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## 3

## Did the Medieval Norse Society in Greenland Really Fail?

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The most famous "archaeologist" of our time, Indiana Jones, said it succinctly: "If you are searching for truth, you must consult the Department of Philosophy; in Archaeology we deal in facts." Probably unintentionally, the film's script writer singled out the central issue in all research. Realities are manifest in archaeological digs, for example, but responsible interpretations of these discoveries depend on the filters they must pass through. One such filter is the knowledge at the archaeologist's current disposal, not the least of which are the scientific tools available. It must be clearly understood that archaeology and history are continuous processes, constantly revised as new information comes in. Except for the fact that we shall all die sometime, there are few ultimate certainties in the world, including in archaeology and history.

### COLLAPSE IN THE PAST AND PRESENT

This essay will focus on archaeology and history, on finding a grand design in details, on the relevance of using the past to draw conclusions intended for our own time, on human responses to environmental challenges, and on the possibility that these responses may lead to environmental and social change. In considering these questions, we need to keep in mind that major contours or themes are made up of many small factors, and that oversimplifying those connections and factors will inevitably produce results that at best are inadequate and at worst wrong and misleading.

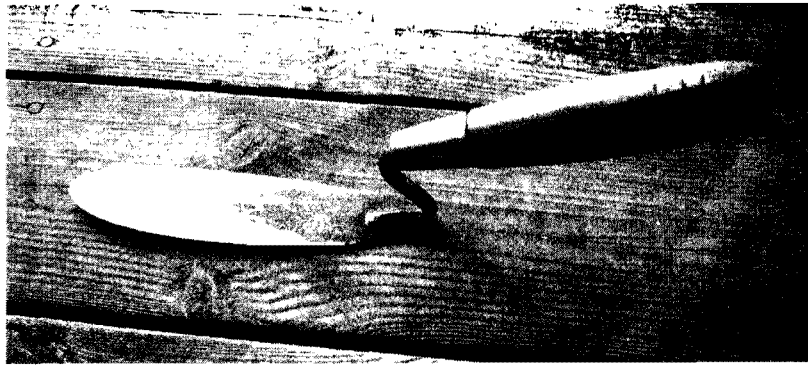


FIGURE 3.1 A simple trowel in the hand of an archaeologist is used to discover facts and conditions of long-forgotten human lives. (Photo by J. Berglund)

Throughout history, from antiquity until the present, numerous writers have tried to fit past events into easily understood narratives. However, the past differs from the present in that learned people of the past had limited knowledge of the world; the world known at the time was only a small part of the globe. Imagination filled in the gaps. When venturing beyond the known world, a traveler might encounter monsters with two heads, a one-legged creature with a foot so large it protected its owner from the sun, cyclops, and other monstrous beings. In the words of the Swedish historian Dick Harrison, such stories were the equivalent of today's comic strips and science fiction about creatures in outer space. The perspective has changed, but the lack of knowledge involved is the same.

For examples from the twentieth century, one may point to works such as the German philosopher Oswald Spengler's *Untergang des Abendlandes* (Decline of the West), published right after World War I and notable for a cultural pessimism that predicted the western world's decay.<sup>1</sup> After thoroughly analyzing the various great cultures in world history, Spengler reached the conclusion that all cultures go through cycles of rise, flowering, and decay. Such a philosophy of history had already been heralded by the eighteenth-century historian Edward Gibbon in *The Decline and Fall of the Roman Empire*.<sup>2</sup> In six volumes, which constituted his life's work, Gibbon covered thirteen centuries of history.



FIGURE 3.2 "Odd persons." (Cosmographiae Universalis 15.14; courtesy of Skapelsens Geografi)

Inspired by Spengler, the English historian Arnold Toynbee wrote *A Study of History* in twelve volumes, published between 1934 and 1961.<sup>3</sup> His work points out that the dynamics at work in any kind of change are determined by the nature of the environmental challenge and by the human cultural response to it.

These works have subsequently been joined by others, with popular histories in particular published practically on an assembly line, which in some respects is a welcome development because it reflects a broad public interest in history and in the past. Among recently published books in this genre one might mention Mark Kurlansky's *Salt*, which seeks to understand world history by focusing on one of the smallest of macroscopic molecules, namely, sodium chloride.<sup>4</sup> It is a splendid example of using a tiny component as a window on a large picture. Another example of this approach is Jared Diamond's *Collapse*, his grand attempt to explain why civilizations have disappeared and why conditions here on earth developed as they did.<sup>5</sup>

However, as professional historians and archaeologists, we must insist that, at a minimum, our labors in the field, in archives, and in laboratories be respected and the results of our work correctly rendered. Certain works that fail to meet these criteria must be consigned to the twilight zone between fiction and science. Discovering factual mistakes in one's own subject of professional expertise is a major problem, because it produces distrust of statements made about other topics outside one's own area of expertise.

Returning to Spengler and Toynbee, we may recall that Spengler's analysis ends with his conviction that ruin is the inevitable outcome of a civilization's cyclical movement, while Toynbee believed that finding the right belief system might maintain the proper balance between environmental challenges and culture.

We all know the expression that trees do not grow to heaven, and scholars must certainly take care that "something" does not become "too much." If we go to the Old Testament, the story about the Tower of Babel may be understood as saying that "something became too much." The writer of Ecclesiastes cautions that "there is a time for everything." In short, the ancient cultures of the Near East already had an eye for the problems that Spengler and Toynbee encountered in their work.

