

“Mamiya Rinzō and the Japanese Exploration of Sakhalin Island: Cartography and Empire”

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In this article Walker argues that Japanese imperial processes began much earlier than other scholars often assume; the Tokugawa government was well aware of various geo-political threats that certain countries posed to Japan's national defense in the early 19th century. Specifically, both the Qing Empire and Russia were poised to claim sovereignty over Sakhalin, an island in the North Pacific, through their competing attempts to map the territory. Walker examines the journeys of several Japanese cartographers, especially Mamiya Rinzō, who were commissioned by the Tokugawa government to map Sakhalin first and determine the borders between Japan and Russia. Walker argues that, while European countries were often “centers of calculation” that sought to amass scientific knowledge for the benefit of imperial projects, the Japanese cartographic efforts were an attempt by a “periphery of calculation” to rival these claims.³ The Tokugawa government's mapmaking activities were not only a way to fend off European colonialism, but used the same technology as the Russians, which allowed Japan to claim that it was a scientifically advanced society and therefore had a right to control Sakhalin. According to Walker, mapping distant lands was “an inherent exercise in state logistical power” because it showed that the state was strong enough to amass the manpower and ships to embark on such endeavors. The imperial processes that would enable Japan to successfully incorporate the southern part of Sakhalin (called Karafuto) into the Japanese empire in 1905 were thus set into motion almost a hundred years prior to Karafuto's colonization.

Throughout the 19th century the contested borders of the Kuril Islands, Hokkaido, and the Ryūkyū Kingdom provoked similar fears that if Japan did not act to claim sovereignty over these territories, other nations would. Walker goes on to discuss how Japanese surveyors tried to define the level of civility or barbarity of other people by examining differences in customs and practices. Early modern Japanese constructed notions of ethnic identity through a delineation of concentric circles, in which the people who were the furthest away from the Japanese core had the most customary differences from the Japanese, and thus were considered the most barbaric. While the Japanese saw these people as Other, in the first half of the 19th century they did not yet share the western analyses of biological race but saw these differences in terms of culture. The western discourses, which emphasized the idea that civilization was tied to race, only began to permeate Japanese articulations of empire in the late 19th century.

³ Walker uses a “center of calculation” to denote an imperial power that was already globally strong and the “peripheries of calculation” to describe territories that had not achieved parity with the imperial powers.

Mamiya Rinzō and the Japanese Exploration of Sakhalin Island: Cartography and Empire**Brett L. Walker****A New Introduction by Brett L. Walker**

Maps can be powerful tools of nation building and empire, and therefore powerful historical sources. Whether they delineate tidal patterns, measure altitude, chart seafloors, identify ethnic communities, or bind nations, maps provide a potent lens through which people view the world and, in turn, spatially contextualize their experiences. Because of their power as historical sources, maps also serve as useful pedagogical devices when teaching about Japan. Recently, major research universities have pushed the importance of “original” undergraduate research. This is complicated if the student’s interest is Tokugawa Japan, because archival documentation is notoriously difficult to read. Maps, however, offer an alternative. Of course, maps – particularly pre-modern maps drawn before the global spread of the cartographic sciences – contain marginal text; but because they are visual sources, they can, with the aid of an adept teacher, appeal to the creative inclinations of a notoriously visually oriented generation. Students learn that maps often represent – and often even drive – major historical events. This is certainly true of the maps drawn by Mamiya Rinzō, a collection of beautifully preserved pieces held at the Resource Collection for Northern Studies (Hoppō Shiryō Shitsu) at Hokkaido University.

Because they are such rich sources, and because there are so many kinds, maps can be interpreted in numerous ways. They can depict cadastral surveys; they can also depict Buddhist cosmologies. Bruno Latour argued that maps, when crafted by European imperialists according to the “language of science,” and then dispatched to “centers of calculation,” concentrated scientific knowledge in the hands of imperial states. In this process, local “beliefs” (of native groups) were transformed into normative “knowledge” to be deployed by European states in elaborate colonial projects. Indeed, with the crafting of maps according to the language of science, the “implicit” understanding of locals became “explicit” information used in Europe’s capital cities; and “local” ways of knowing succumbed to European “universal” knowledge. In this manner, maps were stable and movable inscriptions that charted the pathways and borders of the colonial enterprise. Michael Bravo, by contrast, has cautioned that even “stable, portable” maps, ones drawn according to the language of science, need to be seen as the results of the cross-cultural production of knowledge. European mapmakers negotiated with locals for access to geographical information. Even as the product of cross-cultural negotiations, however, they still proved compelling tools in the anticipation and creation of empire.

J.B. Harley argued that maps represent a kind of historical language, one that speaks as loudly as written documents. Sometimes they can speak even louder. Maps can be tricky, however, because, as a product of cartography, they can be disguised as just another “valueless” or “objective” science. Historians have become adept at interrogating and deconstructing written documents, but they have proven less adept at exposing the “historically specific codes” contained in maps. Because maps serve as an “authoritative” resource, one often controlled by the state, they were used to delineate nations and anticipate empires. That is, as Daniel Clayton writes, maps provided the scientific “geopolitical framework” for colonial projects. Mostly, they provided a “geopolitical framework” for nineteenth-century European powers; but China and Japan also deployed modern maps to anticipate their empires.

In this article, which appeared in the *Journal of Historical Geography*, I argue that early modern Japanese maps, specifically those drafted by Mamiya Rinzō (1775-1844) and Inō Tadataka (1745-1818), function in multiple capacities and, therefore, contain layers of “historically specific codes” that, if contextualized properly, enhance our understanding of Japanese history and, more broadly, East Asian history. To begin with, maps by Mamiya and Inō served as spatial parallels of an emerging “national consciousness” in Japan, one that was taking place in “nativist” (*kokugaku*) discursive communities around the country. These national maps, which traced the coastal boundaries of Japan, bound the abstract “collective memory” (as Eiko Ikegami describes it) or the “library of public information” (as Mary Elizabeth Berry describes it) that emerged in the late eighteenth century. In other words, if for “nativist” scholars, imagining the nation meant “restoring” the emperor to power through the study of ancient texts and poems, for cartographers such as Mamiya and Inō, it meant geographically binding (according to global, normative cartographic standards), and thereby delineating, the physical country called Japan. Cartographers, too, imagined the nation, only they did so with maps.



Records of exploration of the Sakhalin and “Todatsu” (eastern Siberia) regions in 1808-09 (Bunka 5, 6) by Mamiya Rinzo, which were presented to the Tokugawa Shogunate

Maps also hastened Japan’s thrust into the modern age and, by anticipating empire and emptying foreign lands of their native inhabitants, facilitated later Japanese colonial projects in the North Pacific. Modern, scientific maps emptied lands of peoples, sequestering this information (peoples’ customs [*fūzoku*], for example) in illustrated ethnographies. Hence, maps vacated

foreign lands, preparing them for occupation. Maps also brought foreign lands to the “centers of calculation,” among which Edo (and Tokyo), not only European capitals, must be included. Maps were brought to Tokugawa policymakers in Edo such as the astronomer Takahashi Kageyasu (1785-1829), who sought information on the borders that separated Japan, Russia, and the Qing Empire. Maps provided Takahashi with a “geopolitical framework,” one different from the Sinocentric tributary order that had dominated East Asian geopolitics for centuries. In essence, Takahashi sought a more modern way of looking at the world. Maps also facilitated the Japanese response to European imperialism by marking the boundaries of Japan in a language that Europeans understood, the language of science; but maps also facilitated Japan’s nineteenth-century move into Sakhalin Island and beyond by anticipating empire.

This article explores these facets of early modern maps, and many others, including where these two mapmakers came from and what their activities tell us about early modern Japanese society. It also narrates the travels of Mamiya and his Sakhalin guides (Mamiya’s partners in the cross-cultural production of cartographic knowledge), as they trod through these cold, northern territories, naming mountains (and thereby possessing them), surveying forests and fisheries (for future exploitation), and tracing the coastline of Sakhalin Island and beyond. Often, historians of Japan reserve discussion of the scientific mapping and surveying of foreign lands for the post-Meiji experience, when Japan imported the modern methods of nation building, industrialization, science, and imperialism. What the maps of Mamiya and Inō demonstrate is that Japan’s lurch into the modern age predates the Meiji Restoration, as does Japan’s emergence as an East Asian imperial power.

Mamiya Rinzō and the Japanese exploration of Sakhalin Island: cartography and empire

Brett L. Walker

Abstract

In 1808-1809, a Japanese cartographer named Mamiya Rinzō (1775-1844) traveled to Sakhalin Island, called Kita Ezo or Karafuto by the Japanese, to map the land and document its inhabitants and natural features. In the seventh month of 1809, according to the lunar calendar, Mamiya arrived at Deren, a Chinese outpost along the Amur River in the Heilongjiang region. When Mamiya mapped Sakhalin and central Heilongjiang, he employed Western cartographic sciences to guard Japanese sovereignty by delineating national borders between Russia, China, and Japan; but he also ‘anticipated empire’ in a manner reminiscent of European powers. His maps placed Sakhalin on a universally recognizable grid and emptied the land of its inhabitants, who were formally relegated to the pages of illustrated ethnographies. Mamiya’s activities, as well as those of cartographer Inō Tadataka (1745-1818), suggest a global early modern experience with cartography and ethnography, one in which Japan emerged as a periphery of calculation and deployed cartographic tools to construct nation and empire.

In 1808, only after ice on the North Pacific began to break apart, a Japanese explorer named Mamiya Rinzō (1775-1844), traveling with his colleague Matsuda Denjir (b. 1769), an ethnic Nivkh guide, and a handful of survey tools, was stopped dead in his tracks at Cape Rakka, on the west coast of Sakhalin Island, by deep, stinking beds of rotten kelp. Reportedly, the kelp covered the littoral landscape for as far as the eye could see and proved, along with cold weather, an

insurmountable obstacle for a survey mission that had held so much promise. The Tokugawa shogun and his chief science adviser, the astronomer Takahashi Kageyasu (1785-1829), had sponsored the mission, seeking to map, with the best survey technologies available, the national boundaries between Japan, Russia, and the Qing empire. Disappointed by the rotten kelp (but certainly not the existence of kelp given the ingredients of Japanese cuisine), Mamiya boarded a small boat and paddled westward, some 2000 m or so, off the coast and into the strait. Once there, he carefully positioned the craft and gazed northward and confirmed, as no other explorer had, that Sakhalin was an island and not a peninsula. Eventually, looming signs of Sakhalin's harsh winter forced Mamiya and Matsuda to return southward, but the next year Mamiya traveled alone as far as Deren, a Chinese outpost in Manchuria, making contact with Qing officials and other local headmen and traders.¹

When Mamiya had positioned his small craft in those cold waters, he navigated historical currents both common and uncommon to early modern experiences with the social construction of space. Mamiya's mission to determine borders in the north constituted a calculated shogunal response to the threat posed by Western surveying in the region, an effort to turn European cartographic tools of empire into tools that resisted imperialism by geographically binding and, thereby, cartographically guarding Japan's sovereignty: tools that proved capable of delineating Japan's borders in a manner recognizable and hence more legitimate to predatory Western nations. But Mamiya's scientific maps of Sakhalin proved not only instrumental in defending Japan's sovereignty and regional interests, they assisted with later Japanese claims in the North Pacific. That is to say, Mamiya's maps anticipated Japanese imperialism on Sakhalin in a manner reminiscent of the role maps played in British claims in Australia, India, and the Pacific Northwest of North America.

