that Boas recorded in the 1880s showed that the Inuit knowledge of their physical environment was detailed, precise, and intricate. Boas understood the importance of this socioecological setting. Therefore, his linguistic record is a testimony of these complex

human–environmental interactions at a particular period in Inuit history. Furthermore, by looking at terms from Labrador and Greenland, Boas detected variations and similarities to demonstrate connections among various Inuit groups.

Of particular interest are the toponyms that included references to ice and snow, and which are in their content consistent from region to region in the Arctic (cf. Müller-Wille 1985; Müller-Wille and Weber 1983). From the material available it cannot be determined if Boas put a particular emphasis on collecting ice and snow terminology; however, this specific vocabulary was an important part of the general Inuit lexicon and could not be overlooked. As historic material, this word list, which in Boas' eyes was a humble effort, is an important record for the development of Inuit linguistics and for our contemporary understanding of the Inuit (and other Arctic people's) knowledge of ice, snow, and related phenomena.

Boas' Contribution to Inuit Terminology of Ice and Snow: Present-Day Perspective

Boas' interest in the Inuit terminology for sea ice and snow was by no means accidental if one recalls his background in physics and geography and the topic of his doctoral dissertation, "Contributions to Understanding the Color of Water" (1881). While going over various Inuit dictionaries in preparation for his Baffin Island trip, Boas certainly became aware that the Inuit had many more terms for ice and snow than were available in his native German (or other European languages). Erdmann's German Labrador Eskimo dictionary with its 17 terms for various types of "ice" (*Eis*), plus a dozen more terms for ice-associated phenomena, and 8 terms for snow (Erdmann 1866:65, 163) could have been an obvious source of inspiration. Other prospective source, besides several Danish dictionaries of the West Greenlandic/Kalaallisut (see earlier), might have been Émile Petitot's (1876) French–Eskimo dictionary from the Mackenzie Delta, with its 12 terms for ice and 13 terms for snow. It comes as no surprise that Boas, a meticulous fieldworker, produced an Inuktitut lexicon from Cumberland Sound that included more than 30 terms for ice and related phenomena and more than a dozen terms for snow.

Boas' Inuktitut terms for ice and snow can be assessed following the same procedures we applied to contemporary sea ice and snow vocabularies collected for the SIKU project (see Chapter 14 by Krupnik and Weyapuk this volume). First, ice terms should be studied separately from the snow terms, since they use different stems and refer to different phenomena. Second, the analysis is more productive when the terms are organized and compared within certain typological groups, such as "young ice," "shore-fast ice, "pressure ridges," and "layered ice". Third, cultural and human-/animal-associated terms should be treated separately, since they are often built as "derivatives," due to the patterns of word formation in the Eskimo/Inuit languages.

During his Baffin Island trip, Boas had ample opportunity to hear many Inuktitut words for ice and snow, thanks to his prolonged dog sled and boat trips with Inuit

Table 16.1 Terms for young ice and freeze-up formations in some historical and contemporary Inuit/Inuktitut/Inupiaq Ice vocabularies

Cumberland Sound: (Boas 1894)	Pangnirtung: (Laidler 2007)	Labrador: (Erdmann 1864, also Peck 1925)	Igloolik: (Aporta 2003)	Nunavik: (McDonald et al. 1997)	West Greenland (Taverniers 2009)	Barrow (Brower 2008)
	atuqsaruqtuq when the ice is thick enough to walk on			*agutitaat* thin layers of new ice		*arguqtaġniq* newly formed thin ice collecting on the downwind side of a polynya or lead
	iluvaliajuq the first film of ice that starts forming		*illuvaliajuq* the sides of the river when it starts to freeze	*akgutitak, akgutinik* slushy mixture of ice and snow frozen into flexible ice		*atiġniġaq* new ice forming a smooth apron around pre-existing ice
	nutaaminiq newly formed ice in the fall, about a week old			*minguirniq* slush ice	*nutarneq* recently formed sea ice.	*iġnigluq* thin young ice broken up or crushed and refrozen as found in cracks
	qainngu ice ledge formed by water overflowing and refreezing	*qaingok* the ice on the banks, shores	*qainnguq* when the shorelines start to freeze	*milutsinik* snow-soaked water that freezes at the floe edge		*imuniq* crushed young ice caused by moving ice
qati'dinrn ice on the beach in the fall that floats at high tide and is stranded at low tide	*qillirusijuq* an early stage of ice formation, when ice begins forming along the edge of the shoreline		*qinnuaq* primary ice formation on the shores when the sea starts to freeze	*qainguniq, qainguq* slush washed ashore that freezes on the beach	*qaannguq* icefoot, a narrow fringe of ice attached to the coast	*kaniqtaq* slightly refrozen ice pieces but fragile; this ice will quickly spread out when it is stepped on
	qinnuaq slushy suspension in the water, the beginning of ice formation	*kinuak/kKinnuak* thin ice when the water begins to freeze	*qinuaq* soft or slushy snow in the water	*qinuq* slush ice formed along shorelines and at the floe edge		*mayuqtitaq* slush ice pushed onto the shore with wraps frozen into waves
	quppirquaq very thin sheet of ice that looks like an oil slick on top of the water	*kinnuarpok* the water becomes ice	*qinulimajuviniit* the ice that is caused by the snowfall when it begins to freeze	*qiqngurusirtuk* new ice formed from slush in narrow water bodies, like inlets	*qinuuvoq* there is slush	*misaṭhak* slushy top of young saltwater ice
		kinnumarllerpok it is making strong ice; it is freezing hard (*lit*. it is making full-grown ice)	*quasalimajuq* crystal-free fall freeze up, so it becomes slippery	*qaiquit* new ice *putatak* new ice, *puttaq*, autumn floating ice, the first ice floating in		*muġaliq; muġaḷṭiq* slush ice on sea *muġrak* slush ice
siko'qoang 1 to 1 ½ ft thick ice in the fall	*sikuallaajuq* big plates of new ice; traditional term for pancake ice	*sermek (E)* new ice on the boat, etc.	*quvviqua* strip of ice on the water, when the sea ice is about to freeze		*sikorlaaq* recently formed sea ice. *sikuarllaaq* dark nilas (a thin elastic crust of ice) few millimeters thick.	*qaivaġniq* flat round cakes of ice frozen together *qinu* slushy ice

Table 16.1 (continued)

