

Caribou hunting and utilization in West Greenland: Past and present variants

Kerstin PASDA

Institute of Palaeoanatomy and History of Veterinary Medicine,
Ludwig-Maximilians-University of Munich (Germany)
kerstin.pasda@palaeo.vetmed.uni-muenchen.de

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ABSTRACT

In 2012, a series of interviews was carried out with Greenlandic hunters (26 to 86 years old) on caribou hunting and utilization in central West Greenland. As recently as 1950 AD, almost all parts of the caribou were utilized intensively. In the following decades, numerous uses disappeared, and a few new ones were added. A few Greenlanders reported that they had experienced the utilization of parts of caribou during their childhood that they had not used in the last decades. The intensive use of fat and caribou hides disappeared, whereas the exploitation of caribou as a tourist attraction was new. A portion of the earlier pattern of caribou utilization would be visible in an archaeozoological investigation, however a significant part would remain undetectable.

KEY WORDS

West Greenland,
caribou utilization,
ethnoarchaeology,
archaeozoology.

RÉSUMÉ

Chasse et utilisation du caribou au Groenland occidental : variantes entre passé et présent

En 2012, une série d'entretiens a été conduite auprès de chasseurs groenlandais (de 26 à 86 ans) sur la chasse au caribou et son utilisation dans le centre ouest du Groenland. Jusqu'aux années 1952, pratiquement toutes les parties du caribou étaient intensément utilisées. Au cours des décennies suivantes, de nombreuses utilisations ont disparu et des nouveaux usages sont apparus. Quelques Groenlandais racontent qu'ils ont observé durant leur enfance l'utilisation de parties de caribou qu'ils n'ont plus utilisées par la suite. L'utilisation intense de la graisse et des tendons de caribou a disparu, tandis que l'exploitation du caribou comme attraction touristique est une nouveauté. Une partie des utilisations anciennes du caribou est appréhendable par l'archéologie mais une proportion significative reste indétectable.

MOTS CLÉS:

Groenland occidental,
utilisation du caribou,
ethnoarchéologie,
archéozoologie

INTRODUCTION

Since 1999, archaeological and archaeozoological studies have been carried out in central West Greenland in the region of the Arctic Circle (Pasda 2001, 2005, 2009, 2012, in prep.; Pasda & Odgaard 2011), with most findings dated to the last centuries. The interpretation of the archaeozoological findings opened up numerous questions that could not be answered on the basis of the archaeological context or available ethnographic reports (e.g. Grønnow *et al.* 1983; or Malaurie 1957; 1973; 1976; 1977; 1979; 1982). Although the application of ethnographic studies and interviews in archaeological analyses is a matter of debate (Gould 1990: 50; Lyman 1994: 53-61; Rasmussen 1924; Rink 1975; Wobst 1978: 307; Wylie 1985; 1988: 147), I began questioning Greenlandic hunters. The goal was to broaden my knowledge about caribou use by modern hunters, and also to hear about activities that occurred during the youth of modern elders.

THULE HUNTERS AND ARCHAEOLOGICAL RESEARCH IN CENTRAL WEST GREENLAND

Around 1500 AD the Thule Culture, ancestral to modern Inuit, began to spread over East and West Greenland (Gulløv 1997; 2004). Due to the sparse population density and settlement activities, as well as the Arctic climate with its meagre vegetation, traces of earlier settlements and many activities have been preserved and are visible on the surface. It is thus possible to reconstruct much of the lives of Thule hunters without large excavations.

Thule hunters lived mainly on the Atlantic coast and along some fjords. Their subsistence was based primarily on the hunting of marine resources. During the short summer months, the hunting of caribou was intensified and the hunters travelled with their families to the interior for several days or weeks. One of the summer regions was Angujårtorfiup Nunâ (also Angujaartorfiup Nunaa), between Sisimiut on the coast and Kangerlussuaq at the end of Sønder Strømfjord (Greenlandic: Kangerlussuaq), south of the Arctic Circle (Fig. 1). This region had

a relatively mild climate and had been free of ice for thousands of years. Caribou, which were scattered throughout the entire region, remained here the whole year.

Earlier traces of hunting were detected here during several archaeological campaigns between 2001 and 2012 (Odgaard *et al.* 2003; Odgaard 2007, 2009). The majority of the identified settlements date to Thule times or to hunters who moved to this region to hunt in summer until the 1960s or 1970s. This area has not been visited for the last 40 to 50 years as the hunters now only travel to the coasts of the fjords to spend a few weeks during the hunting season. The official hunting season for caribou today begins on August 1st. Many families arrive shortly before the beginning of the season to pitch their tents at their traditional camping places. Long marches are taken from there to find the caribou which are widely scattered at this time. Due to the warm temperatures and the annoying mosquitoes, the caribou prefer to remain on high ground and near the inland ice at the beginning of August. They only come closer to the coasts of the fjords in September.