In the case of Japan, Mamiya's maps evidenced a new manner of viewing national sovereignty and geographic space, similar to what Laura Hostetler has argued of eighteenth-century Qing Chinese cartography. In Mamiya's Sakhalin maps no multiple or overlapping sovereignties existed and they, unlike earlier Japanese maps, could be deciphered by all who knew the language of the cartographic sciences, which made the shoguns covet them for several reasons.² To begin with, Mamiya's use of spatial technologies to delineate borders and anticipate Northeast Asian empire demonstrates that Japan, though not always motivated by the same goals as Western nations, was becoming part of a global early modern order, one where European countries, the United States, and the Qing empire (1644-1911) all deployed similar cartographic technologies in elaborate mapping projects that met the needs of mutually understood national and geopolitical concerns. Importantly, Mamiya drafted maps of Sakhalin simultaneous to Inō Tadataka's (1745-1818) successful effort to map Japan's entire coastline: Mamiya's project illustrates Japan's early anticipation of empire in the north, while Inō's illustrates Japan's cartographic fortification of the nation against the real threat of Western imperialism.

Such maps and, in the case of Mamiya's writings, empirically-generated ethnographies, provided visual representations of Japan's future empire and its people well before the Japanese ever formalized sovereignty over southern Sakhalin in 1905 after war with Russia. Placing the Qing empire, as Hostetler has done, and Tokugawa Japan within a global cartographic order serves to complicate the notion that early modernity (and its accompanying mapmaking projects) remains the exclusive domain of European countries. Western cartographers invented many of the cartographical tools used in China and Japan to map those East Asian realms, but more relevant is that Qing and Tokugawa policymakers invented new ways and discovered new places to

deploy them for their shared nation-and empire-building projects.³

Hostetler also points out that such cartographic projects paralleled the development of an emerging 'national consciousness' in eighteenth-century China. Similarly, Inō's mapping of Japan's coastline and Mamiya's mapping of Sakhalin paralleled the rise in prominence of 'nativist' learning, as represented by such figures as Motoori Norinaga (1730-1801) and Hirata Atsutane (1776-1843), and other 'proto-modern' national discourses, including the politically charged Mito School ideology, which sought to weaken the de-centered Tokugawa feudal order and 'restore' the emperor to his rightful position as ruler.⁴ Nativist scholars focused their considerable talents on parsing early Japanese songs and poems to distinguish them from writings that used Chinese characters, as well as to separate Shinto beliefs from imported Buddhist ones, the Japanese emperor from China's less-majestic 'Son of Heaven,' and Neo-Confucianism from the native stories that, according to Eiko Ikegami, exemplified the Japanese 'collective memory'. Ikegami argues that, through 'tacit modes of communication' that took place in public spheres outside the feudal order and that transcended the 'status system,' the Japanese forged mutual notions of public 'civility' in the early modern period and, in turn, developed a 'proto-modern' national consciousness by evoking the shared aesthetic networks and cultural assumptions in which all Japanese participated.⁵

Mary Elizabeth Berry calls these networks the 'library of public information,' which, after the advent of Tokugawa rule, 'created from fissured parts an integrally conceived "Japan"'.⁶ Of course, maps proved an important part of this process. For nativist scholars, however, the unifying symbol of 'aesthetic networks' or the 'library of public information' was the Japanese monarchy, which, they submitted in the early nineteenth century, needed to be 'restored' to power.⁷ Mapmaking was part of this project to imagine the nation: Japan's late eighteenth and early nineteenth-century 'collective memory,' or nascent national consciousness, did not manifest itself in the flamboyancy of the crashing symbols and trumpeting brass of a European-style military parade, but rather more serenely in the national networks of *haikai* poetry circles that brought together people from all walks of life to share in Japan's 'tacit modes of communication'. Such aesthetic modes of communication set Japan apart from its European counterparts to be sure, but they proved no less instrumental in the development of full-blown Japanese nationalism after the Meiji Restoration of 1868.

Late eighteenth and early nineteenth-century maps of Japan visually represented the spatial borders of Japan's 'collective memory,' or what Benedict Anderson called an 'imagined community'.⁸ Inō and Mamiya scrapped the traditional Japanese practice of writing extensive text or drawing taxonomic representations of barbarian 'others' on maps themselves in favor of longitudinal and latitudinal lines and other elements of the 'language of science,' ones more common to the global early modern community than to earlier Japanese practices. Ethnography, in turn, became characterized by empirical observations rather than second-hand information about fantastic 'barbarians,' mostly derived from older Chinese encyclopedias.

In other words, on Mamiya's maps, the 'land' mapped cartographically became disassociated from the 'people' documented ethnographically; through separate categories of scientific knowledge the land was emptied, placed on a grid for all cartographically literate people to read, and then made available to policymakers in Edo (present-day Tokyo), the Tokugawa capital.⁹ As Hostetler writes in the case of China, 'Both in the formation of modern nation-states and in expansion abroad, territory came to be viewed more and more as a resource to be dominated or

controlled by a political center. The land took on a value separate and distinct from those who occupied it'.¹⁰ For his part, Mamiya defined ethnic groups not according to their relationship to the land, but according to important Confucian concerns, such as their various rites and rituals.¹¹

As with most eighteenth and nineteenth-century Japanese who wrote about their travel experiences, Mamiya focused on the 'customary' differences of Sakhalin people from Japanese, because highlighting such differences served as another powerful spatial tool, just as the compass, astrolabe, and map did. One aspect of Mamiya's travel writings that differs from the European experiences with cartography and ethnography is that descriptions of different peoples and places still served as a spatial device, particularly when most people in Japan, including the Tokugawa shoguns, remained more or less illiterate to the intricacies of the newly imported European language of science. Generally, what they understood was this: the more differently people looked and acted from themselves, particularly when it came to food and hairstyles, the more distant they must be, because 'Japanese-ness,' as we shall see below, was largely (but of course not exclusively) defined in spatial terms, as proximity to the ancient capital and cultural center of Kyoto (Japan's aesthetic hub and where the emperor resided) and a handful of other Japanese cities.

When he drew his maps, Mamiya abstracted Sakhalin from its local milieu and positioned it on a recognizable grid and its inhabitants within ethnographic categories so that it could be seen from a decidedly early modern vantage point. Mamiya initiated a 'process of valuation' that was the product of early modern imperial values and not native Sakhalin or even native Japanese ones, and such values framed the parameters of maps, ethnographies and, by extension, the organizational grid modern nations came to impose on their known world. The Mamiya expedition presented new ways of assigning value to Sakhalin, ones that contributed to nineteenth-century Japanese nation-building and, later, empire-building in the North Pacific.¹² Once Mamiya's cartographies and ethnographies were brought back to Edo, and then disembodied and calculated, Tokugawa officials proved able to 'see like a state,' as James Scott describes this simplified, modernist vantage point, on the northernmost boundaries of the Tokugawa realm.¹³

Mamiya's science

Most Japanese cartographers involved with the exploration of Sakhalin (and Japan's early modern cartographic projects in general) came from the peasantry. In Japan, the Neo-Confucian ideology adopted by the Tokugawa shoguns in the seventeenth century established a natural hierarchy that placed the 'samurai' at top of the social heap, while the 'peasantry,' 'artisans,' and 'merchants' descended in that order. This brand of Neo-Confucianism, along with Shinto teachings and certain Buddhist creeds, formed the orthodox ideology of early modern Japan.¹⁴ As David Howell explains, the 'status system,' though supposedly static, remained quite dynamic and actually held little weight in Tokugawa legal practice. Often, in legal ledgers of various sorts, peasants, artisans, and merchants comprised the categories of 'commoner,' who were 'townspeople' when in the cities and 'peasants' when in the countryside. Therefore, peasantry, as a status category, needs to be seen more as an occupational title than an actual description of livelihood, because peasants worked many types of jobs.¹⁵ Subsequently, many peasants supplemented their livelihoods through non-agricultural means: this fact made Japan's eighteenth-century commoner status an extraordinarily diverse segment of society.¹⁶

Certainly, this helps explain why a number of explorers who emerged during Japan's age of

exploration—roughly the period from the Tenmei era (1781-1788) through the first decades of the nineteenth century; an age that included Mogami Tokunai (1754-1836), Matsuda Denjirō, Inō Tadataka, Mamiya Rinzō, and others involved with surveying Ezochi (present-day Hokkaido), Kita Ezo or Karafuto (Sakhalin Island), and Chishima (the Kuril Islands)—came from among the commoners. Regrettably, the commoner background that makes Mamiya so fascinating also leaves most of his early life shrouded in obscurity. Historians know one thing for sure: he was born in Kamihirayanagi Village in Hitachi Province (Ibaraki Prefecture) along the banks of the Kogai River (see Fig. 1).¹⁷ His father, Shōbei, reportedly struggled to support his family and so he supplemented his income by crafting iron bands for wooden barrels. Mamiya's humble background evidences the fluidity of Japan's eighteenth-century society, including the ability of commoners to flow into the spatial sciences and other realms that required expertise, whether in the arena of road and dam designs or national mapping projects. It also suggests, however, that rural cultivators possessed knowledge and expertise beyond agronomics that proved useful to the Tokugawa state: the state relied on these rural cultivators for its national mapping projects. In other words, 'seeing like a state' in early modern Japan required a degree of negotiation with knowledgeable rural cultivators.