Why do we occupy ourselves with historical research, and what drives our interest in past events? In his book *Collapse*, Diamond repeatedly claims that archaeological research has value today, and to some degree this is true. For instance, a Danish archaeological work about Islamic water-lifting wheels had a decisive influence on the present ability to supply water within a developing country in Africa. I might also mention that studies of the Medieval vegetation in southern Greenland have singled out problems that one would want to avoid in modern farming – a topic to which I'll return later in this chapter.

By focusing on many concrete practicalities, however, Diamond overlooks an important detail, namely, that archaeological research offers more than demonstrable utility. All people have an urge to know about the past, where one comes from and what sort of events have brought us to the present. How did people think in the past, what made Paleolithic humans paint representations of their world in inaccessible caves in France, Spain, and central Europe? As *Homo sapiens*

we are related to them, and although the message they painted has been lost to us, we share their yearning for explanations, for understanding. The human memory is short; it does not take many generations to forget even major events unless these have been anchored in pictures or texts. An archaeological excavation is both a picture and a text, but it is only a part of the "past present" that we attempt to approach and to understand.

Archaeologists primarily uncover objects that depend on appropriate conditions for their preservation, but our most important concern is usually with the context in which the objects are found. One might say that an excavation always has both a contents side and an interpretive side, which may be roughly divided into a quantitative part and a qualitative one. One could also distinguish that which can be measured and weighed and that which may "only" be interpreted. However, there is good reason to be aware of the danger that as soon as something may be expressed numerically, it becomes truth – what one might call conjuring with numbers. The oversimplification that is apt to follow is often what is most offensive about popular writing. One example of this is the attempt in Diamond's *Guns, Germs, and Steel* to quantify food production in terms of the number of kilometers of farmland added per year.<sup>6</sup> It is important to bear in mind that numbers, too, must be interpreted. Humans are fickle creatures, and the world in which their actions take place is equally unpredictable. One of our duties as archaeologists and historians is nevertheless to try to explain change, cause, and effect. Some people claim that there is no such thing as history and future, that strictly speaking there is only an eternal present. As investigators, we bring the former present into our own present, and the question is whether we can understand the former present without basing too much of our interpretation on our own present.

If archaeology is regarded as having practical value today, the implication is that the past to a large extent resembles the present. However, a number of circumstances tell us that this is not the case. For instance, it might be pointed out that the world's demography has changed and that we now face climate changes that, probably for the first time in history, are partly the result of human activity. We have it in our power to destroy life here on earth several times over by means of nuclear weapons, but it is also in our power to alter this situation – if the will is there. But do we have that will?

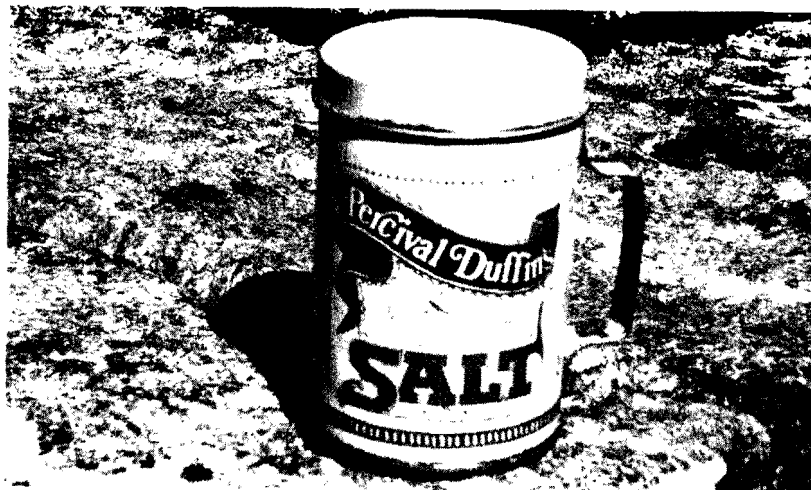


FIGURE 3.3 Salt sprinkler. (Photo by J. Berglund)

#### A SHORT ARCHAEOLOGY AND HISTORY OF GREENLAND

I have almost thirty years of experience with archaeology in Greenland and have, as the former associate head of Greenland's National Museum and Archives, worked for a number of years to promote the preservation of open-air historical monuments. My specialty is the study of Norse Greenland, which applies to the period between 982 C.E. and the last part of the fifteenth century, when southern Greenland was populated by Nordic people, primarily from Iceland. This new society consisted of two settlements: the northerly and smaller Western Settlement, located in the area that today constitutes Nuuk Municipality, and the Eastern Settlement, which was the largest and most southerly community. Both settlements were positioned between 60 and 65 degrees north latitude and were separated by a distance of more than 600 kilometers.

With many ruins from an almost intact Medieval society, Greenland has from the eighteenth century to the present been a focus of archaeologists, particularly by Danish investigators, but lately including researchers from other nations as well. Together with Norway and Iceland, Greenland came under Danish hegemony in 1387. The Norse community lay deserted by the end of the fifteenth century. There was no contact with either Norway or Denmark from then until