Hunters must be willing to walk for great distances to find caribou. They sometimes travel for several days before they have any hunting success. Caribou are cut into pieces for transport at the killing site, and hunters often travel together in small groups so that the weight of the meat can be divided. However, some people hunt alone and carry the whole weight of the animal on their backs with plastic bands around their foreheads (Fig. 2).

Twenty-seven musk oxen were released in the region of Kangerlussuaq in the 1960s (Olesen 1991) to give the hunters an alternative to caribou, which were sparse in many years. Caribou populations go through a natural cycle of about 15 years between a so-called caribou high, e.g. 100,000 at the end of the 1960s (Grønnow 1986; Thing 1984: 4), and a caribou low, e.g. 3,000 - 6,000 in 1984 (Meldgaard 1986: 21; Thing 1980). The few musk oxen have reproduced dramatically during the last decades. It is said that there were 5,000-10,000 of them in the region of Angujårtorfiup Nunâ in 2012. However, many Greenlandic hunters still prefer to hunt caribou as they prefer its taste, and because

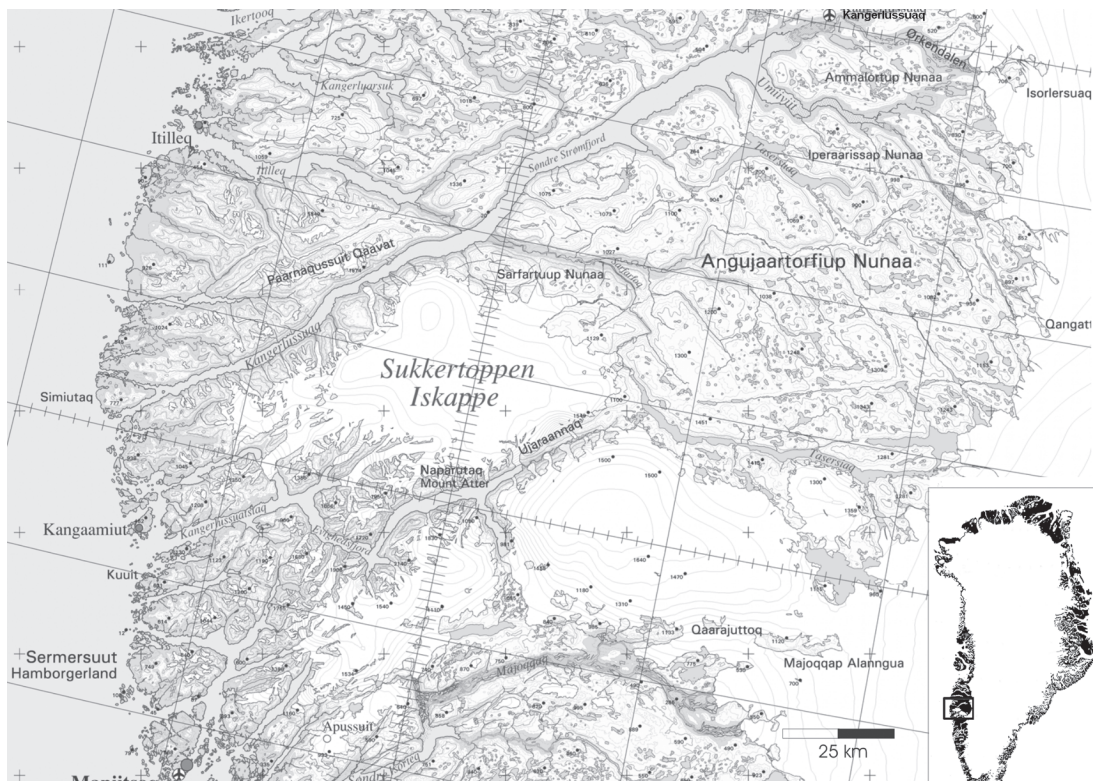


FIG. 1. — Research area in West Greenland.



FIG. 2. — Left: Titus Rosing transporting a caribou from the kill site to the summer camp, Angujaartorfik 2010. Right: parts of a hunted caribou being transported from the hunting site to camp. The skull and metacarpus were left at the kill site, Ujarasugs-suaq 2010.

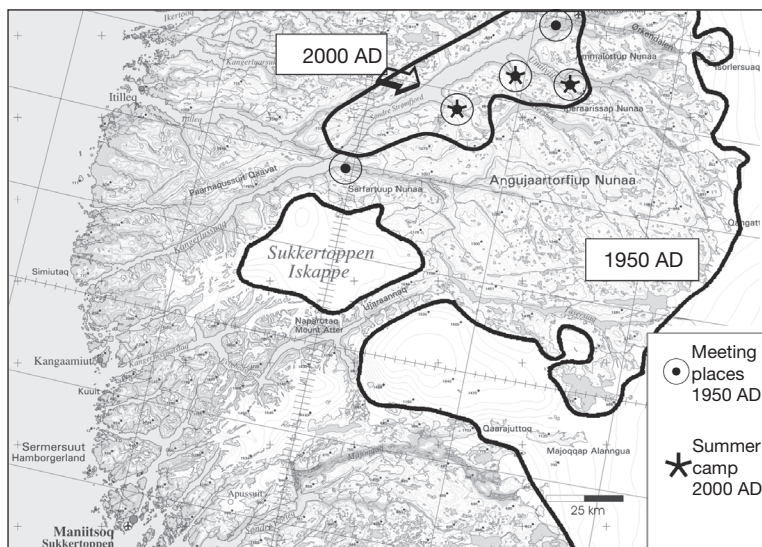


FIG. 3. — Hunting grounds in the research area at ca. 1950 and 2000 AD. Circles with dot: Meeting places where the *Umiat* (open skin boats) were stored ca. 1950 AD; Stars: Summer camps in 2000 AD.