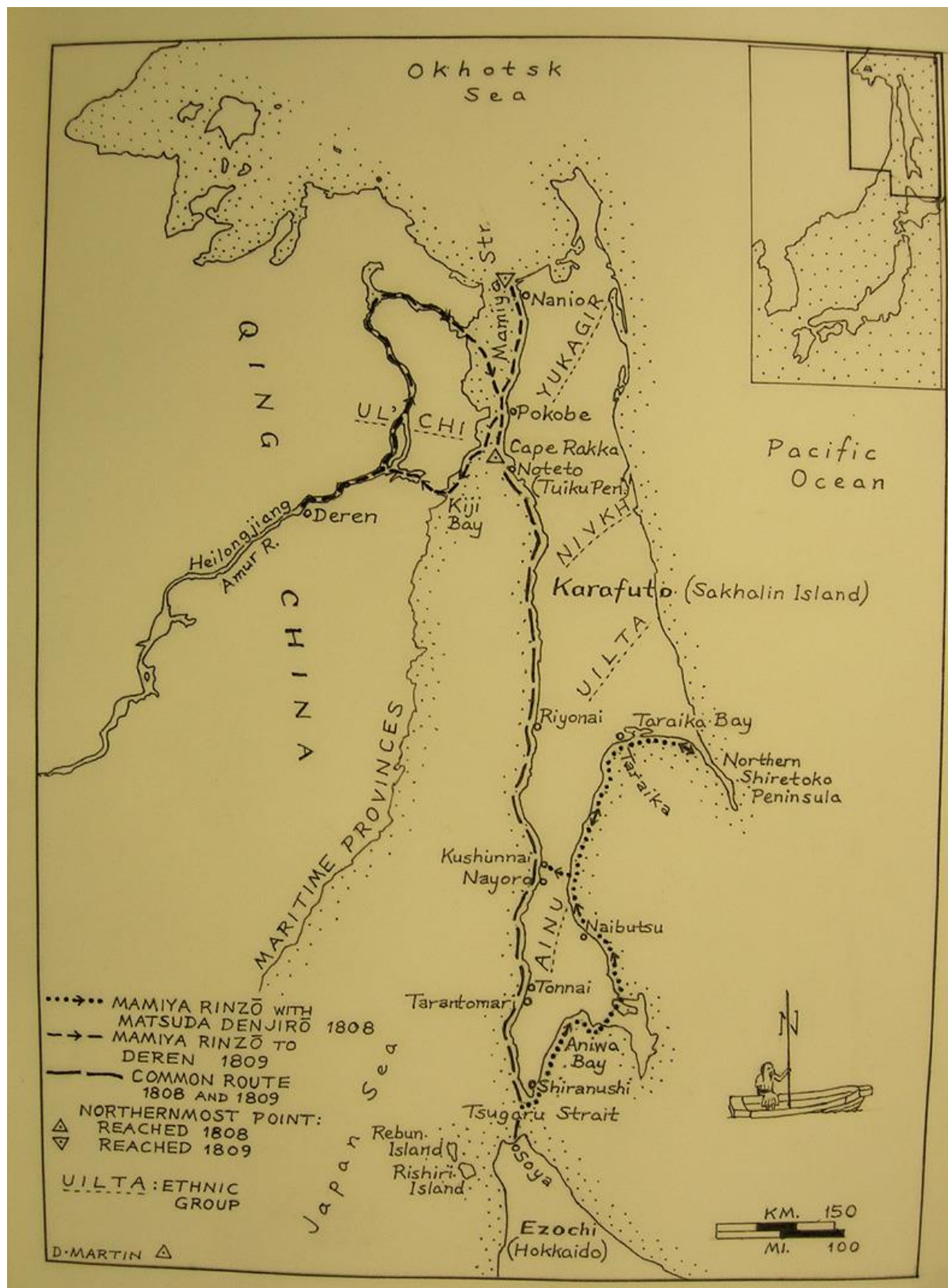


Fig. 1. Mamiya Rinzō's travels on Sakhalin Island and in the Amur River Estuary, 1808-1809.
Map by Dale Martin.

Mamiya garnered a local reputation in riparian engineering. By the eighteenth century, civil engineering in Japan had developed into a sophisticated science, one that principally revolved around *tsutsumi* (dikes, dams, and fortified embankments) construction. Engineers designed *tsutsumi* from soil, clay, and wooden posts and beams and, although solid for a time, they nearly always sprung leaks and eroded, because of the wear-and-tear of water pressure. By Mamiya's day, engineers had started fortifying *tsutsumi* with an elaborate mesh of weight rocks in bamboo baskets supported by even more posts and beams; better designed 'water gates' served to alleviate water pressure and better irrigate even more far-flung paddies. Not surprisingly, the development of Japanese mathematics paralleled such elaborate riparian projects, as *tsutsumi* building necessitated complex calculations regarding water pressure as related to the slope, width, and depth of irrigation channels.¹⁸

While studying at a local village temple, Mamiya demonstrated a talent for mathematics, which played a critical role in his developing skills as a cartographer. Ironically, however, among the many sciences practiced in early modern Japan, the samurai elite held mathematics in the most disdain: Confucian scholars, such as Ōgyū Sorai (1666-1728), churlishly denounced higher mathematics, because of its association with the greedy, bean-counting merchant class.¹⁹ Early on, whatever mathematics the clever Mamiya did know, caught the attention of a traveling Tokugawa 'construction official' when Mamiya became involved with the Oka dam project just east of his home village. Importantly, historians speculate that this official was probably the ethnographer of Ainu 'customs,' Murakami Shimanōjō (also Hata Awagimaru: 1764-1808), whose *Ezotō kikan* ('Strange sights from Ezo Island', 1800) endures as among the best ethnographic renditions of late eighteenth-century Ainu life.²⁰ Around 1784, Murakami had caught the attention of the 'senior councilor' and conservative reformer Matsudaira Sadanobu (1758-1829), who dispatched Murakami to survey the various provinces of the Kantō (the agriculturally rich plain around Tokyo), a mission that lasted until 1798 and produced several surveys.²¹ The region of Shimōsa Province (Chiba Prefecture), where engineers built the Oka dam, was a likely stop on Murakami's itinerary and where he probably met Mamiya.²²

Every spring, during the equinoctial week, locals rebuilt the Oka dam, because it channeled water from the Kogai River and irrigated rice paddies connected to some thirty-three villages in Shimōsa Province; but the dam typically broke apart shortly thereafter. Mamiya impressed the visiting official and accompanied him back to Edo (probably in the early 1790s). After arriving in Edo, Mamiya became an assistant to Murakami and they even lived together for a spell while in the capital.²³ Murakami and Mamiya surveyed together and alone, with the younger Mamiya sent to oversee surveys on Kyushu and Shikoku islands. The *Tōdatsu chihō kikō* ('Travels in the region of eastern Tartary', 1811), Mamiya's main Sakhalin travel narrative—written with Murakami Teisuke (1780-1846), the adopted son of Murakami Shimanōjō, and presented to Tokugawa officials in 1811—explains that

The author of this book, Mamiya Rinzō, was born in Hitachi and came from a peasant household. He departed for Edo where he became an attendant (*zuijin*) to [Murakami] Shimanōjō and with whom he studied geography (*chiri no gaku*). With this geography, he explored between roads throughout the realm; he also knew to discern the local customs of these areas. Murakami, of course, investigated Japan thoroughly, including Hachijōjima, Ōshima, and other islands. Rinzō investigated Kyushu and Shikoku.

Mamiya's later Sakhalin maps, as mentioned, emptied the land of people; but, in his earlier

surveys, the study of ‘geography’, as taught to him by ethnographer Murakami, included the need to ‘discern the local customs’ of peoples. But Murakami’s influence over Mamiya persisted even during the Sakhalin project, principally in the form of separate illustrated ethnographies: investigating the different ‘customs’ of people, whether Japanese or Sakhalin Ainu, became a technique for rendering nation and empire. Direct observations bolstered his ethnographies, such as the *Kitaezo zusesu* (‘Illustrated explanation of northern Ezo’, published posthumously in 1855), which served as an instrument to document the inhabitants of Sakhalin and Manchuria.

In 1799, Murakami and Mamiya traveled together to Ezochi for the first time after the shogunate confiscated control of the island from the Matsumae family, who had overseen Ezochi for two centuries from its southern territory called Wajinchi, or ‘Japanese land’. The shogunate ordered surveys of its newly acquired northern territories.²⁴ While the two stayed near Hakodate, the cartographer Inō Tadataka visited them (see Fig. 2). Later, Inō furthered Mamiya’s education in cartography and lent him important surveying tools (Indeed, we might speculate that it was under the tutelage of Inō that Mamiya began emptying his maps of human taxonomies and relegating the investigation of ‘local customs’ to separate ethnographies.) Himself born a commoner, Inō must have seen a younger version of himself in Mamiya. Before becoming a cartographer, Inō, perhaps Japan’s most famous mapmaker, had served as a ‘village head’ in Sawara Village (Chiba Prefecture) but, at the age of fifty, departed for Edo to study celestial topics with the astronomer Takahashi Yoshitoki and through their studies he had risen to hold samurai status.²⁵ In 1800, Inō began surveys of the Pacific coastline of Ezochi. Seventeen years later, Tokugawa officials ordered Inō to survey the entire coastline of Japan and draw a map of the realm. He surveyed the coast and drew the map; but only after 1821, with Inō’s death, did the monumental ‘Dai Nippon enkai yochi zenzu’ (complete map of greater Japan’s coastline) become available.²⁶ It makes sense that Mamiya assisted Inō with the section on Ezochi, because of Mamiya’s familiarity with the lands north of Japan.²⁷



Fig. 2. The statue of Mamiya Rinzō located at the Mamiya Rinzō Memorial Museum, near his original home at Kamihirayanagi Village.
Courtesy of the Mamiya Rinzō Memorial Museum, Kamihirayanagi Town, Ibaraki Prefecture.