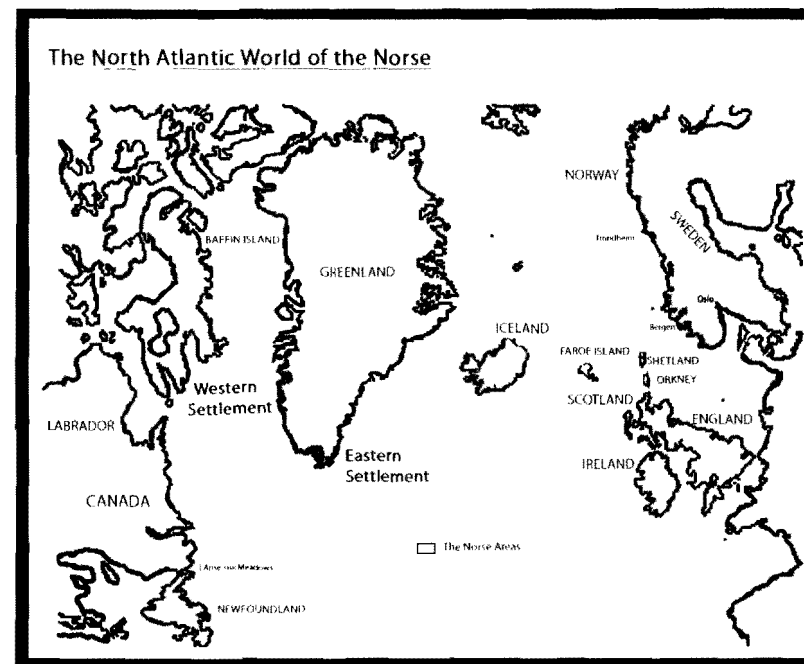


FIGURE 3.4 The Norse sphere of interest in the North Atlantic covered an area from Scandinavia through England, Ireland, Orkney, the Hebrides, the Faroe Isles, Iceland, Greenland, and the areas around Newfoundland. This is the western world of the Vikings within which they traveled and dominated. (Prepared by Pablo Robles)

1721, when the Danish-Norwegian missionary Hans Egede stepped ashore on Greenland's west coast, in the island-studded region just outside the present capital of Nuuk. He came to convert the Catholic Norse he expected to find there, but as they had long since vanished, he turned his attention to the Inuit.

Faint as it appears to have been, the memory of Norse Greenland never vanished completely. During the sixteenth and seventeenth centuries a number of expeditions were sent to the waters off Greenland, especially from Denmark, England, and Holland. Those who succeeded in getting ashore met only Inuit people. In the seventeenth and eighteenth centuries the hunt for whales switched from the waters around Spitsbergen to Greenland, and lively contact and barter ensued between Greenland's Inuit people and the

foreign whalers; this lasted into the eighteenth century. What we can conclude from testimonies from these travelers and whalers is that the Inuit hunting people, known as the Thule culture, had spread over Greenland in the interval between the exodus of the Norse people in the last part of the fifteenth century and the arrival of the missionary in 1721. Further, we can conclude that the Greenlanders of today are descendants of the Thule culture that in the (European) Middle Ages came to Greenland.

From the end of the eighteenth century, Greenland had colonial status, a position it maintained until 1953, when it became a county within Denmark. That status lasted until 1979, when Greenland obtained home rule as a separate nation, just like the Faeroes Islands. (Iceland had declared its independence in 1944.) The population of Greenland today is around 57,000.

Until 1979 Greenland's archaeology was handled by the Danish National Museum, after which the Greenland Home Rule Government assumed responsibility for historic resources. This change led to the creation of local museums in all of Greenland's eighteen municipalities as well as of a main museum in Nuuk, and to legislation for monument protection and museums. This was of considerable benefit to archaeological work and also meant that the Greenlanders began to take an active part in these efforts. A milestone in Danish-Greenland museum cooperation was reached with the repatriation of museum objects from the Danish National Museum to its Greenland counterpart. This work was completed in 2001, when the last object was transferred. By that time more than 35,000 pieces had made the return trip across the Atlantic to Greenland.

#### WHAT HAPPENED TO GREENLAND'S NORSE?

As I said before, the Norse settlement of southern Greenland has been the subject of intensive research. The chief questions occupying scholars and others from far and near are what happened toward the end of the community's existence and what ultimately became of its inhabitants. Attempted answers have involved speculations as diverse as degeneration, pirate attacks and subsequent abductions (e.g., to the Canary Islands to serve as slaves), emigration to America, extermination by the Inuit, intermarriage with and



*Nr 52. Et angreb af idlegge - Nordermænd.*

FIGURE 3.5 Inuit attack on the church of Hvalsey, woodcut by the Greenlandic artist Aron from Kangeq, 1822–1869. (Courtesy of the Greenland National Museum & Archives)

absorption by the Inuit population, reduced contact with the rest of the Norse world, and emigration as a response to climatic changes. This last hypothesis is the one that most scholars are currently addressing.

Other important questions have been raised concerning the settlers' adjustment to their new environment and, last but not least, about their ability to influence their physical surroundings in the long run, including whether environmental events may have been beyond their control. Current research also concentrates on the society's structure, its possible trading contacts with the Inuit, its relationship with the Church, and its apparent conservatism as reflected in archaeological finds and in the ruins themselves.

It is possible to gain a comprehensive view of both the size and reach of this Norse society established in a small part of the world's biggest island. The literary sources about the colonists are sparse, but in comparison with other immigrant populations in Greenland, such as the people from the Saqqaq, Dorset, and Thule cultures who arrived from Canada, the Norse are not anonymous – we are practically on a first-name basis with many of them. Norse Greenland

society is a tangible phenomenon beginning and ending within a period of about 500 years. While Toynbee called it "an abortive Scandinavian civilization,"<sup>7</sup> it has frequently been pointed out that it lasted longer than the United States has existed as a polity, to give an example. It is not correct to regard the Norse society in Greenland as a failure, because it endured for as long as its inhabitants could manage the conditions they were given.