Cumberland Sound: (Boas 1894)	Pangnirtung: (Laidler 2007)	Labrador: (Erdmann 1864, also Peck 1925)	Igloolik: (Aporta 2003)	Nunavik: (McDonald et al. 1997)	West Greenland (Taverniers 2009)	Barrow (Brower 2008)
sī'koaq thin ice formed by the first frost	*sikuaq* new, thin brittle sheet of ice; the first continuous layer of ice	*sikkoak* quite thin ice	*sikuaq* new ice forms on the bays; first stage of freeze up	*sikuak* very thin layers of new ice that are formed on a calm day	*sikuaq* dark nilas (a thin elastic crust of ice) 1–5 cm thick.	*sikuaq* thin ice, dangerous to walk on
	sikujuq the water has frozen over; there is no more open water	*sikkoarpok* there is quite thin ice		*sikulirutit* new ice, freshly frozen from part saltwater and part freshwater along shorelines and within inlets.	*sikujartuaarpoq* sea ice forms and becomes thicker (on several days)	*sikullaġruaq* new thick ice approximately 2.5 ft thick and thicker
	sikuluqtuq bad, thin, dangerous ice	*sikkulliak* fresh (new) ice on the shore (or anywhere), young			*sikujumaataarpoq* sea ice delays in forming	
	sikurataaq sea ice that has just recently formed	*sikkovok* it gets ice		*sikutak* new ice that forms from *sikuak,* once inlets are frozen		
	sikutaq first ice to form in bays, inlets, and heads of fjords	*sikkolauvok* it is frozen over	*singniqsaq* similar to *qinu* but much more solid, so that one can travel through	*sikutait* solid ice in small inlets or bays formed before the land-fast ice	*sikunippoq* floating pieces of sea ice arrive (moved by wind or current) when the sea was ice-free	
sikũ'liaq thin ice at the ice edge during the winter	*sikuvaliajuq* early process of the ice formation; first layers of ice starting to form		*sikuliaq* new ice on which it is possible to walk	*sikuliak* newly formed ice with no snow on top; safe to walk or travel on.	*sikuliaq* recently formed sea ice	*sikuliaq* young ice formed around edge of old solid ice on open lead
	sikuvaalluuti the first ice that forms and stays until the following year		*tuqujaktinniq* the area of the newly formed ice that is darker than the rest	*ukiurjait* new ice that forms from *sikuak*;	*sikulaaq* recently formed sea ice	
	sivaujanguaq pancake ice	*siva* fresh ice; (grease ice?, also cod oil)	*uiguaq* new ice formed at the edge of the floe edge	*uiguaq* smooth, solid extension ice		*iiguaq* ice extension
	uiguaq new ice that forms along the lead edge, "an extension"		*uiguaviniq* when the new ice *uiguaq* becomes older			

companions. His travels also exposed him to the richness of the Inuit environmental knowledge, such as the many names for winds, directions, constellations, and other natural phenomena (Boas 1888/1964:235–236). Boas' interest in Inuit place names and personal names, many of which were built by using various base terms for ice and snow, could likewise have offered insight into the Inuit perspectives on ice and snow formation. What is most striking in Boas' list of Inuktitut ice and snow terms from Baffin Island is that it is not very extensive, particularly the snow list.

More than 30 Cumberland Sound Inuktitut ice terms recorded by Boas form a rather skeletal, albeit a solid, vocabulary particularly when arranged by major typological groupings (Appendix). Boas did document many basic terms, but several key words are missing. Overall, the remarkable richness of the Inuit ice terminology is barely visible in his material. Boas' list is particularly thin in the "young ice," "ice floes/drifting ice," and "spring melting, breakup" categories, when compared with Erdmann's dictionary of 1864 and several modern ice vocabularies collected for the SIKU project (Table 16.1). Boas' list lacks many ice terms that are familiar to today's residents of the Cumberland Sound area (see Laidler 2007; Laidler et al. 2008). The small number of derivative terms and words for human activities associated with the sea ice in Boas' lexicons from 1885 and 1894 is also noteworthy. In many contemporary lists collected for the SIKU project such terms contribute up to 25–30% of the total.

The limited nature of Inuktitut ice terminology collected by Boas supports our assessment that he did not achieve sufficient fluency in Inuktitut during his fieldwork and that he was recording the terms in a context of his traveling and learning rather than via a systemic survey. Also, he might have lacked good interpreter(s) to reach out to knowledgeable local collaborators or elderly experts, in the way the collection of indigenous terminologies is usually done today.

The same is also true with regard to Boas' much shorter list (13 entries) of the Cumberland Sound Inuktitut snow and snow-associated terms. Several contemporary Inuit/Eskimo snow lexicons (see Table 16.2) range from 20 to 35 terms, i.e., West Alaskan Yup'ik (Woodbury 1991, based upon Jacobson 1984), Barrow Inupiaq (Brower 2008), Inuvialuit/Siglutun (Lowe 1984), Copper Inuit (Lowe 1983); Nunavik Inuktituk (Dorais 1996: 145), Thule Inuit (Fortescue 1991), West Greenlandic (Fortescue 1984). More extensive lists feature up to 60–80 terms, like Siberian Yupik (Vakhtin and Emelyanova 1988:24–27), St. Lawrence Island Yupik (Walunga 1988; Womkon Badten et al. 1987), Barrow Inupiaq (Sturm 2009a, b), historical Labrador Inuttut (Erdmann 1864/Peck 1925). The largest known list, compiled from the Nunavik Inuktitut dictionary (Schneider 1985), has more than 100 terms, including numerous derivative forms.