Cumulating and calculating cartographic knowledge

Countries other than Japan sought to accumulate cartographic knowledge of the Japanese archipelago and Sakhalin and their North Pacific environs, which proved one reason Tokugawa officials had sought to generate their own map. In the late eighteenth century, European kings and their cartographers had shown an interest in Sakhalin Island for reasons of commerce and empire. Francois La Pérouse (1741-1788) began surveying the coastal areas around Japan in the late eighteenth century. In 1787, under orders from Louis XVI, he surveyed the northern coastline of Japan, the Maritime Provinces, and the western coast of Sakhalin. He crossed the Sōya Strait (probably the first European to do so) and landed on the Kamchatka peninsula where another adventurer, Jean B.B. Lesseps (1766-1834), transported La Pérouse's invaluable journals back to Versailles, where the Revolutionary Committee published them in 1797.²⁸

La Pérouse navigated these northern waters searching for Sakhalin, an island he knew both as 'Oku-Jesso' ('Inner Ezo,' probably a term learned from Japanese) and 'Ségalien'. La Pérouse instructed his crew to survey the contents of the ocean floor when dredging for oysters and to take depth soundings every half hour; he also fixed his location with a compass, took periodic longitudinal and latitudinal readings, and carefully monitored barometric pressure. Once his crew spotted Sakhalin, they began naming, and hence 'possessing,' prominent natural features. For the 'loftiest of these mountains,' explained La Pérouse, the name 'Lamanon Peak' was appropriate, because it honored the natural philosopher Robert de Lamanon (1752-1787). When La Pérouse named natural features on Sakhalin, he 'effaced local designations and brought those spaces into European circulation for the first time'.²⁹

However, the 'object of our mission,' La Pérouse wrote, was to determine whether 'Jesso,' presumably Hokkaido and Sakhalin, was connected to the Eurasian continent. He never made this determination with his own eyes and instrumentation, but once he landed on the shores of Sakhalin, local islanders assured the cartographer that Sakhalin—the island locals called 'Tchoka'—was indeed separated from Manchuria by a strait that could be navigated by even large ships. When he told local elders that he 'wished them to delineate their country,' the elders did so by drawing decidedly ephemeral maps of their island in the island's tidal sands; they measured distance in relative terms by using hand gestures. Not surprisingly, La Pérouse likened the islanders to 'noble' savages and, not surprisingly, concluded that the 'knowledge of the well-informed class of Europeans is in all points far superior' to that of the Sakhalin natives. The shape of Sakhalin drawn in the sand did not qualify as knowledge for the cartographer: the relative and relational images they carefully traced and gestured with their hands remained useless until they had been placed on a longitudinal and latitudinal grid, 'universalized' according to the global rhetoric of science, and properly processed in the capitals of Europe.³⁰

William Robert Broughton (1762-1821), an English navigator, surveyed northern Japan, the coastline of Ezochi, the southern Kuril Islands, Sakhalin, and the Maritime Provinces between 1796 and 1797. During that time he visited Muroan, a port town in southern Ezochi, where he encountered stubborn, though curious, Japanese officials representing the Matsumae family. He was actually the first European to cross the Tsugaru Strait (separating Honshu and Hokkaido) and, though he surveyed the 'Coast of Tartary' (the northern Maritime Provinces and the western coast of Sakhalin), he erroneously concluded that Sakhalin was connected to the Eurasian continent and gave the waters contained therein the name 'Gulf of Tartary'.³¹ Less than a decade later, Ivan Fedorovich Kruzenshtern (1770-1846), born in Estonia but an admiral for the Russian em-

pire, commanded a vessel, with Nikolai Petrovich Rezanov (1764-1807) on board, that called on the southern port city of Nagasaki hoping, for a second time, to open formal diplomatic and commercial ties with Japan. After being rebuffed by alarmed Tokugawa officials, Kruzenshtern—on his way home—surveyed the coasts of Japan, Hokkaido, the Kuril Islands, and the northeastern coast of Sakhalin; but he proved unable to navigate the Amur River and so he surveyed the region from the south determining, erroneously as well, that Sakhalin was connected to the continent by a reef or sandbar and hence was a peninsula.

According to Bruno Latour, these initial European forays to Sakhalin exemplify the means by which European kings and their experts at the ‘centers of calculation’ sought to cumulate scientific knowledge for the benefit of the state and imperial enterprises. That is to say, mapping distant lands was inherently an exercise in state logistical power, as ships needed to be manned with sailors and expensive instrumentation as well as financed. When La Pérouse landed on Sakhalin on 17 July 1787, he did so because the French king had commissioned him and equipped him with two ships, which weighed heavy with complex instruments of calculation, to determine whether Sakhalin was an island or a peninsula. Shoring up French commercial lanes in the North Pacific depended on La Pérouse’s ability to map the entire Pacific arena, which required knowledge regarding Sakhalin. Latour likens La Pérouse’s two ships to orbiting satellites today, with clocks to measure time and instruments to measure longitude and latitude; botanists, mineralogists, naturalists, and artists surveyed and sketched the island, while cash bought favor, food, and information from local peoples. Despite all this cartographic equipment, however, La Pérouse remained unable to determine for himself whether Sakhalin was an island or a peninsula and he relied on the islanders. Once his information arrived safely in Versailles, La Pérouse made the ‘implicit’ native knowledge of Sakhalin, illustrated by maps drawn in the sand, ‘explicit’ when he placed it on permanent, cartographically designed maps; he made ‘local’ knowledge ‘universal’ in the eyes of cartographers and their state sponsors; and the ‘beliefs’ of natives transformed into scientific ‘knowledge’ to be utilized by Europeans in the creation of empire. Importantly, this transformation from ‘ethno-geography’ to full-blown scientific ‘geography’—turning ‘implicit’ understanding to ‘explicit’ information and ‘local’ understanding to ‘universal’ knowledge—depended on La Pérouse’s ability to transport his surveys and maps back to Versailles, where they could be calculated and cumulated for future use. Indeed, when the next European ships arrived on the shores of southern Sakhalin, this ‘universal’ knowledge made it as if they had been to the island before.

When William Robert Broughton cruised these North Pacific waters ten years later he saw, for all intents and purposes, the most prominent features of Sakhalin for a second time, because De Lesseps, as we have seen, managed to transport La Pérouse’s maps back to Versailles to be calculated. Sketches and ethnographies were included in this information, and so Broughton could better ‘domesticate’ the islanders, because he understood them; they remained frozen in time and space, basically ethnographic relics. With Broughton’s trip, there was, according to Latour, ‘less sounding, less fumbling in the dark’. Latour calls this the ‘cycle of accumulation,’ when cartographic and ethnographic information was brought back safely and placed in the hands of kings and calculators so that, in the case of France, members of the Admiralty could spread out maps and see Sakhalin and arrange expeditions for others to bring back even more information. When cartographers rescaled these maps to conform to the needs of the state and other explorers, writes Latour, the ‘cartographer *dominates* the world’.³²

As Michael Bravo has argued, however, the maps drawn in the sand by Sakhalin Ainu at De

Langle Bay need to be seen not as decisive metaphors for the creation of ‘stable, portable inscriptions,’ as Latour utilizes them, but as the product of lengthy field encounters and the linguistic ‘cross-cultural commensurability’ that occurs between people in order to generate the ‘geographical gift’. That is, La Pérouse oriented himself through ethnographic and linguistic mapping as much as he did through cartography, and he carefully orchestrated his encounters with Sakhalin Ainu in a manner that led to exchanges in knowledge that ultimately determined Sakhalin was an island. Bravo has concluded that the famous map traced in the sands of Sakhalin ‘comes into existence only as an ethnographic exercise in cross-cultural production of knowledge’.³³ Sakhalin field encounters notwithstanding, however, Bravo follows the ‘metropolitan perspectives on science and engineering’ inherent in ‘actor-network’ theory, because, ultimately, the maps do travel to European ‘centers of calculation’. But the case of Mamiya’s Sakhalin maps demonstrates that the metropolitan perspective of ‘actor-network’ theory is not immune from criticism, especially where it is assumed that those metropolitan centers be European ones. Tokugawa officials deployed the same cartographic tools and maps to resist European domination: they turned the science of cartography, with its claim to ‘stable, portable inscriptions,’ against their would-be colonizers by creating competing peripheries of calculation.

In the late eighteenth and early nineteenth centuries, Japanese scholars, many students of ‘Dutch learning,’ became interested in the question of whether Sakhalin was an island or a peninsula; they also sought to determine if the location Japanese called ‘Karafuto’ was the same as what Europeans called ‘Ségalien’ or ‘Sakhalin’. In effect, their interest in Sakhalin hardly differed from those of their European counterparts, though many early Japanese surveys focused on the discovery of sea cucumber fisheries and other potential resources not shipping lanes for global commerce. Long before Tokugawa officials discovered Mamiya in Shimōsa Province, explorers associated with the Matsumae family had already traveled to southern Sakhalin to survey the island.

In 1635, for example, the Matsumae lord dispatched three vassals—Murakami Kamonzaemon, Satō Kamoemon, and Kakizaki Hiroshige—to survey potential fisheries along the coast of southern Sakhalin. They brought back some geographic information to Fukuyama Castle (the stronghold of the Matsumae family), but, apparently, most of it burned in later fires. Nonetheless, traces of the geographic information they gathered appeared on two seventeenth-century maps of Ezochi, which included crude renditions of Hokkaido, Sakhalin, and the Kuril Islands (see Fig. 3). One year after this expedition, the Matsumae lord dispatched Kōdō Shōzaemon to Sakhalin and he traveled as far as Taraika, on the eastern coast of Sakhalin. Throughout the eighteenth century, Japanese merchants, associated with the Matsumae family, continued to travel to Sakhalin, but they did so principally to exploit herring and sea cucumber fisheries, as well as such valuable pharmaceuticals as *eburiko* lichen (Ainu: *siw karus* or *kuy karus*; Linn.: *Fomes officinalis*). At this juncture, Japanese interest in Sakhalin related to the identification of commercial ports and remained linked to Japan’s eighteenth-century economic expansion: merchants and their feudal allies crafted space in the context of Japan’s ‘proto-industrialism’.³⁴ But in the 1790s, just two decades before Mamiya’s journey, Tokugawa officials began to investigate the ‘Santan’ trade route and, later, the Russian presence on Sakhalin. Basically, the ‘Santan’ trade was a commercial network that stretched from Qing posts along the Amur River region to Ainu villages in southern Sakhalin and northern Hokkaido. The trade route brought a variety of valuable items, including rare silk clothing. In 1792, Mogami Tokunai traveled to

Sakhalin, along with several other Tokugawa officials; but he, like later officials, mainly documented trade abuses perpetrated by Japanese merchants on Sakhalin islanders. The fear was that Ainu would defect to Russian controlled areas and convert to Christianity. Of course, he included some ethnographic information and maps in his writings; but his mission was never to thoroughly map Sakhalin.³⁵ Interestingly, Mogami actually served as an assistant to Aoshima Shunzō (d. 1790), another Tokugawa official, who the shogun had dispatched along with Yamaguchi Tetsugorō, Satō Genrokurō, Ōishi Ippei, and Ihara Yaroku to survey Ezochi and determine the extent of the Russian presence. On two different occasions, elements of this 1785 survey team traveled as far as Tarantomari and Kushunnai on the western coastline of Sakhalin.³⁶



Fig. 3. The painted portrait (*shōzōga*) of Inō Tadataka.

Courtesy of the Inō Tadataka Memorial Museum, Sawara City, Chiba Prefecture.