#### INUIT-NORSE RELATIONS

It is a recurring theme in several popular works that hostile Inuit contributed in a major way to the depopulation of the Norse settlements. The Western Settlement closed down first, toward the end of the fourteenth century, and the Eastern Settlement about a century later. Sources from the time telling about hostile Inuit are few; the most famous conflict with native peoples is the altercation with the inhabitants, probably Beothuk, in the new lands to the west (namely, North America) – Markland, Helluland, and Vinland – as reported in *Flateyrbók*, composed around 1200 and thus penned more than 200 years after the events themselves took place. These lands are also described in the "Saga of Erik the Red." Despite those conflicts, the Norse maintained contact with the lands to the west. Although we don't know for how long, they even built a base camp – scarcely a dismissive gesture – at L'Anse aux Meadows on the tip of Newfoundland's northern peninsula.

One may wonder if the resources at the disposal of the Norse simply did not suffice for yet another colonizing venture. Continuing contact with the New World is indicated by archaeological finds, such as the discovery of hair from bison and brown bear during the excavation of "The Farm beneath the Sand" at the heart of the Western Settlement. It is likely that people from Greenland sailed to Canada for lumber and other products for as long as they possessed ships that could negotiate the Davis Strait. One might add that these voyages to the other side of the Davis Strait, as well as hunting expeditions to North Greenland, emphasize a dynamic that was driven by the wish to improve their society's economy and probably also by a good degree of curiosity.

Another description appears in the report about the situation in Greenland that the Norwegian priest Ivar Bardarson gave to the Bishop of Bergen around the middle of the fourteenth century. According to this story, the Western Settlement was now deserted, and the Inuit occupied the entire area. The original document is lost, but, judging from the surviving accounts, Bardarson had told his story to someone who then wrote it down, perhaps a long time later. This leaves room for possible misunderstandings. An Icelandic annal from 1379 notes that the Inuit had been attacking the Norse, killing eighteen men and capturing two boys.

Greenland myths and tales collected in the nineteenth century also tell about conflicts between the two peoples. In this case, however, we are dealing with an oral tradition in which those who passed the stories down through time may have added a little here and subtracted a little there. For example, there is a story about how the Inuit overran the farm at Hvalsey and burned the Norse alive in their houses. When the farm was excavated in 1935, however, there was no carbonized layer or any other indication of a fierce fire, from which one must conclude that in this case the story or myth was not tied to actual events.

A different and rather more fanciful tale of violence appears in *1421: The Year China Discovered the World* by Gavin Menzies.<sup>8</sup> Among other accounts, Menzies tells about a visit by a large Chinese fleet to the Hvalsey Fjord, where the Chinese not only distributed their DNA among the local population, but threatened it with cannons. That story takes us far into the aforementioned twilight zone.

We are, so to speak, faced with two different ways of reconstructing an event: from parchment and from memory and storytelling. While we cannot say that the Inuit story is mistaken, it probably ought not to be interpreted literally. A similar event may have taken place that, for the benefit of later generations, was then associated with a well-recognized location where Norse people were known to have lived. The story's metamorphosis may come from a storyteller's device we also know from the Icelandic sagas about Greenland, in which the story's setting might be merely a product of the mind, but garnished with familiar place names to make listeners feel at home.

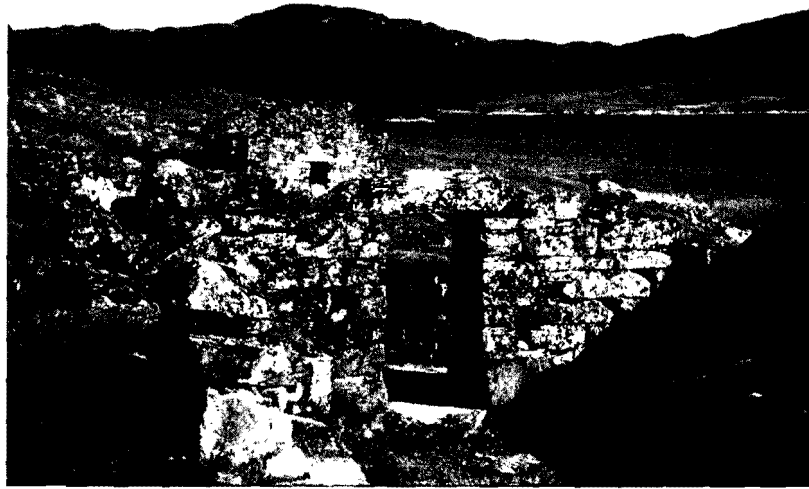


FIGURE 3.6 Ruin of the church of Hvalsey seen from the west through the entrance of the festival hall that belonged to the surrounding farm complex. The church probably was erected at the beginning of the fourteenth century and is the best-preserved medieval building in the Norse North Atlantic area. (Photo by J. Berglund)

The long and the short of it is that we must take the few sparse reports to be evidence of contact between the two groups of people. The problems are with interpreting the stories, which give rise to a number of unanswered questions. Accepting the stories at face value means accepting that encounters between the two peoples were invariably hostile. The Norse name for the Inuit, *skraelings* (a sick, weak person), also seems to suggest a somewhat arrogant, condescending attitude. Contact need not always have been confrontational, however; a look at the dissemination of news in our own time shows a parallel in that it is most often the dramatic events that make the headlines, rarely or never a story about peaceful coexistence. The Norse attitude toward the Inuit probably had its root in the difference between Christians and non-Christians, but that circumstance would not necessarily lead to conflict.