When those contemporary lists are organized in major typological groups, like "types of snow on the ground" (Table 16.2), "falling and drifting snow," "snow forms," "snow-associated phenomena," "human activities associated with snow," it becomes obvious that Boas missed several critical terms, particularly related to the snowstorm and snowfall patterns (3 words versus 18 words in Erdmann/Peck's Labrador dictionary), terms to describe forms built on the snow surface by wind blowing and accumulation (3 terms only), melting and freezing, and the like. Many

Table 16.2 Number of terms for major types of snow and associated phenomena in historical and contemporary Eskimo/Inuit vocabularies

	Snow on the ground	Falling snow, snowfall	Snow on ice and water	Snow forms	Others[a] (including derivatives)	Total
Inuktitut, Cumberland Sound, 1883 (Boas 1894)	3	3	–	3	2	11
Inuttut, Labrador 1850s (Erdmann 1864/Peck 1925)	12	18	–	3	23	56
Siglitun, Mackenzie Delta, 1860s (Petitot 1876)	10	3	–	–	1	14
Kalaallisut, West Greenland, 1970s (Fortescue 1984)	6	11	3	2	9	31
Yupik, St. Lawrence Island, 1980s (Walunga 1988)	15	3	13	4	21	56
Central Alaska Yup'ik (Jacobson 1984/Woodbury 1991)	7	3	7	3	6	26
Siberian Yupik, 1970s (Vakhtin and Emelyanova 1989)	12	24	–	8	15	59
Inuktitut, Nunavik, 1970s (Schneider 1985)	26	23	–	4	53	106
Inupiaq, Barrow, 1990s (Brower 2008)	16	3	5	5	7	36
Inupiaq, Barrow, 2000s (Sturm 2009b)	17	8	1(?)	15	18	59+

[a]Including terms for hail, frost, rime, snow crystals; human activities associated with snow.

terms that are familiar to today's residents of the Cumberland Sound area are not in Boas' list, like *apputtattuq*, snow that accumulates on the newly formed ice and causes its thinning; *kiviniq*, wet snow sinking into the sea ice; *qissuqaqtuq*, snow that has frozen/hardened at night and is good for travel (Laidler et al. 2008). The most logical explanation, again, is that Boas did not have adequate access to local experts who could have helped expand his snow list.

It is no wonder that Boas was humbled by the quality of his Cumberland Sound Inuktitut lexicon. He was in no rush to publish it, and he did so only 10 years after his initial fieldwork. Evidently, only the death of Hinrich Rink in 1893 and/or a temporary break in correspondence with James Mutch (1847–1931), Boas' only solid contact in Baffin Island (Harper 2008), finally convinced Boas that his material could not be improved any further. The appearance of the Cumberland Sound lexicon in the Vienna-based *Mittheilungen der Anthropologischen Gesellschaft* (*Proceedings of the Anthropological Society*), with an abridged introduction and no analysis, was Boas' acknowledgment that it was the most he could produce from that field trip.

Boas clearly learned his lesson. Soon after, he developed a long-term collaboration with two outstanding language and knowledge experts from the Northwest Coast area, George Hunt (1854–1933) and James Teit (1864–1922). Long-term

partnerships with Hunt, Teit, and other local collaborators (Henry Tate, Louis Shortridge, James Mutch) became the basis of Boas' work in the documentation of indigenous cultures, texts, languages, and spiritual systems in the later stages of his professional career (Berman 2001; Rohner 1969).

The Cumberland Sound Inuktitut lexicon of 1894 also testifies to Boas' prudence as a researcher. Though he inserted, whenever possible, parallels with other Inuit dialects (Labrador Inuttut, West Greenlandic), he made no effort to expand his record by adding forms from other sources. Surprisingly, his fieldwork "prudence" was challenged some 90 years, after the publication of his Inuktitut lexicon from Cumberland Sound.

"The Great Eskimo Vocabulary Hoax": A Rejoinder from the SIKU Project

In 1986, Laura Martin, linguistic anthropologist and specialist in Mayan languages, produced a short essay titled "Eskimo Words for Snow" (Martin 1986). Martin traced the origins of what she called "the Genesis and Decay of an anthropological example," that is, of the popular belief that the Eskimo have "dozens, if not hundreds words for snow" to Franz Boas. According to Martin (1986:418), Boas' quite casual and not very solid reference to *four* lexically unrelated words for snow in the Eskimo (language) (Boas 1911:25–26) was later picked up by Benjamin Whorf (1940) and was subsequently exploited in dozens of textbooks and popular writings. Through this repeated and often thoughtless recycling, Boas' original four terms eventually "snow-balled" into up to "two hundred" terms for snow that reportedly were known by the Eskimo.

Martin's arguments were soon amplified by linguist Geoffrey Pullum, who used a catchy title, "The Great Eskimo Vocabulary Hoax" for his rejoinder to Martin's critics (e.g., Murray 1987). Pullum recycled that title in several subsequent reprints and online postings, including his book of linguistic essays on other unrelated topics (Pullum 1989,1990,1991a, 1991b, 1994,1996, 2003). Pullum's publications stirred a passionate debate, primarily among linguists and popular writers, that continues to this day.[5] Meantime, cohorts of students who have taken classes in *Introductory Linguistics* since 1991 have been trained to believe that Pullum and Martin had put to rest the myth originating from Boas (and Whorf) that the Eskimos had "many hundred terms for snow."[6] Even more, Pullum and his followers argue that the Eskimo snow vocabulary has roughly the same number of words as English. In fact, most of the contributors to the "Great Eskimo Vocabulary Hoax" debate hardly ever ventured into an Eskimo dictionary and none cited Boas' Baffin Island lexicon of 1894, though a few Eskimo linguists took part in the discussion (i.e., Woodbury 1991; de Reuse 1994; Kaplan 2003, 2005).

Our analysis of the Inuit words for ice and snow recorded by Boas may clarify some misunderstandings common to the "Great Eskimo Vocabulary Hoax" debate. First, Boas certainly knew *more* than the four Eskimo terms for snow that he cited as an example of the "differences in how the groups of ideas are expressed by specific phonetic groups in different languages" (Boas 1911:25). We do not know why he

selected these particular words (*aput*, *qana*, *piqsirpoq*, and *qimuqsuq*).[7] He could have easily picked several more words for snow from his Baffin Island lexicon, like *axilokoq/aqilokoq* – "softly falling snow," *mauja* – "soft snow on the ground," *pieg-nartoq* – "the snow (which is) good for driving sled," or from Erdmann's Labrador dictionary that had more terms, such as *pukak* – "crystaline snow," *sakketok* – "fresh fallen snow," *machakit* (*masak/masayak*) – "wet, mushy snow." Hence, Martin's (1986:418) criticism that "Boas makes little distinction among "roots," "words," and "independent terms" is a gross misinterpretation, as Boas was very careful not to use any derivative snow terms to illustrate his point.