By the late eighteenth century, Japanese cartographers had, like their European colleagues, become interested in the question of whether Sakhalin was a peninsula or an island. Indeed, Japanese, including Mamiya, had come into contact with copies of La Pérouse's map (that depicted Sakhalin as an island); but they also viewed maps by Broughton and Kruzenshtern (that clearly depicted Sakhalin as a peninsula), and so the actual geographic status of Sakhalin continued to be debated even in the peripheries of calculation.³⁷ Only three years after Kruzenshtern's diplomatic mission to Nagasaki, Tokugawa officials dispatched Mamiya to determine the exact geographic status of Sakhalin according to the global language of science—the same language being used in European maps. But what made Tokugawa officials interested in mapping the North Pacific at this time was less contributing to European debates regarding Sakhalin and more anxieties concerning Russian designs for Sakhalin, the Kuril Islands, and

even Hokkaido. Once alarmed, they sought to deploy maps and ethnographies as a means to project national borders between Japan and the Qing and Russian empires. In the minds of Tokugawa officials, geographic and ethnographic continuities translated into national ones, which, with the steady increase of Russian ships in Japanese waters, could spell trouble for the Japanese presence on Hokkaido. This attempt to 'fix the territorial consciousness' of the Japanese, as historian Akizuki Toshiyuki has identified it, corresponded with two raids on Japanese fishery posts in the North Pacific by disgruntled Russian captains in the wake of Kruzenshtern's failed visit to Nagasaki.

In 1804, when Kruzenshtern's ship had sailed into Nagasaki harbor, the ambassador Nikolai Petrovich Rezanov had eagerly awaited to disembark and proceed with his mission to strike a diplomatic arrangement with the shogunate. The Russian czar had ordered Rezanov to open trade with Japan, and the ambassador carried a promissory letter, stamped by earlier Tokugawa officials, that had been received by diplomat Adam Kirillovich Laksman in 1792-1793, when he attempted to make first contact with Japanese officials on Hokkaido.³⁸ Typical of Tokugawa tactics for diplomatic relations with European countries, the shogunate, after six months of stalling, ordered Rezanov to go home; but Rezanov believed that trade with Japan was critical to the economic development of the Russian empire. In 1807, without authorization (and seemingly counterproductive to the goal of opening peaceful trade), Rezanov ordered naval officers (also employees of the Russia-America Company) Nikolai A. Khvostov and G.I. Davydov to attack Japanese possessions in the North Pacific. They attacked fishery outposts on southern Sakhalin, Rishiri Island, and defeated Nanbu and Tsugaru garrisons on Iturup (Etorofu) Island and took several Japanese prisoners. Illustrating how people (even if reluctantly) exchanged scientific information within the fluid ethnic and political space of the North Pacific, there is evidence that one of these Japanese prisoners, Nakagawa Gorōji (1768-1849), returned to Japan in 1812 with the ability to perform Jennerian smallpox vaccinations. A precious handful of documents suggest that Nakagawa vaccinated a Japanese woman in Hokkaido in 1824; while one of his disciples, Shiratori Yūzō, appears to have vaccinated people near Akita. But medical historians still debate whether these vaccinations actually occurred, at least as how existing documents describe the procedure as having took place.³⁹

Stationed at Shana on Iturup Island (or Etorofu Island) when the Russians attacked in the fourth month of 1807 was Mamiya and his actions, as depicted by at least two firsthand observers, provide a window into his personality and motivations; they reveal Mamiya to be a stern nationalist when it came to the defense of the realm, which provides some insight into what he thought he was doing when he, a year later, mapped Sakhalin. In 1807, a Matsuyama domain physician named Kubota Kentatsu (or Itō Kentatsu) accompanied Japanese garrisons to Iturup Island. His unpublished diary, *Hokuchi nikki* ('Diary of northern territories', 1807), portrays the Japanese defense of the island as a farce; but he also befriended the hotheaded Mamiya at Shana. Kubota wrote that he knew the Japanese defense of Iturup was off to a terrible start when, during one of his first nights there, he fell into a pit toilet and, despite his best efforts to scrub himself clean, reeked of human excrement thereafter. His assessment of the legendary samurai fighting prowess was not flattering: shot molded on the island was not sized properly for the guns and hence proved useless; gunpowder had been used up for a fireworks display and the barrel contained only items traded with local Ainu; and field captains had even forgotten how to properly fasten their decorative battle helmets. Of Mamiya, Kubota wrote that initially, Tokugawa captains had ordered him to head the kitchen, which he staunchly resisted: he proved far more anxious to offer

advice on how to deal with the Russians. According to Kubota, Mamiya became extremely upset when officials disregarded his advice to shoot Russians on sight for disobeying orders to not approach Japanese territory. In the end, Mamiya proved highly critical of the handling of the defense of Iturup.⁴⁰ But taking Mamiya's advice could be dangerous. Ōmura Jigohei (d. 1813), in his *Shizanki* ('My bequeathed diary', 1809), had a far less flattering portrayal of Mamiya during the defense of Iturup. According to Ōmura, when the Russians first approached, they fired three shots from their boat. Fancying himself as an expert on Western manners, Mamiya insisted that this was a form of 'decorum'. Sadly, when a Japanese translator was dispatched to exchange the courtesy, Russians shot him. From this point forward, Ōmura had few generous things to say about the know-it-all Mamiya.⁴¹

During the 1807 attack, along with maddening Mamiya, routing Japanese garrisons, and taking Nakagawa prisoner, Khvostov and Davydov left a letter written in Japanese, Russian, and French, so as not to be misunderstood that if shogunal officials continued to stall, Russian ships would take over Japanese territory in the North Pacific. They then demanded an answer by the following spring. In response, the Matsumae magistracy, the shogunal authority on southern Hokkaido, suggested that Japan open trade relations with Russia; but they also suggested that, because the Russians had 'called Karafuto "Sakhalin," and speak of it as their own territory,' surveyors be dispatched to determine the actual boundaries between Japan and Russia. Councilors in Edo agreed and in response to their recommendation, the Matsumae magistracy dispatched Mat-suda Denjirō and Mamiya to survey Sakhalin. Having experienced firsthand the humiliation at Shana, Mamiya was no doubt itching to resolve the Russian question: this time with maps.

Anticipating empire

Eighteenth-century transformations in European politics and culture compelled cartographers such as La Pérouse, Broughton, and Kruzenshtern to explore and, in their travel writings, to map and document the peoples and places they encountered. Mary Louise Pratt argues that such explorers had 'imperial eyes,' because they understood that all the natural things they saw could be scientifically ordered and classified and, by extension, systematically named, controlled, and possessed.⁴² Previously, the triumph in the seventeenth century of a more quantitative and, hence, more measurable manner of understanding their surroundings underwrote the science and the classificatory system that, once provided with political and economic incentives, propelled European cartographers and explorers to all corners of the globe.⁴³ Of course, that La Pérouse's ship, the *Astrolabe*, bristled with powerful geodetic and other quantitative measuring devices enabled him to fix Sakhalin on a globally understood longitudinal and latitudinal grid and, thereby, enabled Broughton and Kruzenshtern to 'return'. Starting with La Pérouse's expedition Europeans began to see Sakhalin with 'imperial eyes'.

As J.B. Harley has famously argued, once historians see maps as a form of language it then becomes easier to identify and decipher the 'historically specific codes' embedded in them. These codes include questions regarding readership and authorship, local and global cartographic literacy, and the 'nature of the political statements which are made by maps'. Disguised as just another benign, 'valueless' science, cartography and the knowledge it produced represented a form of power that reproduced the world abstractly and that reflected the expansive geopolitical imperatives of eighteenth-century European states. As forms of 'authoritative resources,' or knowledge controlled by the state, maps engendered forms of spatial control that facilitated

imperialism.⁴⁴

‘Insofar as maps were used in colonial promotion, and lands claimed on paper before they were effectively occupied,’ writes Harley, ‘maps anticipated empire’.⁴⁵ Similarly, in his study of Australian exploration, Simon Ryan observes that the map, when designed according to the global, measurable, and divisible language of science, became ‘an imperial technology used to facilitate and celebrate the further advances of explorers, and display worldwide imperial possessions’.⁴⁶ Daniel Clayton has identified this as the ‘spatiality of imperialism,’ a process wherein maps created the ‘geopolitical framework’ for colonial projects around the globe, even before there were colonial boots on the ground.⁴⁷

Japanese explorers and cartographers such as Mamiya Rinzō and Matsuda Denjirō also saw Sakhalin with ‘cartographic’ and ‘imperial’ eyes, and their travel literature—both cartographies and ethnographies—anticipated Japanese empire-building in the early twentieth century. Interestingly, similar to Mamiya, who we discussed above, and other age of exploration cartographers, Matsuda was the son of a commoner from Echigo Province (Niigata Prefecture). In Echigo, Matsuda demonstrated a knack for surveying when he became a supervisor of a road construction crew and, later, rose to become a Tokugawa official in Edo. In 1799, when the shogunate took direct control of affairs in Ezochi, Matsuda volunteered for service in the newly acquired territory. Not only did he open up an Ezochi products ‘trade post’ in the capital of Edo to promote goods from Japan’s northern territory, but he made several trips to Hokkaido, wintering at the Shana post on Iturup in 1803 and, while on Hokkaido for a third time, accompanying thirty Tsugaru samurai to Sōya, on the northernmost tip of Hokkaido. He received orders from the shogunate to explore Sakhalin Island with Mamiya while he wintered at Sōya in 1808. Until control of Ezochi again reverted to the Matsumae family in 1821, Matsuda, for a period of over two decades, oversaw and explored much of Hokkaido and Sakhalin. In 1809, one year after exploring Sakhalin with Mamiya, he became a regional governor of sorts, representing Japanese interests on Sakhalin. He was also commander of the military escort that famously imprisoned the Russian Vasilii Mikhailovich Golovnin (1776–1831) in Fukuyama in 1813, who, incidentally, met Mamiya personally while incarcerated.⁴⁸

Mamiya and Matsuda departed for Sakhalin from Sōya, on the northernmost tip of Hokkaido, on the thirteenth day of the fourth month of 1808, landing at Shiranushi that same day.⁴⁹ Once at Shiranushi, Matsuda and Mamiya went separate ways: Matsuda traveled northward in a small boat up the western coastline of Sakhalin to Noteto and then, from there, traveled on foot, becoming the first Japanese to reach Cape Rakka. From Cape Rakka, as mentioned earlier, Matsuda was not able to proceed, because of beds of rotten kelp and weather. Nonetheless, from the cape, Matsuda saw that the sea ran between Sakhalin and the Eurasian continent and came to believe that Sakhalin was an island and not a peninsula. Later, he reported this information to Takahashi Kageyasu and officials with the Matsumae magistracy. Meanwhile, Mamiya had traveled up the eastern coastline of Sakhalin in a small Ainu boat. He passed Naibutsu where, several years earlier, the Matsumae explorer Nakamura Koichirō had arrived, and landed at Taraika, home of the Uilta people. Mamiya then turned south, crossed Taraika Bay, and landed on the northern side of Sakhalin’s Shiretoko Peninsula (the explorer C.J. Coen had also attempted this route). He retraced his steps, crossed the width of Sakhalin to Kushunnai; he then followed Matsuda’s route landing just north of Cape Rakka. As mentioned in the introduction, he then paddled a small boat some two thousand yards off the coast and confirmed as no other cartographer had (with the exception of Matsuda) that Sakhalin was an island. Mamiya and