hunting them presents a challenge. Hunting caribou is considerably more difficult than hunting musk oxen, as they are widely scattered and very mobile. Although most musk oxen do indeed run away as soon as humans get too close (flight distance ca. 20-50 meters), they are comparatively inactive and thus easier prey.

TRADITION AND CHANGE IN CARIBOU HUNTING

Settlement patterns and hunting techniques of the younger generation of Greenlanders today differ in many ways from the former traditions. Today hunters stay in areas near the coast of Søndre Strømfjord. They visit only the regions only up to a day's march from the coast (Fig. 3). This change also means that knowledge of traditional forms of settlement patterns, hunting techniques and caribou exploitation may be lost with the death of the generation of Greenlanders who visited the interior up to the middle of the 20th century.

For this project, interviews were held with the oldest Greenlanders in different locations of West

Greenland. This article presents their knowledge of the utilization of caribou between ca. 1950 and the time after 2000 AD.

METHODS

In order to find interviewees, the coastal villages of Maniitsoq, Kangaamiut and Sisimiut were visited several times. These places belong to the main area associated with the summer hunt in Angujårtorfiup Nunâ. The people questioned were usually visited with a translator at their house or old-age home. The interviews were documented with videos, a voice recorder and photos. Interviews were carried out with a total of 13 Greenlanders between the ages of 26 and 86:

Elisabeth Rosing, 43, born 1969; *Esra Rosing*, 45, born ca. 1966; *Efraim Olsen*, 67, 11-18-1945; *Charlothé Olsen*, 63, 11-4-1949. *Arkalo Goleathsen*, 72, 04-13-1940. *Ane Marie Rosing*, 70, born in 1942; *Ålberåk Berthelsen*, 54, 10-24-1954; *Andreas Lyberth*, 81, 06-02-1931; *David Lyberth*, 77, 11-21-1935; *Bolethe R. Larsen*, 86, born in 1926; *Kristian Kreuzmann*, 49, 06-04-1963; *Jensine Chris-*

tiansen, 63, 02-21-1949; *Tupeernaq Kreutzmann*, 26, 02-01-1986.

The hunters were asked about their own experiences and afterwards what they could report about their ancestors. The interviews did not follow a strict pattern. Questions were asked on the basis of maps and photos. Depending on what the hunter had to report and how the interview was going, certain questions were asked again and again or we waited to see how the interview developed and what information the interviewee volunteered. This often resulted in unexpected information which could be brought up in further interviews. For this reason, not every person questioned gave answers relating to the same activities.

Most of the Greenlanders questioned had, if at all, only experienced hunting at a distance from the coast in the interior in their childhood or early adolescence. Possibly the last hunter who still went "traditionally" far into the interior for the summer hunt was David Lybert. According to his reports, he travelled to the southern region of Angujáartorfiup Nunâ (Qooruluup kuua), several days' march from the fjord, in the middle 1980s.

RESULTS

INFORMATION ON CARIBOU UTILIZATION

In the past, until about 1950 AD many tools such as harpoons, arrowheads, and spears were made from **antler**. This was usually no longer witnessed by the interviewed hunters themselves. In the 20th century antlers were still used for the roof of tent houses, for the construction of kayaks and as drying racks for caribou tongues. In addition, "pearl" necklaces were made of antler, and **antler velvet** was cut off for bracelets. The **brain** was eaten raw or put for some time in the stomach and then cooked. The **lower jaw** was broken open and the marrow was eaten. The **tongue** was eaten raw, cooked and preserved in fat, dried or salted. The **ears** were generally cleaned of skin and hair, then dried and later cooked and served as a soup. The **eyes** were either completely eaten raw, or the gel was sucked; sometimes they were boiled or pickled in salt and cooked later. It was also reported that the **eyeballs** were used as toys.