Second, all Eskimo/Inuit languages have many more words for snow and snow-related phenomena than the four terms cited by Boas. Although none of the known Eskimo snow lists expands into "many hundreds," local snow lexicons commonly feature several dozen terms for types of snow and snow-related phenomena, including specific patterns of snowfall and/or snowmelt, forms created by wind and other agents over the snow surface. For example, there are eight to 12 independent words for various types of snow on the ground (see Table 16.3).[8] True, the majority of the Eskimo/Inuit snow terms are built by adding suffixes to a certain number of basic stems. Nonetheless, each represents a meaningful and clearly distinguishable phenomenon to indigenous speakers, very much like the terms "new snow" and "old snow" or "small" and "medium ice floe" have special meaning to meteorologists and ice/snow specialists in the scientific nomenclatures (Anonymous n.d.; Armstrong 1958; WMO 1970). This relevance to the language speakers has been completely lost in the "Great Eskimo Vocabulary Hoax" debate, whose participants had little experience with the Eskimo/Inuit knowledge of snow (or ice).

Third, all Eskimo languages possess many more words for various types of sea ice and associated phenomena than for snow, as first argued by de Reuse (1994) and Michael Krauss (several personal communications during the 1990s) and amply illustrated by the SIKU project materials. Most of the 20-some indigenous sea ice vocabularies collected for the SIKU project feature 60–80 (some of them up to 110–120) terms, including dozens of terms for various types of ice and ice-associated phenomena (see Chapter 18 by Tersis and Taverniers this volume; Chapter 14 by Krupnik and Weyapuk this volume; Chapter 17 by Johns this volume; Laidler 2007). Boas was certainly well aware of that richness and he, perhaps, would have put himself on a more solid footing had he picked the Inuit terms for ice, rather than for snow, as an illustration. His own lexicon from Cumberland Sound features numerous independent terms, like *Siku* (ice), *igjijiuq* (thick ice), *kakvaq* (pack ice), *piqalu'jang* (floating iceberg), *tu'vang* (thick winter ice, shore-fast ice), *nillang* (freshwater ice), *si'rming* (glacier ice), *ivu'dnirn* (ground ice on the beach), and many more that are common across the Inuit/Inupiaq language area.

Lastly, contrary to Pullum's much-reiterated claim based on the comment by Woodbury (1991), the English vocabulary for snow and related phenomena is clearly inferior to those recorded in several Eskimo/Inuit languages and dialects. The terms for snow and associated features are almost universally produced in English by using the stem "snow" plus additional stem or a separate word with another meaning, i.e., "snowstorm," "snowdrift," "snowflake," "snowball," "snow-bank," "snowcap," and "snowfall".[9] The examples Pullum cited (following Woodbury) to illustrate many

Table 16.3 Boas' Inuktitut terms for snow on the ground compared to historical and modern Inuit vocabularies

Baffin Island (Boas 1894)	Labrador (Erdmann 1864)	Nunavik (Schneider 1985)	West Greenland (Fortescue 1984)	Barrow (Sturm 2009b)	Inuvik (Lowe 1984/2003)
		aniu snow for making water		*aniu* snow, soft snow *aniuvak* hard packed snow in a gully	*aniu* packed snow to make water
		apijaq snow covered by bad weather	*apirlaat* new-fallen snow	*apivaaluqqaaq* first snow of the year	*apilaraun* first snow layer in fall
apun snow on the ground	*aput* snow (generally)	*aput, aputi* snow on the ground	*aput* snow (on ground) *aput masannartuq* slush/wet snow on ground	*apun* snow cover	*apun* snow lying on a surface
aqilokoq softly fallen snow	*akkilokak* soft snow, not hard	*aqilluqaaq* mixed snow and water that is thawing *atsaakatsaaq* snow good for making a giant snowball *isiriartaq* snow that falls yellow or reddened *katakartanaq* snow with a hard crust that gives way under footsteps *kavisirlaq* snow rendered rough by rain and freezing *kinirtaq* anything, including dump snow that is compact because soaked *mannguq* melting snow *mannguumaaq* snow softened by warm weather *masak* snow soaked in water, wet snow falling from the sky		*auktaaq* melting snow *imaktinniq* very wet snow, slush *isrriqutit* diamond dust or ice crystals in the air	*aqiluraq* light soft snow
			mangiqqak hard snow (also *manngikaajaaq*)	*masayyak* damp snow	*maqayak* watery mud or snow

Table 16.3 (continued)

Baffin Island (Boas 1894)	Labrador (Erdmann 1864)	Nunavik (Schneider 1985)	West Greenland (Fortescue 1984)	Barrow (Sturm 2009b)	Inuvik (Lowe 1984/2003)
	machakit wet snow (also porcelain, china, earthenware)	*matsaaq* snow soaked in water, half melted on the ground			*masak* mushy, waterlogged snow
	mangokpok the snow is soft, watery	*matsaaruti* wet snow prepared for pouring on a sled runner so as to ice them thickly			
mauja soft snow	*mauja* soft deep snow	*maujaq* any ground that gives under one' steps: mud, marsh, soft snow		*nutabaq* fresh powder snow	*mauya* deep soft snow
	maujak soft snow		*nittaalaaqqat* hard grains of snow (pl.)	*nutaaq* soft new snow	*misak* wet snow
		pukaangajuq snow that is sufficiently crystallized, good enough to make a snow house		*nuturuk* good snow for making snow house; firm, yet not too hard	
piegnartoq snow is good for driving sled					
	pukak snow looking like salt, not cleaving together	*pukak* crystalline snow that breaks down, separates, and looks like rough salt	pukak snow crust	*pukak* bottom layer of the snow cover, made up of large loosely bonded crystals, easily broken up	*pukak* sugar snow
		piirturiniq thin coat of light, soft snow deposited by a snow flurry on an object, ice	*putsinniq/puvvinniq* wet snow on top of ice		
	kersok crust on the ice in the spring	*qannitaq* snow recently fallen to the ground			
	kerksokak frozen crust of the snow	*qiasuqaq* snow that had thawed and is refrozen with an iced surface		*qiqsruqqaq* glazed snow	
	kersokpok frozen snow, in which there are tracks	*qiqumaaq* snow whose surface is frozen	qinuq rotten snow/slush on sea		
		qirsuqartuq snow that thawed freezes stiff and hard			
	sakketok fresh fallen snow, not blown or drifted			*sixxigruk* old icy snow, extra-hard	

independent English stems for snow are mostly faulty.[10] The only independent terms for snow in today's English from Pullum–Woodbury's list are "blizzard" (severe snowstorm), "avalanche" (a borrowing from French), and "hardpack."[11]