Matsuda both returned to Sōya in the sixth month of 1808.⁵⁰

That winter, Mamiya remained disappointed that he had been unable to survey the northernmost reaches of Sakhalin and so, while in Sōya, he sought permission from Matsumae magistrate Kawajiri Haruno (1756-1815) to explore the island again. On the thirteenth day of the seventh month of 1808, Mamiya crossed over to Shiranushi alone.⁵¹ After securing an Ainu boat (another important cartographic technology), he reached Tonnai, the northernmost Japanese fishery on the western coastline of Sakhalin, and there he recruited six Sakhalin Ainu guides. Together, on the fifteenth day of the eighth month, they reached Riyonai by boat; but because of a lack of provisions they returned to Tonnai where they spent the winter. Mamiya then sent a written report and draft map to Tokugawa officials (much as La Pérouse had to Paris decades earlier), detailing the initial phase of his expedition. He sent the map to an ‘inquiry official,’ Takahashi Shigekata (also Sanbei: 1758-1833), a figure concerned principally with political boundaries on Sakhalin. No doubt alarming Takahashi, Mamiya explained that on the west coast of Sakhalin, Ainu living north of Nayoro paid tributary visits to Qing officials at Deren; Qing officials then bestowed official titles on Ainu elders.⁵² These tributary titles consisted of *haraida* (*xingzhang*, ‘head of surname group’) and *gashanda* or *gashanida* (*xiangzhang*, ‘village elder’) and, once bestowed, they entrusted local Ainu elders with the task of ‘keeping the peace’ on the boundaries of the Qing empire. By the mid-eighteenth century, Qing officials had appointed some fifty-six surname groups as *haraida*; of these, six clans and 148 households were those of Ainu and Nivkh living on Sakhalin.⁵³ As Mamiya discovered, overlapping Japanese ‘proto-industrial’ space on southern Sakhalin was Qing colonial space in the form of the tributary order; and one way that the Qing oversaw the ‘production of space’ on Sakhalin was through the dissemination of official titles and tributary duties. But for his part, Mamiya was struck less by economic and political borders than by the ethnic fluidity on Sakhalin, as the northern Sakhalin Ainu had converted to the customs of the Ul’chi people (called ‘Santan’ in early modern Japanese documents), and many other continentals just came and went on the island as they pleased.

At the end of the first month of 1809, Mamiya and his guides again traveled north to Noteto, on Cape Tuiku. North of Noteto, the ocean was still frozen, and so they could no longer proceed by boat. Mamiya decided to stay in Noteto until the seventh day of the fifth month of 1809, when he, now with two Nivkh guides, departed for Pokobōe (along the Mamiya Strait on the Sakhalin side). He made it as far north as Nanio, in northwestern Sakhalin, but rough seas made him cancel his plans to go any further north. Mamiya then returned to Noteto where he stayed in the home of a Nivkh chief named Kōni. Once again, much as La Pérouse had done with other native headmen, Mamiya listened eagerly as Kōni told him stories of the northern territories and the two became friends. Even though Mamiya relied heavily on his Nivkh guides and Chief Kōni, in his maps he ‘erased all traces of the indigenous knowledge [he] had relied on’. In his maps, Mamiya carefully ‘dissolved the local geography of native peoples’ and, ultimately, one is left with the impression that Sakhalin was empty, an ‘unoccupied land’ ready for Japanese occupancy.⁵⁴

To complete these maps, Mamiya departed Noteto with Kōni and arrived on the Eurasian continent where they entered Kiji Bay. From Kiji Bay they navigated up the Amur River and arrived at the Qing outpost of Deren on the eleventh day of the seventh month of 1809. There, Mamiya noted that some fifty or sixty Qing officials had gathered for the tributary trading season. Three officials summoned Mamiya to their boat, and there the four men had a written conversation using Chinese characters.

Unlike most European explorers who traveled across space but, because of assumptions regarding historical progress, also back in time, to confront more ‘savage’ peoples, Mamiya confronted Qing officials who were not only highly literate, but who wrote using more or less the same Chinese characters as the Japanese. Mamiya had encountered, in the Amur region, the edge of a rival center: the ‘Central Kingdom’ (Chinese: Zhongguo). Mamiya departed shortly thereafter (on the seventh day of the eighth month), and en route to Sakhalin surveyed the width and route of the Amur River, sketched roughly on the map ‘Mankō bunzusho’ (Map of the Amur region; 1809). Mamiya parted with his travel partner, Kōni, on the eleventh day and shortly thereafter met with Matsuda in Shiranushi on southern Sakhalin.⁵⁵

When Mamiya and Matsuda returned to Sōya after the first attempt to explore Sakhalin, they reported to officials at the Matsumae magistracy. They also presented a map, the ‘Karafuto tō taigai chizu’ (‘A general map of Sakhalin Island’, 1809), to officials with the magistracy. Importantly, the map depicts Sakhalin as an island and not a peninsula; the southwestern and southeastern sections of the island (where Matsuda and Mamiya had traveled) contain fairly detailed geographical information. The shape of Aniwa Bay, for example, was better represented than on an earlier map, the ‘Karafuto kenbu zu’ (‘A map of Sakhalin’, 1801), drawn by explorers Takahashi Jidayū and Nakamura Koichirō. Moreover, Takahashi and Nakamura, as demonstrated by their highly innovative map, had fallen short of determining whether Sakhalin was an island or not and so improvised with a roll-down flap (see Figs. 4 and 5).



Fig. 4. ‘Genroku kuniezu’ (1700). The northernmost island on the map is an early Japanese rendition of Sakhalin; the small cluster of islands off the western coast of Ezo (present-day Hokkaido) represents Chishima (or the Kuril archipelago). Courtesy of the Resource Collection for Northern Studies, Hokkaido University Library.

With the information Mamiya brought back from Sakhalin after his second trip, Tokugawa official Takahashi Kageyasu and a team of cartographers ensconced in Edo’s periphery of calculation—came up with the ‘Shintei bankoku zenzu’ (‘Newly revised map of all the countries’, 1810), to be used in determining borders in diplomatic affairs. Later, in 1816, the

shogunate issued an official copperplate engraving of the map, one with revised sections of Sakhalin based on the Chinese ‘Huangyu quanlan tu’ (‘Map of a complete view of imperial territory’, known as the Kangxi Jesuit atlas) from 1718.⁵⁶ In order to contribute to the ‘Shintei bankoku zenzu,’ once Mamiya had returned from his second expedition, he stayed in Sōya and began, under the direction of Arao Nariaki of the Matsumae magistracy, to consolidate his maps and notes with the help of Murakami Teisuke, the adopted son of Murakami Shimanojō. In the seventh month of 1810, Mamiya completed draft manuscripts of *Kitaezo chibu* (The region of northern Ezo) and *Tōdatsu kikō*, as well as the ‘Kitaezo tō chizu’ (A map of northern Ezo island), a monumental map divided onto seven large sheets with a scale of 36,000 to 1. The *Hokui bunkai yowa* (Reflections on northern barbarian borders) appeared at the same time of the final version of the *Tōdatsu chihō kikō*, in the third month of 1811. Mamiya presented both texts to officials at the shogunate. Mamiya reduced the monumental ‘Kitaezo tō chizu’ map to one sheet, giving it the rather exotic scientific title, ‘Kokuryūkō chūshū narabi tendō’ (Central Heilongjiang [Amur River] with latitudinal lines) (see Figs. 6 and 7).

Cartographically speaking, the ‘Kokuryūkō chūshū narabi tendō’ was more useful than earlier Sakhalin maps. The one cartographic discrepancy with the map was a product of Mamiya’s being unaware of how to calculate latitude based on celestial surveys. Mamiya used Inō’s meridian calculation that one degree equaled 28.2 *ri* (one *ri* equals 3.93 km), and then conducted linear measurements to determine the latitudinal numbers. According to Akizuki Toshiyuki, when Mamiya calculated the distance between Shiranushi and Natsuko (at 137 *ri*), this put him off by about 4.9 degrees.⁵⁷ Nonetheless, Mamiya had fixed Sakhalin on a globally recognizable grid as no other cartographer had. He also contributed to resolving global scientific debates at the periphery of calculation by determining that Sakhalin was an island rather than a peninsula.

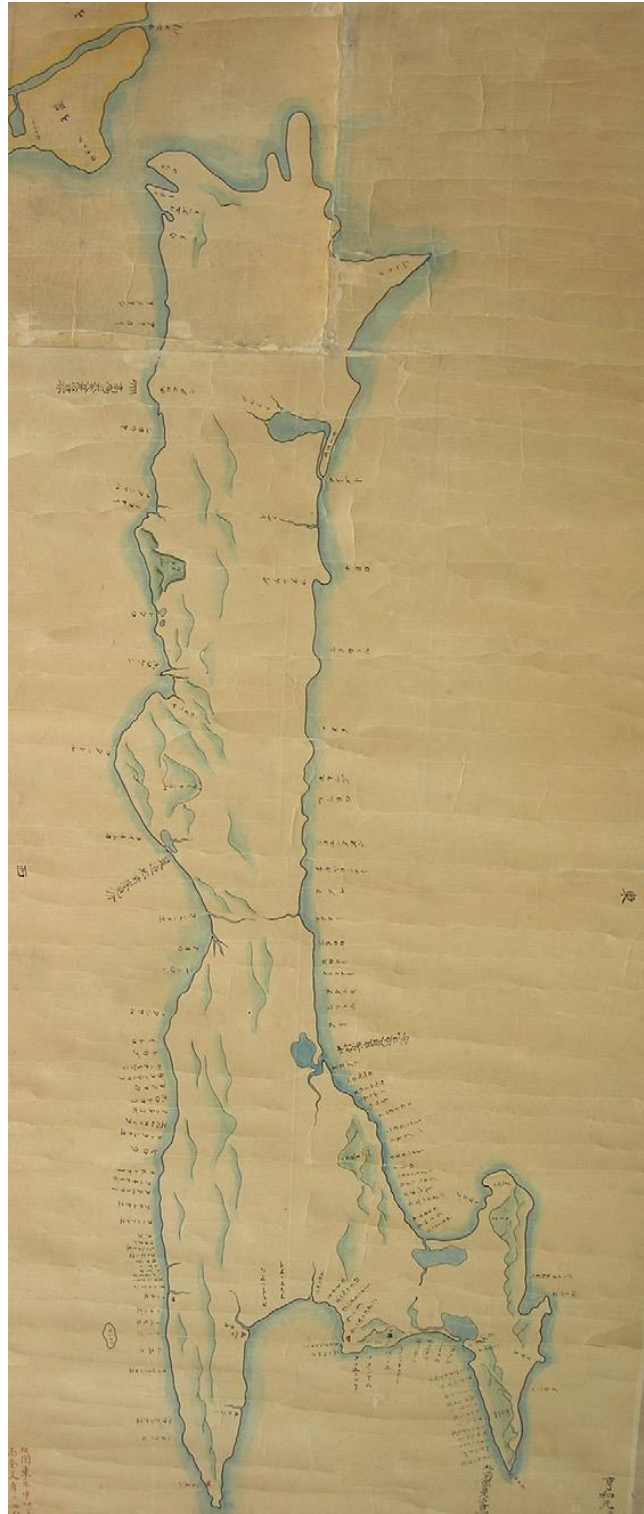


Fig. 5. Takahashi Jidayū and Nakamura Koichirō, 'Karafuto kenbu zu' (1801), depicting Sakhalin as an island. Courtesy of the Resource Collection for Northern Studies, Hokkaido University Library.