The **lips** were sometimes eaten warm directly after the killing, and sometimes cooked. The **nose** was usually eaten raw after the removal of the hair, and also sometimes cooked. The **heart** was often used as a storage vessel for other organs such as ears, brain, fat and bone marrow. Together they were finally cooked. Frequently, the heart was dried or smoked, and occasionally eaten raw. **Liver** and **kidneys** were either eaten raw directly at the hunting place, cooked, or stored for some time in the small stomach (probably abomasum) and then eaten raw. The **lung** was eaten occasionally, however, it was not mentioned in which form. The **stomach** was sometimes dried. In most cases, however, it was used to keep the raw or cooked liver and kidneys, that remained in it for a few days to several months. A portion of the stomach content was sometimes left in the stomach and was used to change the flavor of the organs that were preserved in the stomach. The **stomach content** was also used as a remedy for open wounds. A special delicacy was the great net of the stomach, the **greater omentum** (*Omentum majus*), a fold of the peritoneum which is rich in fat and connective tissue. This tasted very sweet, and was cooked with other body fat to improve its taste. The skin of the **intestine** was kept as storage for fat, but usually used as sausage casing. The **meat** was cooked rarely and almost entirely dried. The **cheeks** were cooked like the rest of the meat. The **fat** has been either cooked or stored pure, often over many months. Besides, the fat was mixed with an unspecified rock powder, which resulted in a red color. This was used to color the *kamiks* (boots). The **testicles** were occasionally eaten raw. When asked about the reason, it was said that it might have been a sexual enhancer. The **milk** was either pushed out of the udder or cooked together with the udder. The **blood** was consumed raw or cooked. Sometimes it was collected in the stomach and then cooked together with the stomach. The **tendons** were dried, cut into thin strips, smoothed and rounded by rolling down the cheek, and then used for sewing. The **spinal column** was dried either whole or cooked in sections. In dried form, it was occasionally taken to the coast. The **ribs** were dried and often taken to the coast after the hunting season. The dried caribou products that were taken



FIG. 4. — Drying of caribou meat and ribs on plastic nets, Angujaartorfik 2012. Photo by Anne Tømerhavn.

to the coast were kept in stone caches in the hinterland. Ribs were used as stakes to fasten caribou hides which were spread out on the ground to dry. The **long bones** were all broken into small pieces and boiled. Occasionally, long bone fragments were used as stakes. The **astragalus** was used as part of a drill. The **metapodials** were smashed like the other long bones and boiled. The fat of the metatarsals was used as a skin cream and for softening tendons, which afterwards were used for sewing. Together with body fat the marrow of the metatarsals was used to make red color. The marrow of the metatarsals was often eaten raw. The proximal and medial anterior and posterior **phalanges** were cracked and boiled. The **hide** was very important and was completely utilized. It was used to cover or carry the dried meat, for anoraks or shoes, as a sleeping bag and mattress, or sold to factories.

Only a few parts of the caribou were intensively utilized after 2000 AD. It is striking that the only parts used are those which can be obtained with

relatively little effort, such as large pieces of meat and fat on the postcranial body. **Fat** is still used, but more for taste than for energetic reasons. The **greater omentum** is still considered a delicacy and because of its sweet flavor is used to garnish dishes, as coffee cream or to wrap steaks. **Long bones** are smashed occasionally to open the medullary canal. Rarely, the bones are boiled, however they are often discarded after removing the meat. The bone marrow is rarely used. Only the **metatarsus** is smashed regularly to eat the marrow raw or cooked. When the marrow of the metatarsus is not eaten, the metatarsus with attached hooves is occasionally used as a toy gun. **Metacarpals** and anterior **phalanges** are mostly left at the kill place. The medial and posterior proximal phalanges are also mainly discarded. Sometimes, the proximal phalanges and the **keratinous hoof** covering are made into a pendant for a necklace. **Hides** are taken rarely. They are used occasionally for sledges and the skin of calves is sometimes made into drums.