If we are to count independent stems only, the diversity of the English snow nomenclature is indeed quite limited, compared not only to the Inuit/Eskimo but also to several other languages, including Indo-European ones, spoken by people having greater exposure to snow and severe winter conditions. In Russian, for example, most snow-related terms are built, like in English, by using the stem *sneg/snezh* ("snow") with various added suffixes or independent stems, i.e., *snegopad* (snowfall), *snezhinka* (snowflake), *snezhok* (snowball), *snezhnik* (leftover snow in summer on the mountain slope), *snezhura* (wet mushy snow, close to the Inuit *qinu*), *snezhnitsa* (melted water from snow). In addition, Russian has several more independent terms for snow, such as *porosha* (first light snow on the ground), *sugrob* (heap of snow), *nast* (snow crust), *naduv* (pile of blown or drifted snow), *zastruga* (snow wave, linear-shape snowdrift), *pozemok* (low-level snowdrift), *protalina* (open ground where the snow has melted).[12] Russian speakers use *four* independent terms for various types of snowstorm or blizzard, including *metel'* (the most common word), *viyuga* (strong snowstorm, usually with a connotation of noisy blowing wind), *buran* (loan from Turkic, violent snowstorm, usually in the open space, like the steppe), and *purga* (loan from Finnish *purka*, prolonged and violent snowstorm commonly seen in northern parts of Russia and Siberia). This illustrates that some languages with more (or longer) exposure to snow and/or sea ice than English naturally develop detailed and meaningful terminologies for those phenomena that are of practical value to its speakers, even if some linguists claim otherwise.

Conclusions

It is obvious that during and after his fieldwork on Baffin Island, Boas was aware of his limitations in communicating with the Inuit and was reserved in assessing the value of his field material. Like many scientists on a first trip to a new area, he tried to overcome these limitations by traveling extensively across the terrain with local companions and by focusing on Inuit settlement patterns and mapping of local tribal groupings, place names, mobility, and land use. In his later research, Boas used a very different approach in forging long-term collaborations with locally based experts who were fluent in indigenous languages and had access to knowledgeable elders. This is also the approach used by many SIKU teams for this project.

It is not surprising that the number of local Inuktitut terms for ice and snow that Boas recorded on his first and only field work among the Inuit was, perhaps, less than one-third of what is known to today's speakers. The message from the first to the fourth IPY 125 years later is clear. It is not how much or how long we travel over the Arctic terrain that defines the quality of our material, but rather the depth of our collaboration with local experts and the amount of information they are willing to share with us. Six generations after Boas's fieldwork, and despite many transitions in the Inuit lifestyles, there is a tremendous pool of environmental expertise

in many local communities, including that on ice and snow habitats. In many areas people still have a full command of rich indigenous terminologies that are often more extensive and nuanced than those developed by ice and snow scientists for their research.

Unlike Boas, we may rely these days not only on observations and recordings made by local partners and indigenous cultural specialists but also on the data collected at community meetings or stored in local schools and heritage curricula; and on the use of electronic maps and other modern digital technologies mastered by many of today's northern residents. These and other new resources have been actively employed to document indigenous knowledge and use of sea ice in modern polar communities during the SIKU project.

Lastly, Boas' recording of the Inuit terms for ice and snow had little relevance to what 100 years later became known as "The Great Eskimo Vocabulary Hoax." This entire story is a misnomer and it is based on the misunderstanding of Boas' legacy. Also, this debate has little to contribute to the study of Inuit knowledge of snow and ice, except that it subjects this knowledge to misinterpretation and condescending boasting. So, if some linguists and journalists are interested in counting someone's "words for snow" we have a message for them. Please switch to another language! The Norwegian Sámi, who tend to their reindeer herds over the northernmost realm of Europe, reportedly have 100 words for snow (Magga 2006).

Acknowledgments We are grateful to our colleagues, Claudio Aporta, Ernest S. Burch, Jr., Louis-Jacques Dorais, Ives Goddard, and Michael Krauss for many valuable comments to the first draft of this chapter. Mark Halpern was a source of inspiration on many issues related to the "Great Eskimo Vocabulary Hoax" debate. Matthew Sturm shared with us his lexicon of the Inuit/Inupiaq terms for snow collected among knowledgeable elders in Barrow, Alaska; and Noel Broadbent shared and translated the Swedish list of ice terms from Edlund's dissertation (2000). Our colleagues in the SIKU project – Claudio Aporta, Ron Brower, Gita Laidler, and Pierre Taverniers – kindly offered Inuit ice vocabularies they collected in 2003–2008 in Igloolik, Barrow, Pangnirtung, and Qeqertaq, respectively, for our comparative analysis with Franz Boas' 1894 lexicon. All shortcomings in interpreting the Inuit knowledge or ice and snow are of our own.

Notes

1. Boas went to his first fieldwork in Baffin Island in June 1883 on board the supply ship *Germania* sent to bring home the scientific personnel of the German IPY station at Kingua Fjord. His work was supported by the German Polar Commission that was in charge of the German research activities during IPY 1882–1883. Boas also benefited from some supplies, equipment, and logistics left behind by the German IPY expedition (Cole and Müller-Wille 1985:41–45).
2. SIKU (#166); ELOKA (Exchange of Local Knowledge in the Arctic, #187); EALAT (#399); Inuit, Narwhal and Tusks (#164), and others.
3. Throughout this chapter, the term "Eskimo" is used when referring to historical sources from the 1800s and 1900s and also when applied to the entire "Eskimo" language area that includes both the Inuit/Inuktitut/Inupiaq and Yupik/Yup'ik languages. In all other cases, indigenous residents of the Canadian Arctic are called Inuit and their language, Inuktitut.
4. Franz Boas/Hinrich Rink, Minden/Copenhagen, April 28, 1885; also A. F. Elsner (Moravian missionary to Labrador)/Franz Boas, Bremen/Minden, June 26, 1885; both in the Rink Papers, Archive of The Royal Library, Copenhagen. Translation from the German by L. Müller-Wille.