Normally contact between two parties is manifested archaeologically by finds of objects from both sides of a relationship. Such objects are extremely scarce in material from the Norse ruins in

both the Western and Eastern settlements, while, conversely, they are somewhat more numerous in Thule Inuit ruins. In both cases the artifacts give the impression of having served as a kind of souvenir. Norse items have been found in Thule culture ruins in High Arctic Greenland and Canada, which reflects a meeting of some kind, at least an encounter with objects from an alien culture. These artifacts may, of course, have come from an actual encounter, but they may just as well have been obtained by trade or by plundering abandoned Norse home sites. Until new archaeological or historical discoveries shed further light on this question, the answer must remain open.

We do see that the Thule culture Inuit spread down along Greenland's west coast during the fourteenth century, possibly reaching the mouth of the Narsarsuaq Fjord – the Western Settlement's outer limit toward the Davis Strait – as early as the beginning of that century. If seen in conjunction with an ongoing Norse exodus, the Thule people's advance could be interpreted as possibly having contributed to a decision by the Norse to abandon their farms and go elsewhere.

#### ADAPTATION AND SUBSISTENCE IN GREENLAND'S MEDIEVAL PERIOD

It is interesting that in recent popular works concerning the Greenland Norse, their society is often described as being at the point of collapse, as if their resources were fully consumed every year. If the situation had been that terrible, they would surely not have hesitated to reemigrate. Descriptions of that kind most likely reflect modern preoccupations. Social and material collapse is dramatic and can be made to serve as a parallel to worries of everything in our own day. It is far more rewarding, however, to examine how the Norse adjusted to the conditions in their new land. Were there great differences between Greenland and their homeland? Did they gain anything by moving to Greenland? The immediate answer must be both Yes and No.

Back home in Iceland, land had been growing scarce, and a shortage of farm property and a growing population must be considered a powerful incentive to seek new land in the west. Although that may seem like a momentous decision, if we view the Norse North Atlantic region as a whole – from the entire Norwegian coast to the Faeroes, Shetland,



FIGURE 3.7 Sheep grazing on a mountain pasture in the Qollortoq Valley in the core area of what was once the Eastern Settlement. (Photo by J. Berglund)

the Orkneys, and Iceland – it takes on the character of a large “fjord system” where people moved around freely, and where Greenland simply represented a westward expansion. With this image in mind, it is not difficult to comprehend a moving away from Greenland again, because that, too, would have taken place within the “local region.”

One of the immediate advantages the settlers found was an unoccupied country with plentiful resources. Fine pastures could be exploited up to 600 meters above sea level, and there was game of every sort from ptarmigans (a medium-sized game bird in the grouse family) to reindeer, fish, and seal, as well as prestige game such as polar bear and walrus. At first, the climate was relatively mild, but it was to cool down beginning in the mid-thirteenth century until the Norse population left at the end of the fifteenth century.

The settlers brought with them a mental and physical farming culture that they now needed to repot in new soil. For the first time, domestic animals were imposed on Greenland; for the first time, Greenland’s environment was indirectly exploited by farm animals such as cows, sheep, and goats. So far, so good. In time, it turned out that cows required too many resources, and to counteract this

situation, the cow population was reduced in favor of smaller animals like sheep and goats. It is likely that only the large and medium-sized farms continued to keep a few cows.

If we look at the buildings, we see that large common rooms reflecting the concepts settlers had brought with them from Iceland eventually become smaller, and one may suppose that this development was a response to gradually cooling conditions. Next, we may turn to the pastures that provided the basis for keeping domestic animals. Near the farms we find fenced-in home fields, while areas farther away provided mountain pastures for summer farming. An example is known from the Western Settlement of soil improvement done by spreading mixed farm waste. The Norse also developed a unique watering system based on adjustable canals, laced across their home fields and connected to water reservoirs at higher elevations. Similar arrangements are not known from Iceland in the same period, and it may well be that the theoretical background for these engineering works came from educated men in the service of the Greenland Church.

Of lesser magnitude are the examples we have of the inhabitants’ skill in replacing metal with bone and horn in a number of everyday objects. From both of the settlements we have examples such as arrows made from reindeer antlers, a lock and an axe blade made from whale bone, and belt buckles and sewing needles made of bone. Rather than regard these articles as a sign of want, one might consider them proof of imaginative use of the raw materials at hand.

It has long been a mystery why so few fish bones have been found in Greenland archaeological excavations. Some authors have suggested that there was a taboo about eating fish, an explanation that naturally offers an immediate solution to the problem. However, fish remains have always been present in excavated material, only in small quantities. Of course the Norse Greenlanders ate fish. The fjords and the ocean constituted a limitless resource, and eating fish was a tradition all over the Norse world. A recent excavation in the Western Settlement uncovered parts of a net made of baleen (whalebone), which may well have been the remains of a fishing net. Radio-isotope analyses performed in the last few years on human bones from Norse graveyards, in both settlements, tell a clear story about what people ate and in what quantities. Here there is no possible doubt: they ate





FIGURE 3.8 Artifacts made of reindeer antlers as a substitute for or a supplement to iron: (top) a door hinge and (bottom) a collection of arrows for hunting.

fish. These analyses also show that, as time progressed, a greater proportion of the food consumed was marine, especially fish and seal. This can only mean that supplies of food caught or grown on land decreased and were compensated for by increasing the proportion of food from the sea.

In connection with the mystery of the missing fish bones, I might add a story about an older Norwegian biologist I encountered during the excavation of the well-known “Farm beneath the Sand.” We had just finished digging out a quite large vessel made of steatite, and when the biologist saw it, he said that he was familiar with that type of vessel from his childhood in northern Norway. His grandparents

had collected the scraps from fish dinners in just such a vessel, and when it was filled, they boiled the fish bones into a nutritious mass that they fed to their handful of cows during the winter. Perhaps the explanation for the missing Norse Greenland fish bones is that the animals were fed the scraps, which had been rendered completely unrecognizable to archaeologists and osteologists.