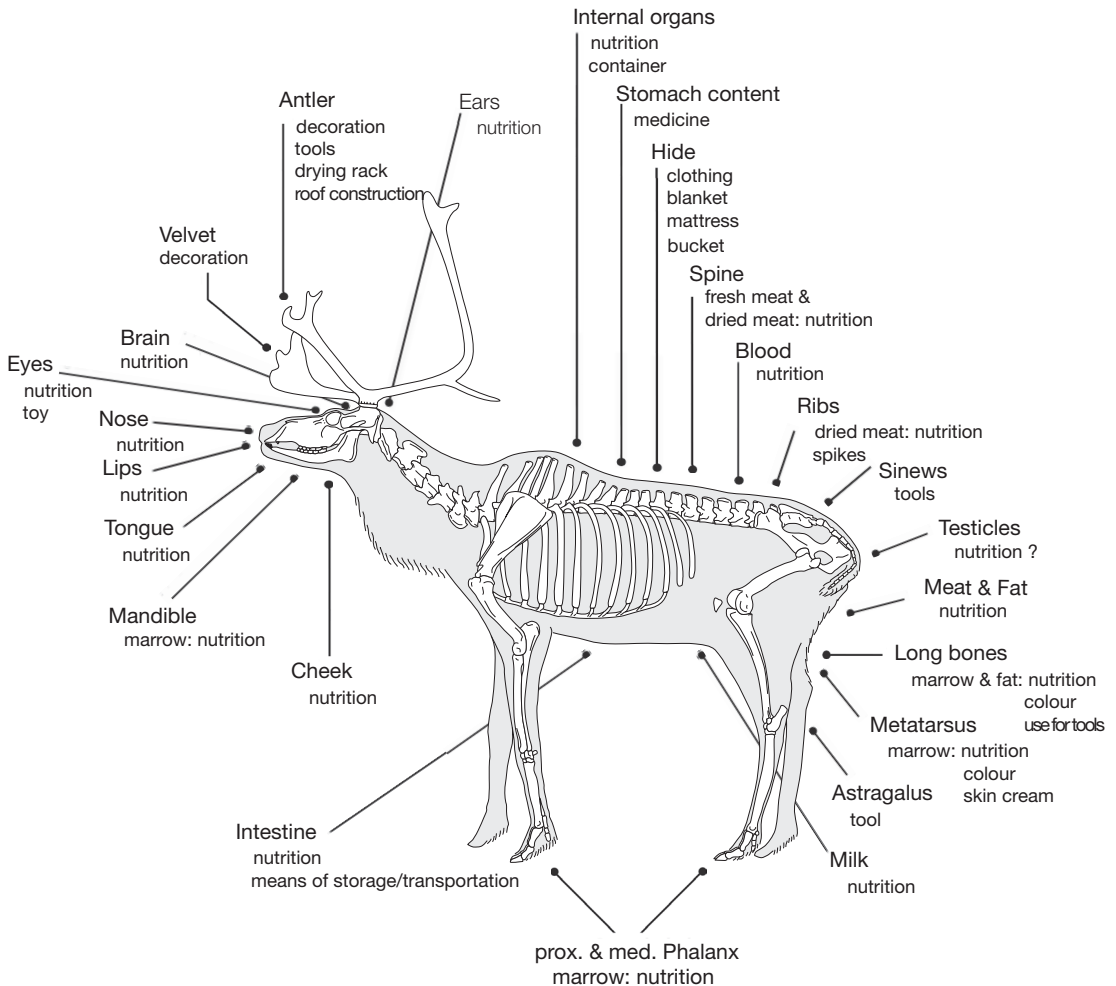


Fig. 5. — Caribou utilization in Angujäärtorfiup Nunã around 1950 AD (*Rangifer tarandus* after Beauval & Coutureau © 2003, Archeozoo.org)

Only the hide of the first caribou shot by a young hunter is taken, prepared and preserved. Occasionally, this hide is used to make a special garment. **Antlers** are used rarely. Sometimes they are used to make tourist souvenirs, *tupilaks* (small carvings) or tools. The **velvet** is still used as bracelets. Still important is the use of caribou **meat**. It is mainly dried and rarely cooked fresh, but usually stored for regular consumption and served at celebrations. The **tongue** is occasionally cooked or salted. **Ribs** are still often dried and brought to the coast (Fig. 4). The **spine** is mainly discarded, occasionally

cooked in sections, and sometimes dried in one piece. At home at the coast, the dried ribs and dried meat are stored in freezers.

DISCUSSION

A COMPARISON OF CARIBOU UTILIZATION AROUND 1950 AND AFTER 2000 AD

The Interviews showed how dramatically the utilization of caribou changed during the 20th century. Up until the middle of the 20th century, all parts

of the caribou were still used (Fig. 5). During the following 40 to 60 years, many uses disappeared, but others were added. It was not possible to determine when various parts of the caribou were last used and exact dates were seldom cited. It was surprising that the youngest female hunter (26 years old) could still tell about uses that the older Greenlanders had forgotten.

In comparison with the time around 1950, considerably less of the caribou was utilized in the years after 2000 (Fig. 6). It is striking that fat, which was still of great importance for the inhabitants of the Arctic up to the middle of the 20th century, has become considerably less important. Fat is still important, but more for taste than for energy. Breaking the bones into small pieces and boiling them to gain the last bits of fat is now considered to be too laborious and no longer necessary. A modern lifestyle and changes in nutrition, which are increasingly orientated around European food imports, have led to an increasing avoidance of traditional high-calorie foods. The same is true of traditional clothes where caribou hides once played a major role. Instead, the importance of caribou products (art or souvenirs) for tourism has increased. Parts of the caribou are now used that were not utilized before the middle of the 20th century.

At the beginning of the 21st century, only those parts of the caribou that could be obtained with little effort were regularly utilized, such as the meat and the fat of the postcranial skeleton. In the cranial region, it was only the tongue that was sometimes eaten. Hunters seldom took the antlers with them, though they still dried the ribs and brought them to the coast. The dried ribs were no longer stored in stone caches there, but in freezers instead. Even though the meat was dried, it would soon begin to rot in the humid climate of the coast. The ribs were no longer used as tools, for example as stakes for securing hides for drying. It is only the hide of the first caribou that someone kills that is kept and prepared later. The spinal column is sometimes dried in the interior, but it is usually thrown away. Only one hunter told me that he still cut the spinal column into pieces and boiled it. With the exception of the dried ribs, bones were no longer taken to the coast. Bone marrow was regularly

only taken from the metatarsus. However, in the summer camp of Angujaartorfik we observed that there were exceptions from what the interviewee had told us about the use of the bone marrow: at times we documented complete metatarsi which were not smashed.