5. See De Reuse (1995); Derose (1999/2005); Fayhee (2009); Halpern (2008); Kaplan (2005); Liberman (2003, 2006); Muldrew (1997/2000); Pullum (2003, 2004); Woodbury (1991, 1994). For the most thorough and balanced review of the various terminologies for snow, including the origins of the "Great Eskimo Vocabulary Hoax" – see Mergen (1997:159–182).
6. See, lecture, "Language and Thought," by Colin Phillips, University of Delaware, 11.04.1999 http://www.ling.udel.edu/colin/courses/ling101_f99/ lecture18.html (accessed April 28, 2009).
7. *Aput* is the most general Inuit term for snow on the ground; *qana* (?) evidently is the wrong form for *qaneq*, "falling snow" (Boas 1894:104); *piqsirpoq* (*pi'rtsirpoq* in Boas 1894:110) refers to the process of snow blowing or drifting under the force of wind (Germ. *der Schnee treibt* – Boas 1894:110); *qimuqsuq* means "snowdrift," or rather, a wavy surface built by the snowdrift.
8. Most of those terms, like *aniu* (soft snow good for drinking water), *apun* (the most general term for snow), *aqilluqqaq/aqilluraq* (light soft snow), *masak* (mushy, water-logged snow), *mauya/mauja* (deep soft snow), *pukak* (crystalline snow), *qiqsruqqaq* (glazed snow) are common across the Inuit/Inupiaq/Inuktitut area.
9. As Mark Halpern rightly points out (personal communication, August 4, 2009), many English words involving "snow" do not describe the type of snow but refer to something else, like "snowball" is not a kinds of snow, but a kind of ball, just as "meatloaf" is not a kind of meat but a kind of loaf. Same applies to snow goose, snowmobile, snowbird, snowbell, snowplow, etc.
10. English words like "powder," "crust," or "dusting" cannot be associated with snow without special context. "Sleet" is more a term for "freezing rain" or ice pellets, rather than snow; and "slush" is used for all kinds of mushy substances, besides partly melted snow and ice, including soft mud, and paper pulp (http://www.merriam-webster.com/dictionary/slush).
11. The latter, besides being a definition for compacted snow (http://www.merriam-webster.com/dictionary/hardpack), is commonly used for any firm ground (hardpack soil) or even for special brands of bag-packs and bicycles.
12. All explanations of the Russian snow terms are from Murzaev (1984).

Appendix: Franz Boas' List of Cumberland Sound Ice Terms (1894) by Major Groupings

Ice

sī'ko *ice/ L., G. same.*

Young Ice

qati'dinrn the ice on the beach in the fall that floats at high tide and is stranded at low tide/L. *kattinek.*
siko'qoang 1 to 1 ½ ft of thick ice in the fall
sī'koaq thin ice formed by the first frost
sikū'liaq thin ice at the ice edge during the winter

Pack Ice, Old Ice

kaqvaq pack ice/L. *kackvak*.
qaqbang multi-year ice, pack ice (see *kaqvaq*).
tu'vang thick winter ice/L. *tuvak*.
tuvarea'qtung thick ice at the end of the fall season

Land-Fast Ice

qavirpi'jung ground ice/G. *qaungoq.*
quta'rong ice foot at a steep coast

Pressure Ridges, Rafted and Layered Ice

igjijug thick, thick ice/L. *ivjo'vok*, G. *ivssuvoq*.
ivu'dnirn ground ice on the beach/, L. *ivuvok* /ice piling upon the beach/

Various Ice Forms

manituā'dlu – hillocky land, rough ice/

Cracks, Leads, Polynyas

a'jorang crack in the ice (extensive crack, not the cracks in the low tidal flats)/L. *ajorak.*
A'jorang Place name: the crack
Aqti'nirn Place name: where the ice melts in front of the mouth of a river/
Angmaritung Place name: the open one, not frozen over/L. *angmarok.*
Angmartung Place name: the open one (not frozen over)/
qu'gnirn crack in the ground ice/L. *Kongnek.*
sinā' his edge, ice edge

Ice Floes, Floating/Drifting Ice

piqalu'jang iceberg/L. *Pekkalujak.*
Piqaluirtung Place name: abundant with icebergs
siku'kulu small pieces of drift ice

Spring Ice Melt

imakti'nirn ice over melting snow, strong enough to carry a sled/
mase'lirang thin ice that is formed on the snow in spring, wet moss/L. *masalerak.*

Other Types of Ice and Ice-Related Phenomena

miso'majung glacier reaching into the sea/G. *misugpa* – he dips it into [something]/
nilang freshwater ice/L. *nillak*, G. *nilak*.
penartua'dlu water on ice
Sirmilling Place name: place where there is a glacier/
si'rming thin ice, firn, glacier/L. *sermek*, G. *sermeq*.

Derivatives

Sikosuilaq Place name: [location is] free of ice/
sikoqa'ngenut across the ice/
Sikosū'ilaq Place name: [place] without ice/

References

Anonymous. N.d. Glossary (of) Snow and Avalanches. Working group (of the) European Avalanche Forecasting Services. WSL Institute for Snow and Avalanche Research, Davos, Switzerland. http://waarchiv.slf.ch/index.php?id=278#5416 (Accessed May 9, 2009).

Armstrong, T. 1958. Illustrated ice glossary. Pt. 2. *Polar Record* 9(59): 90–96.

Aporta, C. 2003. Old Routes, New Trails: Contemporary Inuit Travel and Orienting in Igloolik, Nunavut. Unpublished Ph.D. thesis. Department of Anthropology, University of Alberta, Edmonton.

Berman, J. 2001. Unpublished Materials of Franz Boas and George Hunt: A Record of 45 Years of Collaboration. *Gateways: Exploring the Legacy of the Jesup North Pacific Expedition, 1897–1902*. *Contributions to Circumpolar Anthropology* 1. I. Krupnik and W.W. Fitzhugh (eds.), Washington: Arctic Studies Center, pp.181–213.

Boas, F. 1881. *Beiträge zur Erkenntnis der Farbe des Wassers.* Doctoral dissertation, Faculty of Philosophy, University of Kiel, Germany. Kiel: Schmidt & Klaunig.

Boas, F. 1885. Baffin-Land. Geographische Ergebnisse einer in den Jahren 1883 und 1884ausgeführten Forschungsreise. *Petermanns Mitteilungen*, 80: 1–100. Ergänzungsheft.Gotha: Justus Perthes.

Boas, F. 1888. The Central Eskimo. *Sixth Annual Report of the Bureau of Ethnology* 1884–1885:399–675. Washington: Bureau of Ethnology (Reprint 1964. Toronto: Coles).

Boas, F. 1894. Der Eskimo-Dialekt des Cumberland-Sundes. *Mittheilungen der Anthropologischen Gesellschaft in Wien*, Band XXIV (Neue Folge, Vol. XIV): 97–114. Alfred Hölder, Wien.