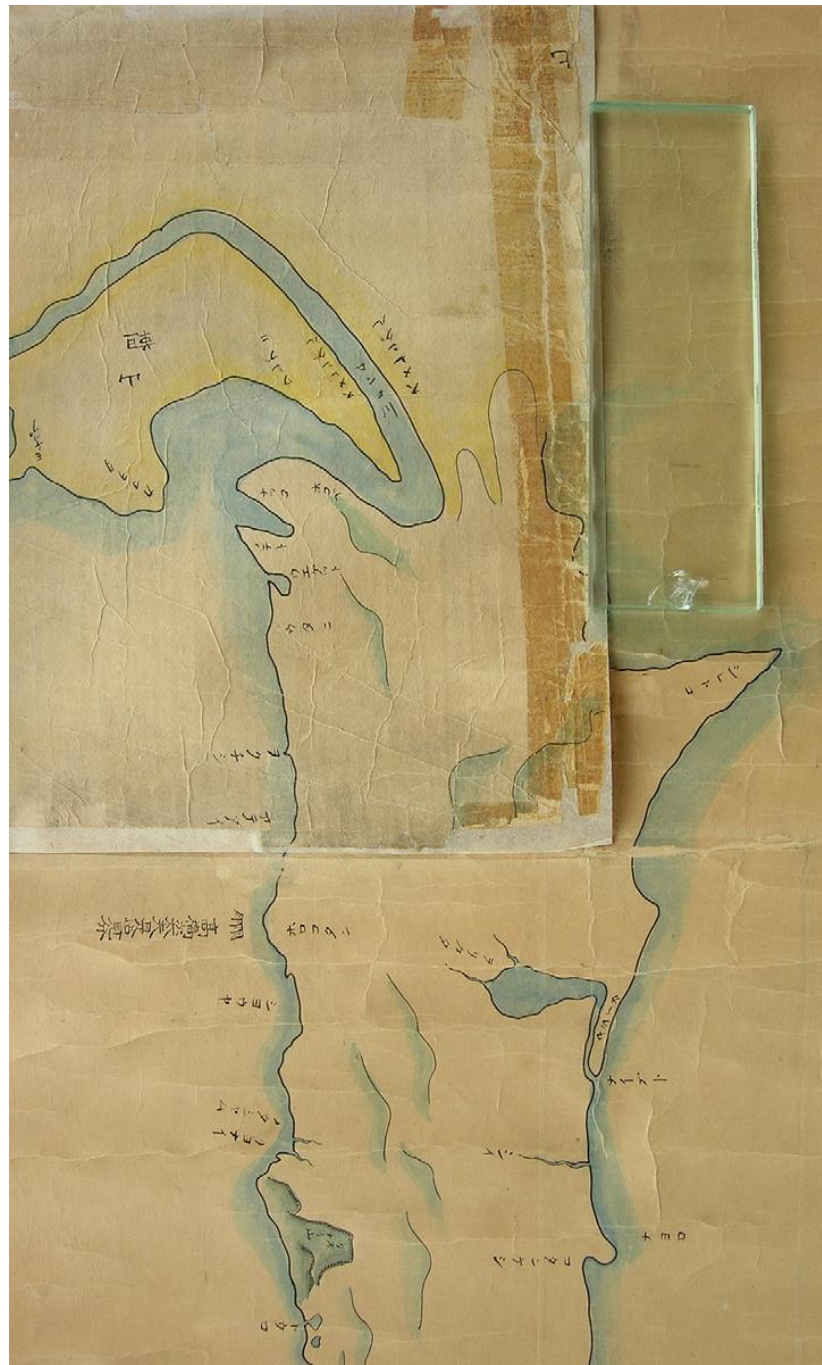


Fig. 6. A detail of the northern section of Takahashi Jidayū and Nakamura Koichirō, ‘Karafuto kenbu zu’ (1801). With the innovative flap down, Sakhalin could be depicted as a peninsula.
 Courtesy of the Resource Collection for Northern Studies, Hokkaido University Library.

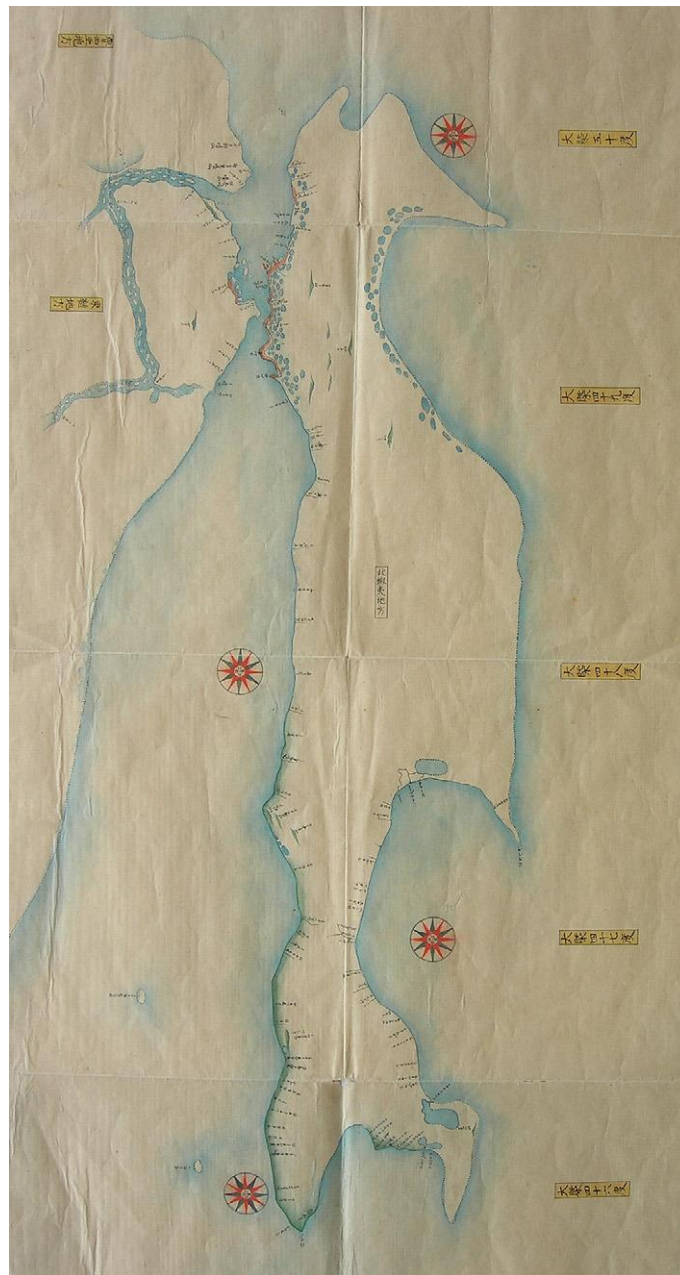


Fig. 7. Mamiya Rinzō 'Kokuryūkō chūshū narabi tendō' (Central Heilongjiang [Amur River] with latitudinal lines). Courtesy of the Resource Collection for Northern Studies, Hokkaido University Library.

Cultural difference and spatial distance

In seventeenth-century Europe, a decidedly quantitative and empirically based ethnography had developed simultaneously to the cartography that allowed kings and their calculators to see foreign territories and future empires on maps.⁵⁸ This new ethnography allowed Europeans to see other people more scientifically and quantitatively as well; as disassociated from their lands and relocated to taxonomies related to their degree of 'savagery' or 'progress.' In the Japanese case, Mamiya's travel writings, after fixing Sakhalin's cartographic information on de-humanized maps, investigated the customs and practices of the peoples who called Sakhalin home. His maps emptied Sakhalin of human inhabitants, preferring a scientific grid over relative and relational

information; similarly, his ethnographies employed empirical observations to classify the islanders of Sakhalin, as well as other useful flora and fauna, according to early modern Japanese taxonomies and economies.

Most likely, in 1809, when Mamiya had reached the Qing post at Deren, he had traveled as far northward as any Japanese had ever ventured, at least officially. Today, we know where Mamiya ventured: through Sakhalin into the Heilongjiang (or Amur River) region and back. Nonetheless, for most learned Japanese, the North Pacific had remained mysterious. In the medieval years (1185–1568), Japanese had referred to the region explored by Mamiya—not only Sakhalin, but Hokkaido and the Kuril Islands as well—as Ezogashima, or ‘barbarian islands’. For medieval Japanese, the beginning of Ezogashima represented the northern edge of the medieval Japanese realm: the end of Japan’s geopolitical knowledge.⁵⁹ Later, in the early modern years (1600–1868), Japanese simply referred to the region as Ezo or Ezochi, an ethno-geographic term that referred to both the land and its Ainu inhabitants. When Japanese spoke of Ezo (or the Ezojin, ‘Ezo people’) they spoke of the Ainu; but they might also refer to other ethnic groups that inhabited Hokkaido, Sakhalin, and the Kuril Islands, including Sakhalin Ainu (Hatsushima people), Uilta (Orokko people), Nivkh (Sumerenkuru or Gilyak people), and Yukagir of Sakhalin Island, as well as Kuril Ainu and the Kamchadal of the Kamchatka Peninsula. Exploring Sakhalin meant encountering foreign peoples, exotic animals, and alien environments. Sakhalin, as seen with Japanese ‘imperial eyes,’ was indeed an exotic and distant place, but one directly related to Japanese geopolitical concerns.