Some hunters still smash the long bones to get the marrow. In these cases the bones are no longer smashed into small pieces as they used to be, but only into larger parts. The last of the interviewed hunters who smashed the bones into small pieces to boil did this for the last time in the summer of 2011. It is often the case that the bones are not boiled after the marrow has been removed, but thrown away.

One of the innovations that has appeared in the last decades is the use of caribou toe bones and hooves as jewelry. On occasion they also use other parts of the caribou as ornaments or jewelry. Another change is the use of antler for tourists' souvenirs, carved into jewelry, various articles of daily life, and *tupilaks*. At times they cut the velvet from the antlers and make it into bracelets. None of the interviewees told us that they had made toys from antler. However, several toys - probably reproductions of traditional toys - were exhibited in the Maniitsoq Museum.

Some traditions have been preserved. Hunting and different aspects of the hunt still play an important role in the lives of many Greenlanders of this region. Among these is the tradition to visit the summer camp and then begin a new year refreshed and stronger after weeks away from civilization. Again and again we saw and heard what a respectful attitude they had towards the caribou they shot. The youngest person we interviewed, Tupeernaq Kreutzmann, expressed this very well, "It is very important for our parents to see that we treat the animals with respect and that we cut the meat in the right way and do it with gentleness".

VARIATIONS IN THE UTILIZATION OF CARIBOU

During the course of the interviews, it became clear that there is great variability in the utilization of caribou. The passing on of traditions played an important role; depending on what the person who had taught the hunter was accustomed to, specific activities were retained or not even learned at all. Some uses of caribou were completely unknown to

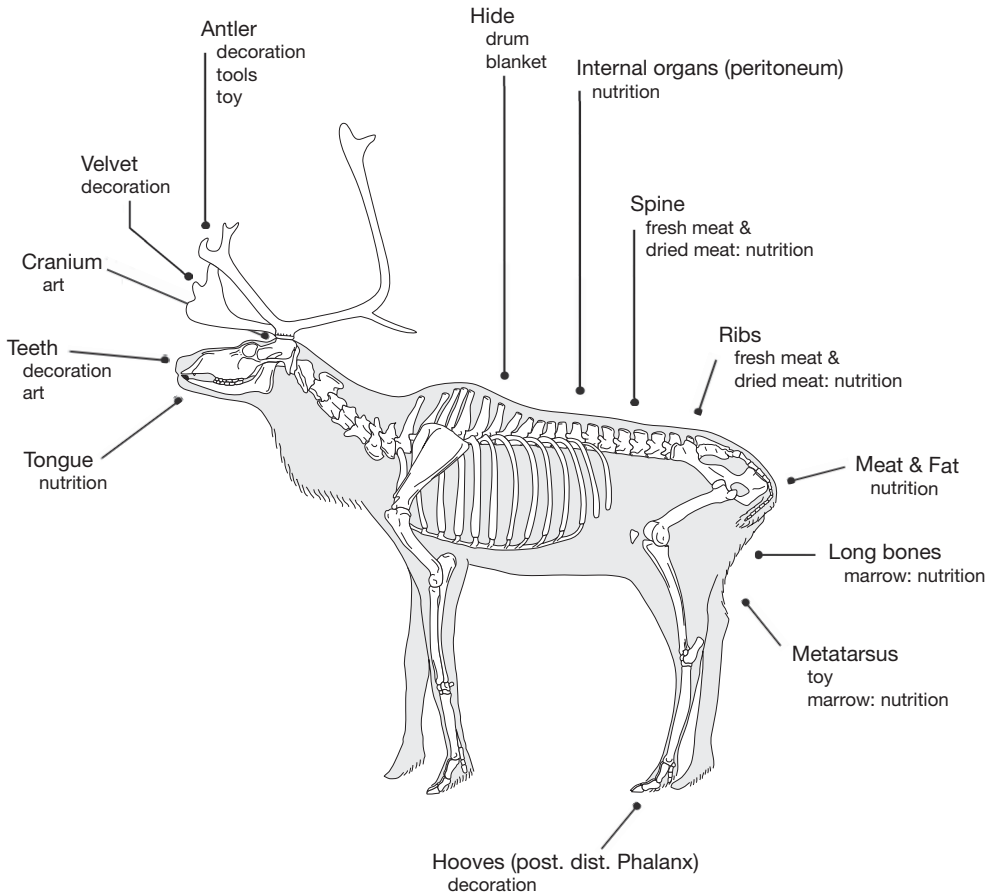


FIG. 6. — Caribou utilization in Angujãartorfiup Nunã after 2000 AD. (*Rangifer tarandus* after Beauval & Coutureau © 2003, Archeozoo.org)

specific hunters. In addition, preferences and tastes seem to have played a significant role in the selective use of different parts of the caribou and contribute to variations in the overall picture. During the first half of the 20th century, the most important goal of all the caribou hunters was the procurement of food. In addition to their energy value, another important motive of all the hunters was to provide a change in diet from the otherwise predominantly marine diet. The choice of clothes and materials also changed during this time. A few of the older Greenlanders still used hides for clothes and parts of the caribou for tools up to the middle of the 20th century. However, some of the hunters of the older generation no longer had this knowledge.