Boas, F. 1911. Introduction. In *Handbook of American Indian Languages*. Part 1. Smithsonian Institution, *Bureau of American Ethnology, Bulletin* 40: 1–84. B. Franz (ed.), Washington: Government Printing Office.

Brower, R., Jr. 2008. (Barrow) Inupiaq snow terminology. In *Light Snow, Deep for Walking.* M. Sanchez, *Weekend America*, January 12. http://weekendamerica.publicradio.org/ display/web/2008/01/11/snowwords/ (Accessed April 27, 2009).

Cole, D. and Müller-Wille., L. 1984. Franz Boas' expedition to Baffin Island, 1883–1884. *Etudes/Inuit/Studies* 8(1): 37–63.

De Reuse, W. 1994. Eskimo Words for 'Snow,' 'Ice,' etc. *Linguist List* 5.1293 (Accessed April 26, 2009 at http://www.linguistlist.org/issues/5/5-1293.html)

Derose, S.J. 1999/2005. Eskimo Words for Snow. http://www.derose.net/steve/guides/snowwords (Accessed June 2, 2009)

Dorais, Louis-Jacques 1996. *La parole inuit. Langue, culture et société dans l'Arctique nord-américain.* Louvain-Paris: Peeters Press.

Edlund, A.-C. 2000. *Sälen och jägaren. De bottniska jägarnas begreppssystem för säl ur ett kognitivt perspektiv*. Norrlands Universitetsförlag, Umeå.

Erdmann, F. (ed.), 1864, 1866. Eskimoisches Wörterbuch gesammelt von Missionaren in Labrador, revidirt und herausgegeben von Friedrich Erdmann. Erster Theil: Eskimoisch-Deutsch (1864, 350 pp.), Deutsch-Eskimoisch, Zweiter Theil (1866, 242 pp.). Ernst Moritz Monse, Budissin [Bautzen].

Fayhee, J.M. 2009. Snow by Any Other Name. *Mountain Gazette* 151. http://www.mountaingazette.com/exclusive/features/snow_by_any_other_name.

Fortescue, M. 1984. *West Greenlandic*. London, etc: Groom Helm.

Fortescue, M. 1991. I'nuktun, An introduction to the language of Qaanaaq, Thule. *Institut for Eskimologi publication series* 15. Copenhagen.

Freeman, M.M.R. 1984. Franz Boas on baffin island: A centennial observed. (In Boas footsteps: 100 years of Inuit anthropopology). *Études/Inuit/Studies* 8(1): 11–12.

Halpern, M. 2008. *Language and Human Nature*. Transaction Publications.

Harper, K. 2008. The collaboration of James Mutch and Franz Boas, 1883–1922. *Études/Inuit/Studies* 32(2): 53–71.

Jacobson, S.A. 1984. *Yup'ik Eskimo Dictionary*. Fairbanks: Native Language Center.

Kaplan, L. 2003. Inuit snow terms: How many and what does it mean? In *Building Capacity in Arctic Societies: Dynamics and shifting perspectives. Proceedings from the 2nd IPSSAS Seminar. Iqaluit, Nunavut, Canada: May 26–June 6, 2003*. F. Trudel (ed.), Montreal: CIERRA. Facultés sciences sociales Université Laval.

Kaplan, L. 2005/2008. Inuit Snow Terms: How Many and What does it Mean? http://www.uaf.edu/anlc/snow.html#citation (Accessed April 26, 2009).

Kleinschmidt, S. 1851. *Grammatik der grönländischen Sprache mit teilweisem Einschluss des Labradordialektes*. Berlin: Walter de Gruyter & Co, (Reprint: Hildesheim: Georg Olms Verlagsbuchhandlung 1968).

Kleinschmidt, S. 1871. *Den grønlandske Ordbog*. København: Louis Kleins Bogtrykkeri.

Krupnik, I. 2003. Fourth International Polar Year. *Northern Notes* Fall, 6–7.

Krupnik, I., Bravo, M., Csonka, Y., Hovelsrud-Broda, G., Müller-Wille, L., Poppel, B., Schweitzer, P., and Sörlin., S. 2005. Social sciences and humanities in the International Polar Year 2007–2008: An integrating mission. *Arctic* 58(1): 91–97.

Laidler, G.J. 2007. Ice, Through Inuit Eyes: Characterizing the Importance of Sea Ice Processes, Use and Change Around Three Nunavut Commuties. Unpublished Ph.D. Thesis, Department of Georgraphy, University of Toronto (Accessed July 14, 2009 at http://eratos.erin.utoronto.ca/robinson/dissertation/).

Laidler, G.J., Dialla, A., and Joamie., E. 2008. Human geographies of sea ice: Freeze/thaw processes around Pangnirtung, Nunavut, Canada. *Polar Record* 44(231): 335–361.

Liberman, M., 2003. 88 English Words from Snow. *Language Log* December 7, 2003 (Accessed April 26, 2009 – http://itre.cis.upenn.edu/~myl/languagelog/archives/000200.html).

Liberman, M. 2006. The Proper Treatment of Snowclones in Ordinary English. *Language Log*, February 4, 2006 – Accessed April 26, 2009 http://itre.cis.upenn.edu/~myl/languagelog/archives/002806.html.

Lowe, R. 1983. *Kangiryuarmiut Uqauhingita Numiktittitdjutingit*. Basic Kangiryarmiut Eskimo Dictionary. Published by the Committee for Original Peoples Entitlement. Inuvik, Canada.

Lowe, R. 1984. *Siglit Inuvialuit Uqausiita Kipuktirutait*. Basic Siglit Inuvialuit Eskimo Dictionary. Published by the Committee for Original Peoples Entitlement. Inuvik, Canada.

Magga, O.H. 2006. Diversity in Saami terminology for reindeer, snow, and ice. *International Social Science Journal* 58(187): 25–34.

Martin, L. 1986. Eskimo words for snow: A case study in the genesis and decay of an anthropological example. *American Anthropologist* 88(2): 418–423.

Mergen, B. 1997. *Snow in America*. Washington and London: Smithsonian Institution Press.

Muldrew, K. 1997/2000. A Lexicon of Snow. http://www.ucalgary.ca/~kmuldrew/cryo_course/snow_words.html (Accessed May 10, 2009).