#### CONSIDERING SUCCESS AND FAILURE OF THE GREENLAND NORSE

Even this brief overview should demonstrate that the Norse Greenlanders without a doubt were competent farmers who knew how to adjust to changing circumstances in their subsistence, to the extent that it was within their power to do so. Diamond claims in *Guns, Germs, and Steel* that the Norse community was unable to maintain a food-producing society, and that the society itself was too small and too impoverished to survive in the long run. However, this must be regarded as a “truth” in need of strong modifications. As noted earlier, the Norse Greenlanders had no problem with changing from a mainly terrestrial diet to a predominantly marine one. Their society survived for precisely as long as that was possible without sinking below what was considered an acceptable status. The Norse left the Western Settlement toward the end of the fourteenth century, while the Eastern Settlement was abandoned at the end of the fifteenth century, having outlasted the Western Settlement by a century. That is a long time, long enough to produce up to four additional generations, and longer than several twentieth-century European states have lasted. With regard to food production, it is a matter of record that during the five years that Greenland was cut off from Danish supplies as a result of World War II, sheep farming in Greenland, combined with hunting and trapping, to a high degree sustained the population.

Greenland’s population in 1945 numbered 21,412 – more than four times that of the maximum population estimate for the Norse period. Moreover, neither stories nor archaeological excavations indicate any panic or social unrest of the sort Diamond imagines drove the Eastern Settlement toward collapse. On the contrary, everything points to a gradual and leisurely depopulation, a situation that also seems to apply to the Western Settlement. Archaeological



FIGURE 3.9 Ruin of the church “Undir Höfði” built around 1300 C.E. The facing gable was a wooden construction that has now disappeared. During the centuries following abandonment, the ruin was buried under drift sand that still covers the surrounding area. The creek to the left is now hardly navigable because of drifting sand; the buildings in the background belong to a modern sheep farmer. (Photo by J. Berglund)

investigations of several Norse farm sites in the Western Settlement have uncovered nothing to suggest that the last inhabitants starved or froze to death, which is the interpretation Diamond has chosen to read into the archaeological reports. It is also impossible that Ivar Bardarson traveled from farm to farm to gather corpses in different stages of decomposition and carry them many miles to the nearest churchyard.

It is quite telling that during our Greenland Norse excavations we mostly come upon deliberately discarded objects. Furthermore, as already noted, there is no great wealth of Norse objects in Thule house ruins. The Norse took with them whatever they could carry when they left. Nor have archaeological discoveries included anything suggesting conflict, such as fires or bodies left in the Norse ruins. In one instance only was a body found at a farm in the Eastern Settlement, and the circumstances surrounding that find are unclear.



FIGURE 3.10 Ruin of the church of Herjolfsnes situated at the southernmost part of the Eastern Settlement; the first port of call when arriving from the east. The church probably was erected in the thirteenth century as one of the biggest in the Eastern Settlement. Today only the foundation is left and parts of the collapsed surrounding wall. Around the church was the burial ground, excavated in 1921. Because of the permanently frozen ground, the largest known collection of medieval clothing was discovered here. By 1921 a large part of the churchyard had disappeared into the sea. To the right, the sea is continuously eroding the shore, a process that began in the Middle Ages and now has reached the church itself. (Photo by J. Berglund)

Survival in Greenland's communities was naturally contingent upon self-sufficiency in food production. It has already been noted that a two-pronged economic approach was used, relying on hunting and fishing on the one hand and on domestic animal products on the other. Flesh-based protein came mostly from hunting and fishing, while farm animals such as cows, sheep, and goats primarily supplied fresh milk for various dairy products. In addition, sheep and goats yielded wool for the cloth production that took place on all the farms. Briefly stated, each farm was a production unit, and its products were both exchanged among the farms and used as payment in kind for church taxes.

All this activity naturally depended on the availability of enough land and water to permit domestic animals as well as to supply all

the wild game and fish the population needed. It was quite a different matter to make sure that the farm animals had sufficient fodder to see them through a winter, and that a farm was properly situated to provide a good hay harvest from fields surrounding farms and to give the animals an opportunity to graze somewhat farther away, as late into the year as possible. That takes us to a different discussion, namely, about whether the farmers contributed to a deterioration of their physical environment with their activities.

#### SLOUCHING TOWARD “COLLAPSE”

Particularly in the Eastern Settlement’s central region, a number of investigations of soil and sedimentary conditions have been made, with core samples taken from lakes, wetlands, and areas near farm houses. The results of these analyses show that soil erosion speeded up after settlement began in 985. Additional analyses of teeth from domestic animals demonstrate increased wear from the presence of sand in their food. One may draw two possible conclusions from this: either the pasture areas had become so worn down that the animals’ food inevitably became mixed with grains of sand, or else strong winds had carried in sand from other areas in the region. The destruction of vegetation meant that scrub, which normally acted as windbreaks, no longer prevented the upper soil layers from becoming exposed to wind and to subsequent erosion, which accelerated as an increasing number of plants were removed by grazing.