The use of parts of the caribou for tourist purposes did not yet play an important role during the middle of the 20th century. At the beginning of the 21st century, it had gained in importance, but was still unimportant for the majority of the hunters. In contrast, the production of art for personal use was continuously practiced, although not by all the Greenlanders we interviewed. The diverse information about the utilization of caribou in a West Greenlandic population that still has strong hunting interests during the 20th century and the beginning of the 21st century, could suggest that similarly diverse behaviours ruled in the past where hunting played a greater role than it does today. However, it may be that today's variety conveys a

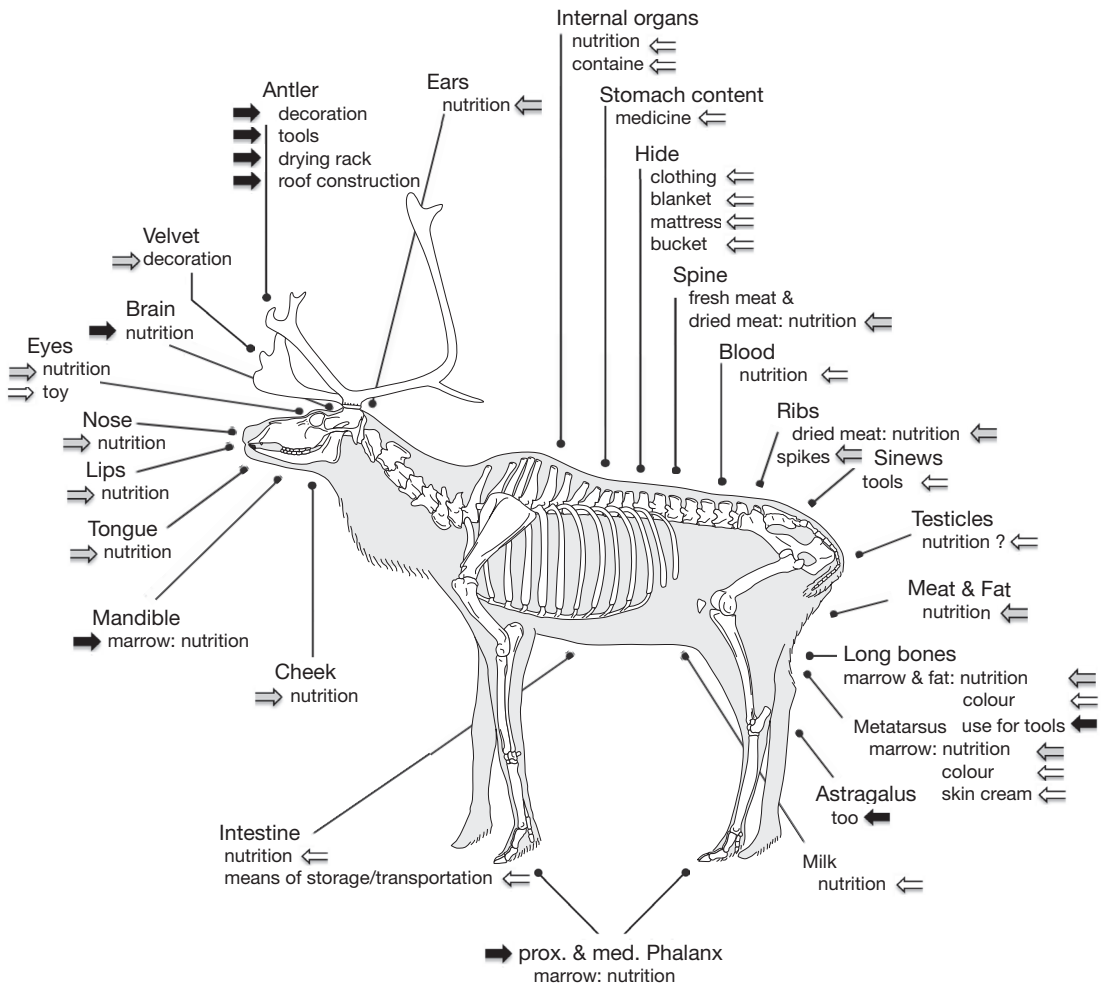


FIG. 7. — Archaeological verifiability of the utilization; black arrows: archaeologically verifiable; grey arrows: partially archaeologically verifiable; white arrows: archaeologically unverifiable. (*Rangifer tarandus* after Beauval & Coutureau © 2003, Archeozoo.org).

false impression and that behavior in the past was less diverse due to other factors.

ARCHAEOZOOLOGICAL APPLICATION OF THE INTERVIEW DATA

Various aspects of the utilization of caribou outlined above would be visible in the archaeological record under some circumstances, while in contrast others would not be visible at all. *Archaeologically verifiable aspects* would be those utilizations that would survive because they are associated with more durable materials. This would include, for example, the

use of antler for tools, art, decoration, toys, drying racks, or as roof frameworks (Figs 7 and 8: black arrows). The use of bone fat and the marrow can be indicated by the smashing of associated bones into small fragments, accompanied by the typical features of fresh fractured bone (Binford 1981: 178; Lyman 1994: 316-318, 320; Turner 1993; Villa & Mahieu 1991: 34; Villa *et al.* 1986).