Müller-Wille, L. 1985. Snow and Ice in Inuit Place Names in the Eastern Canadian Arctic. In *43rd Eastern Snow Conference Proceedings 1984*, pp. 55–57. Department of Geography, Montréal: McGill University.

Müller-Wille, L. 2008. Franz Boas and the Inuit. *Études/Inuit/Studies* 32(2): 9–12.

Müller-Wille, L. 2009. Franz Boas' Beitrag zur Ethnologie der Inuit: Methodik und Ansätze zwischen Geographie und Völkerkunde. *In Franz Boas (1858–1942). Wissenschaft, Politik, Mobilität*. H.-W. Schmuhl (ed.), Bielefeld: Transcript Verlag, pp. 303–310.

Müller-Wille, L., (ed.) 1998. *Franz Boas among the Inuit of Baffin Island, 1883–1884: Journals and Letters*. Toronto: University of Toronto Press.

Müller-Wille, L. and Gieseking, B. (eds.), 2008. *Bei Inuit und Walfängern auf Baffin-Land (1883/1884). Das arktische Tagebuch des Wilhelm Weike*. (Mindener Beiträge, Band 30). Minden: Mindener Geschichtsverein.

Müller-Wille, L. and Weber, L. 1983. Inuit Place Name Inventory of Northeastern Québec-Labrador. Marburger Geographische Schriften 89/McGill Subarctic Research Papers 37: 151–222.

Müller-Wille, L. and Weber Müller-Wille, L. 2006. Inuit geographical knowledge one hundred years apart: Place names in Tinijjuarvik (Cumberland Sound), Nunavut. In *Inuit Studies in an Era of Globalization*. P. Stern and L. Stevenson (eds.), Lincoln: University of Nebraska Press, pp. 217–229.

Murray, S.O. 1987. Snowing canonical texts. *American Anthropologists* 89(2): 443–444.
Murzaev, E.M. 1984. *Slovar' narodnykh geograficheskikh terminov* (Glossary of folk geographic terms). Moscow: Mysl Publishers.
Peck, E.J. Rev. 1925. *Eskimo-English Dictionary*. (Compiled from Erdman's Eskimo-German Edition 1864 A.D.). Published by the Church of the Ascension Thank-Offering Mission Fund, Hamilton. Toronto.
Petitot, É. 1876. *Vocabulaire francaise-esquimau*. Paris: Ernest Leroux.
Pullum, G. 1989. "The Great Eskimo Vocabulary Hoax." *Natural Language and Linguistic Theory* 7(2): 275–281.
Pullum, G. 1990. "The Great Eskimo Vocabulary Hoax." *Lingua Franca* 1: 28–29.
Pullum, G. 1991a. *The Great Eskimo Vocabulary Hoax and Other Irreverent essays on the Study of Language*. Chicago: University of Chicago Press.
Pullum, G. 1991b. The Great Eskimo Vocabulary Hoax. In *The Shape of Reason: Argumentative Writing in College*. New York: Macmillan Publishing, pp. 33–38.
Pullum, G. 1994. The Great Eskimo Vocabulary Hoax. *Probable Cause: A Literary Review* Winter: 3–6.
Pullum, G. 1996. 100 Wörter für Schnee – der grosse Eskimo-Bluff. *Weltwoche Supplement*. March, 22–25.
Pullum, G. 2003. Bleached conditionals. *Language Log* (October 21) http://itre.cis.upenn.edu/~myl/languagelog/archives/000049.html (Accessed April 26, 2009).
Pullum, G. 2004. Sasha Aikhenvald on Inuit Snow Words: A Clarification. *Language Log*, January 30, http://158.130.17.5/%7Emyl/languagelog/archives/000405.html (Accessed April 26, 2009)
Rink, H.J. 1866. Eskimoiske Eventyr og Sagn: oversatte efter de indfødte Fortælleres Opskrifter og Meddelelser af H. Rink. København: C. A. Reitzel Boghandel.
Rink, H.J. 1871. Eskimoiske Eventyr og Sagn: Supplement indeholdene et tillage om eskimoerne, deres kulturtrin og ovrige eiendommeligheder samt formodede herkomst. København: C.A. Reitzels Boghandel.
Rink, H. 1875. *Eskimo with a Sketch of Their Habits, Religion, Language and Other Peculiarities*. Translated from the Danish by the author. R. Brown (ed.), Edinburgh and London: William Blackwood and Sons, 472 pp.
Rink, H. 1887. *The Eskimo tribes their Distribution and Characteristics, Especially in Regard to Language with a Comparative Vocabulary*. Copenhagen: C.A. Reitzel, and London: Longmans and Green.
Rohner, R.P. (ed.), 1969. *The Ethnography of Franz Boas*. Translated by H. Parker. Chicago: University of Chicago Press.
Schneider, L. 1985. *Ulirnaisigutiit: An Inuktitut-English Dictionary of Northern Quebec, Labrador, and Eastern Arctic Dialects*. D. Collis (ed.), Quebec: Les Presses de l'Université Laval.
Sturm, M. 2009a. *Apun: The Arctic Snow.* Fairbanks: University of Alaska Press.
Sturm, M. 2009b. Composite List of Inupiaq Snow words (March 2009). Unpublished manuscript cited with author's permission.
Vakhtin, N.B. and Emelyanova., N.M. 1988. *Praktikum po leksike eskimosskogo iazyka* (Practical Aid to the Eskimo Lexicon). Leningrad: Prosveshchenie Publishers.
Walunga, W. comp. 1988. *St. Lawrence Island Curriculum Resource Manual*. Gambell.
Whorf, B.L. 1940. Science and linguistics. *Technological Review* 42(6): 229–231.
Womkon Badten, L., Kaneshiro, V.O., and Oovi., M. 1987. *A Dictionary of the St. Lawrence Island/Siberian Yupik Eskimo Language*. Fairbanks: Native Language Center.
Woodbury, A. 1991. Eskimo Words for 'Snow'. *Linguist List* 5-1239 (Accessed April 26, 2009) http://www.ecst.csuchico.edu/~atman/Misc/eskimo-snow-words.html.
Woodbury, A. 1994. [Tony Woodbury's] 'Snow' lexemes in Yup'ik [Accessed June 15, 2009] http://www.prairienet.org/prairienations/woodbury.htm.
World Meteorological Organization. 1970. WMO sea ice nomenclature. Terminology, codes and illustrated glossary. Geneva, Secretariat of the World Meteorological Organization, *WMO/OMM/BMO*, 259, TP. 145.