This scenario may have been initiated by the farmers’ burning off the scrub vegetation, followed by trampling and grazing by domestic animals, but such an interpretation is not without ambiguities. Recent climate research suggests that strong winds characterized the warm period before the cooling trend that culminated in the Little Ice Age, about 1430–1850, and that this windy period peaked just before the cooling began in the fifteenth century. That means that the conditions for erosion were present during the entire period of Norse tenure, from which we might conclude that there were two different contributory causes, both pointing in the same unfortunate direction. Examples of erosion and increasing sand deposits are known from many locations in the Eastern Settlement, including from the vicinity of a big farm and a church constructed around 1300. The

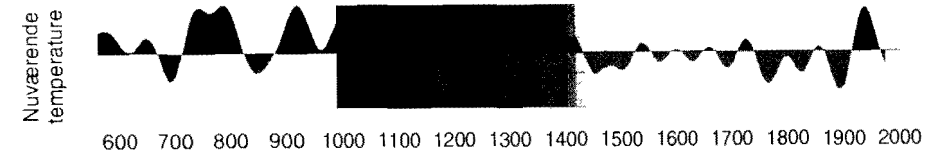


FIGURE 3.11 Historical climate changes from 600 to 1900 C.E. The Norse period in Greenland, roughly 1000 to 1400 C.E., took place during a relatively warm period, while the retraction of settlement occurred a cold period. The predominating cold in the fourteenth century can be seen as a factor contributing to the abandonment of Norse settlements. (Courtesy of *Grønlands Forhistorie*, Copenhagen, 2004)

implication is that growing deposits of wind-blown sand began in this part of the community sometime in the fourteenth century, because it is unlikely that anyone would have established a farm with a church in an area that was already plagued by sand deposits.

The next inevitable question must address the number of domestic animals that may have been roaming the outdoors. Although there is evidence of stables and folds with room for quite a number of animals, it is difficult to know how many at any time were actually out grazing and contributing to the ongoing erosion. Modern sheep farmers in southern Greenland have learned to alternate between resting and active pasturage, but we have no way of knowing if the Norse farmers used the same approach. However, the number of sheep in southern Greenland today is far greater than it ever was during the Middle Ages, in 1991 about 40,000, and that brings with it a much greater threat of erosion. The likeliest explanation for the Medieval situation is probably that it was chiefly caused by burned-off vegetation cover followed by the effects of wind and weather. However that may be, blowing sand and erosion must have been detrimental to farming.

One factor over which humans had absolutely no control was the rising sea level. This development is seen most markedly at the southernmost Norse Greenland church, Herjolfsnaes, where the ocean today reaches all the way to the actual ruin, and most of the churchyard has been eroded by the sea. Another example is Sandnes church in the Western Settlement, where both church and churchyard today are entirely covered by water and sand. The situation was not that dire in the Middle Ages, although it has nevertheless been estimated that



FIGURE 3.12 A fight scene between two fighters equipped with swords and shields and therefore unlikely to have been a Norse fighting with an Inuk. The scene is carved into a weaver's sword of bone. (Courtesy of Meddelelser om Grønland)

the sea level rose at least one meter while the two Norse settlements were still viable. In fact, sedimentation cores obtained from the two main fjords in the Eastern Settlement show "submerged land," in the sense that shoreline farms innermost in the fjords may have lost as much as 250 hectares (about 618 acres) of pasture. Humans could do nothing to stop it.

It is thus possible to identify two direct threats against the Norse farming society's subsistence: one that the farmers themselves may have increased, the other one completely beyond their control. Apart from those developments, there is the unspecified menace of the advancing Thule people. It has been suggested that the Norse were powerless against this menace because they lacked military training and weapons. No weapons have been found, however; it is surely obvious that the Norse would have taken such belongings with them when they left the country. They were nevertheless no strangers to armed conflict. A battle scene was carved on a small piece of bone, but, significantly, the scene does not depict a Norseman against an Inuk.

## GREENLAND IN THE NORSE WORLD

I have not yet touched on another important aspect of Norse Greenland society, namely, its connection with the rest of the North Atlantic world and with Europe. We know that at least for the first centuries the settlers maintained a lively contact with the east, not the least after the establishment of the Greenland bishopric in 1124. Their clothing styles, tools, runic inscriptions, and religion also show clearly that they remained a part of the wider Norse cultural orbit. Objects found during archaeological excavations do not indicate any effort to learn new ways from the Thule people they may have encountered, nor did any Eskimo words find their way into the Old Norse vocabulary.

The Norse preferred the familiar, and their orientation was exclusively to the Nordic world. Their society was strongly hierarchical, with powerful farmers or chieftains as its decision makers and with their Church as part of the power structure. Stories and archaeological finds alike show that this was a community with distinct social strata, and the impression is confirmed by radio-isotope analyses demonstrating that those in the top stratum were better fed than the rest. Finds of keys and locks on several farms further underline social stratification on a microplane – some people had the power to exclude others. From its top to its bottom, this society was essentially constructed like those elsewhere in the Norse world.

Relations with Europe were connected to the Church and to trade, and the most valuable Greenland product was ivory from the tusks of the walrus caught farther north in western Greenland – a commodity seen as a particularly weighty argument for maintaining a trade connection with Europe. This trade appears to have ceased in the fourteenth century. There are two differing views on why this happened. One says that, by the fourteenth century, Europeans had easier access to African ivory, which meant dwindling interest in fetching ivory in Greenland by means of a long and dangerous voyage. The other view holds that although Arab merchants and middlemen had never been able to satisfy the European demand for ivory, interest in Greenland trade and contact eventually diminished. So on top of internal difficulties we might add external problems.

The Greenland Church province had never been a particularly desirable one; the bishops were often absent from the country for

years, and once appointed, bishops might take a long time to show up. In 1370 the last resident bishop died and was not replaced, although bishops for Greenland continued to be appointed for some time.