Partially archaeologically verifiable aspects

They are utilizations where the use could be interpreted by cut marks (Fig. 7 and 8: grey arrows). This

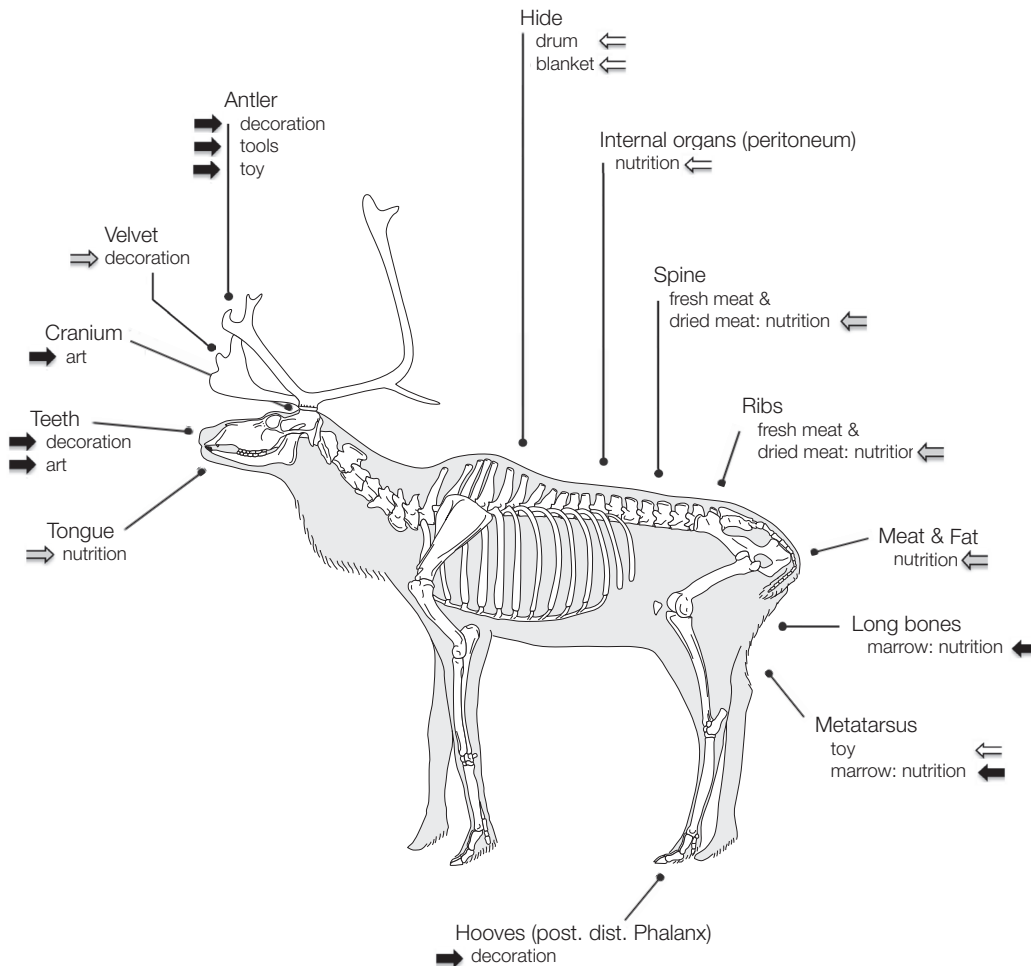


FIG. 8. — Archaeological verifiability of the utilization; black arrows: archaeologically verifiable; grey arrows: partially archaeologically verifiable; white arrows: archaeologically unverifiable. (*Rangifer tarandus* after Beauval & Coutureau © 2003, Archeozoo.org).

includes the use of meat, fat, nose, lips, tongues, fat of eyes, and velvet. However, skillful removal of these parts would not necessarily leave cut marks (Pasda 2009; Pasda 2012: 119), which means that in the case of a lack of cut marks the utilization could not be seen archaeologically.

Archaeologically unverifiable aspects

They include the utilization of the internal organs, stomach contents, peritoneum (*Omentum majus*), sinews, metatarsal marrow for tool preparation, intestines, testicles, milk, blood and eye-balls (Figs 7

and 8: white arrows). Cut marks that would occur in the process of the removal of the hide would only show the removal of the hide, but not whether it was used or not. The hide is always removed in the same way. Thus, the use of the hide could not be proved conclusively, even if there are clear cut marks.

In summary, many details about the utilization of the caribou which were learned through the interviews can potentially be detected by archaeozoological analyses, however others would clearly remain undetectable.

The next step is to apply these results to archaeofaunal samples from an ongoing project in the summer camp Angujaartorfik in central West Greenland containing recent, subrecent and older archaeological structures.

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