



Industrial extraction of Arctic natural resources since the sixteenth century: technoscience and geo-economics in the history of northern whaling and mining



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Abstract

A comparative perspective is applied in analyzing the large-scale utilization of Arctic natural resources driven by economies and agents outside the Arctic and subarctic regions. This paper focuses on whaling since the sixteenth century, and on the development of mining from the nineteenth century to the present. The European sector of the Arctic and subarctic regions including the high-Arctic archipelago of Spitsbergen provides the main cases for this study. The social, economic and environmental contexts and consequences of northern industry are considered; as part of this line of research, the little-known symbolic and geopolitical uses of industrial field installations are considered.

The northern transfer of Western technoscience, including scientific navigation, colonial geography, steam-propulsion and aviation, often failed initially despite much enthusiasm and underwent painstaking on-site modification. In this industrialists and other Arctic entrepreneurs attempted to control a complex combination of factors including the sparse local population, the lack of major infrastructure, and the environmental impact of their own businesses. This combined with the social problems of keeping peace among collaborators and competitors under isolated and lawless conditions. In conclusion, the greatest challenges to industry in the Arctic throughout modern history were local and social rather than climatic or geopolitical.

Indigenous interests were long disregarded while Arctic seas and some land areas were exploited by Western nations as unregulated commons. Not only nature and local inhabitants but also the industry itself suffered from increased scales of operations. The record of Arctic extractive industries over four hundred years reveals a need to develop and share relevant environmental and socio-economic knowledge and to develop international regulations and instruments such as industry certification to guarantee sustainable northern resource utilization.

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For centuries, the Arctic has provided raw materials for outside commercial ventures. This article analyzes the interplay of ideas and material culture in the large-scale, often capital-intensive industrial extraction of northern natural resources that was initiated from the centers of the world economy. Considering such industry over an extended period opens opportunities to reflect on the current increasing global interest in expanding raw material extraction and sea transport in the Arctic.

The research presented in this article stems from an International Polar Year 2007–2009 program in historical and industrial archaeology that analyzed the Large-Scale Historical Exploitation of Polar Areas (Lashipa) from the sixteenth century to the present. The program focused on five interrelated research problems. First it

aimed to inventory industries' motives for venturing to the far north, in order to describe how the drivers behind large-scale northern industry evolved within changing geo-economic, scientific, and environmental contexts. Because on-site adaptations and adjustments were necessary to fit operations to the local geographical, environmental, and political challenges—and these were difficult because of limited or non-existent infrastructure and the absence of a local labor market—we analyzed field evidence of such efforts to adapt technologies, settlement plans, and architecture to the local environment. The third research problem concerns the combination of resources and practices that industries employed in the geo-economic competition over natural resources and to obtain geopolitical influence in the Arctic. The fourth focus of

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Lashipa was on the environmental impact of raw material exploitation.¹ And the fifth issue concerned the role of science in Arctic industry. We use the term technoscience to designate the combined system of technological and scientific knowledge that Westerners attempted to apply to large scale industrial projects in the high north from the nineteenth century onwards.²

From a comparative perspective, differences and similarities are visible among industrial actors and nations and across historical contexts. Lashipa studies have found instances of path-dependence as well as innovative patterns in the way in which Arctic industry affects its environmental and local socio-economic settings. In this article, we compare differences in technological style and geo-economic approach between three groups of industry actors: the Arctic rim regional economies—mainly the Nordic countries; major Western industrialized nations; and Russia, which, during the era of the Soviet Union, developed a strong commitment to the Arctic. We take as a special case the uninhabited *terra communis* of the Spitsbergen islands in the European Arctic that became a Norwegian national possession under the conditions of the Spitsbergen Treaty in 1925 after a prolonged period of unregulated whaling and mining involving many nations. As discussed in the introduction to this special feature of the *Journal of Historical Geography*, such comparative history can assist in evaluating the current increase in geo-economic interest in the Arctic and contribute to a more balanced long-term view.³

Whaling in the Arctic

Large scale exploitation of living marine resources in the Arctic started in the early 1600's, at the Spitsbergen archipelago. By this time European whalers had been active in increasingly northern locations for almost a century. By the 1530s, Basque whalers had established themselves on the coast of Labrador in North America. Driven by high prices for whale oil, they hunted northern right whales and especially grand-bay or bowhead whales, using hand-held harpoons thrown from open boats. They flensed the whales alongside their ships and extracted the whale oil from the blubber at whaling stations that they built along the coast. During the 1560s and 1570s, the industry grew; the Basque whalers operated at least 12 whaling stations and a whaling fleet of more than 15 ships.⁴ The Basque whaling industry in North America lasted almost a century, until the early seventeenth century. Several factors have been invoked to explain its decline, including depletion of the whale stock (an explanation which can be challenged, which we will return to later), the rise of whaling in the European Arctic in the early 1600s, competition from Dutch and English whalers on the European market, and political turmoil in Spain.⁵