We may add yet another danger to the several already discussed as threats to the Norse Greenlanders, and that is the problem of maintaining status and an acceptable lifestyle. While they had successfully managed the switch from terrestrial to a marine diet, they might have had some difficulty with accepting a lifestyle that was not primarily based on traditional farming, if it came to that. This was not a problem for the Inuit people because their lifestyle was solely based upon hunting, and the consequences of the changing climatic conditions did not disturb that.

It is probable that emigration went on for some time, but we don't know exactly where the settlers went. As the conditions for their continued existence were altered, however, leaving their farms became the only alternative. One may therefore with some justification claim that their emigration was a rational response to a challenge with unacceptable alternatives.

Nobody deliberately chooses to fail, and neither did the Norse Greenlanders. Their choice was the right one for several hundred years. What happened later could not have been foreseen, and is not the consequence of choosing to fail.

Translated from Danish into English by Kirsten Seaver.

## Notes

\* I was born in Copenhagen in 1938 and graduated from the University of Copenhagen in 1976 with an M.A. in European prehistoric archaeology. As a student I joined archaeological expeditions in the Middle East, Denmark, Sweden, and Greenland. After participating in several expeditions to Greenland for the Danish National Museum, I accepted a position as head of a provincial museum in southern Greenland in 1981.

Eleven years later I moved to Nuuk, the capital of Greenland, and was employed as an archaeologist at the Greenland National Museum and Archives. In 1998 I became vice-director of the institution, a position I held until my retirement in 2004. Apart from fieldwork, my main occupation was to administer the law of protection of monuments in the open landscape: that is, ruins or remnants from the Inuit and Norse past. I also took part in museum exhibitions and public outreach.

My own research is focused on Norse culture and landscape. Throughout my years in Nuuk I gave courses on these subjects at the

University of Greenland, Ilisimatusarfik. For me the relation between culture and landscape is one of the most fascinating areas in archaeology. In the field it is a matter of looking and listening and having the patience to let the landscape open up.

1. Spengler 1991/1926.
2. Gibbon 2005.
3. Toynbee 1987/1947.
4. Kurlansky 2005.
5. Diamond 2005.
6. Diamond 1997.
7. Toynbee 1987/1947: vol. 1, 177.
8. Menzies 2003.

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## A Reader's Guide to Medieval Norse Society in Greenland

For a comprehensive and general view of the Norse period in Greenland good choices are the following:

- H. C. Gulløv (ed.), *Grønlands Forhistorie* (Copenhagen, 2004), and Seaver A. Kirsten, *The Frozen Echo, Greenland and the Exploration of North America ca. A.D. 1000–1500* (Stanford, CA, 1996). For background on demography, archaeology, the connections between Greenland and Europe, the relations between Inuit and Norse, and the Norse legacy from the point of view of a modern Greenlander, see the Smithsonian Institution catalog *Vikings: The North Atlantic Saga* (Washington, DC, 2000). An investigation on the use of land can be read in Svend E. Albrethsen and Christian Keller, "The Use of Seater in Medieval Norse Farming," *Arctic Anthropology* (1986): 91–107. The sagas of the journeys to North America are told in *The Sagas of the Icelanders* (New York, 2000), pp. 626–674. The first positive find of Norse presence in North America is related by the

Norwegian archaeologist Anne Stine Ingstad in "The Norse Settlement at L'Anse Aux Meadows, Newfoundland," *Acta Archaeologica* (1970): 109–154.

The question of the destiny of the Norse population is discussed in Joel Berglund, "The Decline of the Norse Settlements in Greenland," *Arctic Anthropology* (1986): 109–135; Andrew J. Dugmore, Christian Keller, and Thomas H. McGovern, "Norse Greenland Settlement: Reflections on Climate Change, Trade, and the Contrasting Fates of Human Settlements in the North Atlantic Islands," *Arctic Anthropology* (2007): 12–36; and Naja Mikkelsen and others, "The Norse in Greenland and Late Holocene Sea-Level Change," *Polar Record* (2008): 45–50. The ongoing discussion of what happened to the ivory trade is presented by Else Roesdahl in "Walrus and Ivory," in *Select Papers from the Proceedings of the 14th Viking Congress* (Tórshavn, 2001), pp. 182–191, and Kirsten Seaver, *Maps, Myths and Men: The Story of the Vinland Map* (Stanford, CA, 2004).

## 4

## Calamities without Collapse

*Environment, Economy, and Society in China, ca. 1800–1949*

Kenneth Pomeranz<sup>+</sup>

## PROLOGUE: WHAT CHINESE COLLAPSE?

China raises problems for anyone trying to divide societies into "winners" and "losers." For most of history, it would have to be considered an unusually "successful" society if we use either the criterion of power or that of average material living standards. But during much of the nineteenth and early twentieth centuries – a blip in human history, but a critical formative moment for Western social science – China was in turmoil, and the assumption that China had "ultimately" "failed" became commonplace in Western histories. Today any such failure looks much less "ultimate": although China remains much less prosperous than most of Europe and North America, it has caught up considerably in living standards (especially life expectancy), and it is certainly among the world's great political powers. Consequently we have a series of narratives about Chinese "failure," which are products of a very particular moment.

Jared Diamond, who certainly takes the long view, avoids treating China as simply a "loser" – for the most part, it figures as part of the agricultural, literate, state-building "Eurasia" that emerges as the winner over the first 90 percent of *Guns, Germs, and Steel*.<sup>1</sup> But in his final chapter Diamond does use China as a foil for European success – and does so by adopting an outdated and largely discredited variety of conventional wisdom. His argument takes a fifteenth-century incident that was actually of limited significance and makes it emblematic of an

# Questioning Collapse

*Human Resilience, Ecological Vulnerability,  
and the Aftermath of Empire*

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