In the European Arctic, large-scale whaling commenced roughly a decade after the Dutch explorer Willem Barentsz discovered the uninhabited archipelago Spitsbergen (called Svalbard in Norway since 1925), in 1596. Spitsbergen is situated within range of Arctic ice fields, approximately 900 km beyond the North Cape of Scandinavia. The northernmost coast of Spitsbergen reaches 80° N. In 1607 and 1610, explorers from England reported many whales in the bays of Spitsbergen. In 1611, the English Muscovy Company began whaling in the waters of the archipelago, and in 1612, Dutch whalers followed; in the following years, the English and Dutch were joined incidentally by whaling entrepreneurs from the Basque country and Denmark (Fig. 1).⁶

Driving forces

The Arctic whaling industry was primarily driven by rising demand for whale oil in Europe. Industrial growth, and with it the use of oils and fats in cloth, leather, soap, and candle manufacturing drove up demand and prices.⁷ Demand for whale oil grew further early in the seventeenth century when high prices on feed grains made the production of vegetable oils and fats uncompetitive. However, only when the supply of whale oil from the Basque producers dried up did merchants from England and the Netherlands begin bowhead whaling in the Arctic. These merchants organized their whaling activities in chartered companies (the Muscovy Company and the Noordse Company) that built whaling stations on the west coast of Spitsbergen to process blubber into oil and to harvest baleen. The companies made agreements with each other concerning catches and prices, and limited the number of ships involved.⁸ When the charters expired in the 1640s, whaling became open to all, and the number of ships increased substantially in response to world market prices for whale oil and the costs of freight.⁹ In the second half of the seventeenth-century baleen increased in value; however, during the entire period of Dutch whaling, the meat was not consumed. Not even the whalers ate it.

Another driving force behind early whaling was the growth in the geographical knowledge of the Arctic. Barentsz' discovery of Spitsbergen in 1596 and new voyages produced much detailed geographical and biological information. From approximately this time onwards, a constellation of factors drove Western exploration. National governments began to look beyond their domestic affairs and national borders to open long-distance trade routes and engage in naval competition and early-colonial expansion. Second, more or less nationally homogenous loyal groups of ship-owners, investors in trade and various industrial entrepreneurs supported the ship masters and whaling captains upon whose skills they depended to transfer whaling activity to the high north. Third, the new

¹ For information on the Lashipa program, see L. Hacquebord (Ed), *Lashipa: History of Large Scale Resource Exploitation in Polar Areas*, Groningen, 2012.

² S. Sismondo, *An Introduction to Science and Technology Studies*, Malden, 2008; D. Ihde and E. Selinger (Eds), *Chasing Technoscience: Matrix for Materiality*, Bloomington (IN), 2003.

³ For a critical discussion on this, see A. Stuhl, The politics of the 'new north': putting history and geography at stake in Arctic futures, *The Polar Journal* 3, 1 (2013) 94–119.

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⁵ R. Grenier, M.-A. Bernier and W. Stevens (Eds), *The Underwater Archaeology of Red Bay: Basque Shipbuilding and Whaling in the 16th Century*, 5 Vols., Ottawa, 2007.

⁶ L. Hacquebord, *Smeerenburg: Het Verblif van Nederlandse Walvisvaarders op de Westkust van Spitsbergen in de 17e Eeuw*, Amsterdam & Groningen, 1984; T.B. Arlov, *Svalbards historie: 1596–1996*, Oslo, 1996; D. Sahrhage and J. Lundbeck, *A History of Fishing*, Berlin and Heidelberg, 1992, 131–166; C. De Jong, *A Short History of Old Dutch Whaling*, Pretoria, 1978.

⁷ Hacquebord, *Smeerenburg* (note 6).

⁸ Hacquebord, *Smeerenburg* (note 6), 50 ff.

⁹ J.R. Bruijn and C.A. Davids, Jonas vrij: de Nederlandse walvisvaart, in het bijzonder de Amsterdamse in de jaren 1640–1664, *Economisch- en Sociaal-historisch Jaarboek* 38 (1975) 141–178.

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