One manner in which early modern Japanese constructed notions of their own ethnic identity was through the delineation of concentric circles of lessening degrees of customary difference that emanated out from the Japanese core.⁶⁰ According to this epistemology, ethnic space was entirely relational to the Japanese and, to a lesser degree, the Chinese core and the Confucian customs practiced there. For this reason, civility was more a spatial experience than a temporal one: space—not history in the form of historical ‘progress’—provided the measure of Japan’s moral civilization. The signposts designating these concentric circles of civility were the ‘customs’ of different people—customs described or depicted in illustrated ethnographies as their industry, housing, tools, hairstyles, food, trade, marriage practices, and ancestral rites—and so Japanese explorers traced the distance of their travels not only through days of travel (their actual temporal distance from home according to linear measurements of *ri* and the Chinese zodiac), but through carefully documenting their ethnographic encounters. As Marcia Yonemoto explains, Japanese travelers in the eighteenth and early nineteenth centuries often embellished the landscapes and customs they wrote about because that helped to ‘conjure up for the reader visions of unknown places’. Even within Japan, travelers sought to ‘witness, analyze, and catalog difference’ because difference implied distance, and so they focused on ‘defining and measuring degrees of strangeness within the homeland itself’.⁶¹

‘The eye of the historian,’ writes Tessa Morris-Suzuki, ‘tends to look for change over time rather than diversity across space,’ but prioritizing time over space only distorts the experiences of early modern Japanese explorers. In short, she argues for sensitivity to ‘spatial diversity’ as well as ‘temporal change’.⁶² Morris-Suzuki writes that the ‘cornerstone’ of Japan’s frontier relations was ‘the logic of difference,’ even if Japanese sometimes exaggerated or trumped up differences.⁶³ Importantly, Japanese, through encyclopedias and maps, created a ‘world made up of concentric circles of increasing strangeness, stretching almost infinitely outwards from a familiar centre,’ and to explore was to travel through these concentric circles, in effect measuring

distance from the orbit of the Japanese core through descriptions of rings of cultural difference.⁶⁴ This is not to say, however, that Japanese maps or portrayals of customary difference did not erect boundaries between Japan proper and the outside world; rather, only that these boundaries were never neat and clear cut, as modern borders often are, but instead represented the ‘ragged edges’ of Japan.⁶⁵

Although Mamiya described many encounters with customary difference in the *Tōdatsu chihō kikō*, his best ethnography is the *Kitaezo zusetu* (‘Illustrated explanation of northern Ezo’, 1855), which was published nine years after his death (see Fig. 8). If the *Tōdatsu chihō kikō* produces space through narrative, geographic names, and descriptions of distance based on Chinese calendric months and days and Japanese linear measurements, the *Kitaezo zusetu* offers a more poignant sense of distance through empirical renditions, both narrative descriptions and carefully drawn images, of the peoples who called Sakhalin home. In effect, Mamiya, through the illustrated ethnography, created a sense of distance in the Japanese spatial imagination: the sheer cultural ‘strangeness’ of these people conjured a far away place, and so let us turn to this important document by exploring what it says about the peoples of Sakhalin, specifically their hairstyles and culinary cultures, as both hair and food served as important cultural signposts for early modern Japanese. Indeed, exotic hairstyles and food proved such potent signposts of customary difference that Nagakubo Sekisui (1717–1801), in his domestic travel writings, conjured a sense of foreignness and distance even while describing the Dutch and Chinese in the decidedly Japanese city of Nagasaki.⁶⁶



Fig. 8. A detail of the strait between Sakhalin Island and Amur Estuary from Mamiya Rinzō, *Kokuryūkō chūshū narabi tendō* (Central Heilongjiang [Amur River] with latitudinal lines).

Courtesy of the Resource Collection for Northern Studies, Hokkaido University Library.

In the *Kitaezo zusetu* (Fig. 9), Mamiya described his encounters with Sakhalin Ainu, as well as the Uilta and the Nivkh. When describing Sakhalin Ainu, Mamiya started out by highlighting cultural signposts all Japanese could understand—their strange hairstyles or general hairiness. In early modern Japan, hairstyles were extremely important, as they served to demarcate the place of people within the status system; but hairstyles also became what historian Ronald Toby refers to as ‘codes of Other,’ identifying, as few physical and cultural attributes do, people not members of Japan’s cultural or ethnic community.⁶⁷ Perhaps even more importantly, the trope of hairiness—many northern peoples were described as *mōi*, or ‘hairy barbarian’; most Europeans were known as *kōmō*, or ‘red hairs’—remained common throughout East Asia for describing exotic ‘barbarian’ people.



Fig. 9. The four volume *Kitaezo zusetu* (1855).

Courtesy of the Resource Collection for Northern Studies, Hokkaido University Library.

Tapping into such traditions, Mamiya explained that Sakhalin Ainu resembled Ainu on Hokkaido, but that many did not have ‘connected eyebrows’ and they had ‘less robust beards’. Women’s hair hung down about shoulder length. In contrast to Sakhalin Ainu, Uilta and Nivkh men did not cut their hair and let it hang down their backs in flowing and stylized bundles. Uilta women also wore their hair hanging down their backs, as well as bundled on top of their heads. Unlike Ainu women, Uilta and Nivkh women combed their hair and adorned themselves with earrings and other elaborate jewelry. In short, Mamiya colored his ethnographic discussion with

cultural signposts, including brief descriptions of native Sakhalin hairstyles. These were simple yet extremely pregnant descriptions, and served to delineate spatial distance.

Conclusion

In the aftermath of the Khvostov and Davydov attacks of 1807, Takahashi Kageyasu, the shogun's official astronomer, oversaw the creation of a world map that could structure Japan's approach to diplomatic affairs at the dawn of a new century. In order to depict the most contested area—Kita Ezo, or Sakhalin Island—Mamiya Rinzō was dispatched to explore the northernmost reaches of Japan's geopolitical knowledge. In doing so, Mamiya did not really explore Sakhalin, but rather he created it anew, and thereby positioned it in the context of the boundaries of Japan's burgeoning nation state and empire. The importance of this process is hard to overestimate. Because maps played a critical role in the establishment of European empires, the creation of universally comprehensible cartographic renditions of Sakhalin proved critical to the national security interests of Japan as well as to the imperial ambitions of Russia and other European powers.

As L.M. Cullen explains, Sakhalin served as an important steppingstone for Russian ambitions in the North Pacific, but because Sakhalin's exact geography had been unknown, Mamiya's maps 'had the security rating of, say, drawings during the Cold-War period of highly secret nuclear installations'. The 'Von Siebold Affair' of 1828 illustrates this point: when Takahashi Kageyasu ill-advisedly handed over some of the most up-to-date maps of Ezochi to Philipp Franz von Siebold (1796–1866) in 1826, who was then caught with them two years later when trying to leave the country, the shogunate (apparently spurred on by the patriotic Mamiya) started proceedings against Takahashi and later jailed him along with several of Von Siebold's students (even though Von Siebold himself was later vindicated). In effect, Takahashi's surrendering of Ezochi maps proved contrary to the state's interests and, in effect, treasonous.⁶⁸ When Mamiya mapped Sakhalin with European surveying technologies and according to the logic of scientific cartography, he positioned the island on the global grid—its locations fixed for all nations to find and see—but he had also placed early modern Japan among those nations competing to implement their imperial designs in the North Pacific. This process of placing Sakhalin on a global grid proved common to other early modern experiences with the science of cartography and the anticipation of empire.

The nineteenth- and early twentieth-century history of the colonization of Sakhalin Island is complicated. Basically, after the signing of the Treaty of St. Petersburg in 1875, Japan gave control of all of Sakhalin to Russia after a period of joint occupation, and the island served as a brutal penal colony for the czarist regime for decades. After its military victory over Russia in 1905, Japan declared control over all of Sakhalin; but, following the signing of the Treaty of Portsmouth on 5 September 1905, Japan departed negotiations with control over the southern half of the island below the fiftieth parallel, which it called 'Karafuto'.⁶⁹

The Ainu inhabitants fared poorly under Japanese rule. In 1875, after Japan conceded Sakhalin to Russia in exchange for the Kuril Islands, Japanese officials relocated some 841 Sakhalin Ainu, now Japanese nationals, from the Aniwa Bay area to Hokkaido. These Ainu hoped to settle on northern Hokkaido, which was similar ecologically to their native Sakhalin home. Instead, Japanese officials relocated the Sakhalin Ainu to the Tsuishikari settlement, near the Ishikari River and the northern capital of Sapporo. A decade later, nearly 350 members of the

settlement—almost half of the total population—died in smallpox and cholera epidemics caused by their close proximity to Japanese, who carried the smallpox virus endemically.⁷⁰ Many Ainu also fled back to Russian Sakhalin to labor in fisheries. By the time southern Sakhalin reverted to Japanese control, only about 120 Ainu lived at the Tsuishikari settlement; and all but twenty-seven of them decided to return to Sakhalin after 1905.⁷¹ Japanese control over southern Sakhalin persisted until 11 August 1945 when, in the concluding days of the Pacific War, the Soviet Union thrust across the fiftieth parallel and drove the Japanese from southern Sakhalin.⁷²

Mamiya's maps signify more than the anticipation of empire: they also provide evidence that the 'universality' of cartography could be a sharp, double-edged sword for Western imperial designs. Given Japan's brutal imperial legacies in Korea, China, and elsewhere, it is easy to forget that Japan, in the late eighteenth and early nineteenth centuries, was once menaced by predatory Western powers, ones that circled the small island chain in their gunboats like sharks around a fragile raft. Indeed, the same Western surveyors that sought to place Sakhalin on a scientific grid did the same with the Japanese Islands, sending information about the island country to Europe's 'centers of calculation'. But Japan's embrace of Western cartography to guard its national sovereignty and to anticipate empire demonstrates that the mapmaking tools of empire could also be wielded as tools to resist empire, particularly when underwritten by developing native conceptions of the nation. That is, in the peripheries of calculation, such as the Tokugawa capital of Edo, surveyors deployed the science of cartography as a means to guard newly articulated notions of sovereignty. Think of it this way: in the 1850s, Western diplomats, circled around a negotiating table at Yokohama, might have yawned at claims of Japanese national sovereignty based on cherished aesthetic networks of *haikai* poets, but they knew well the power of maps, particularly ones constructed according to their own cartographic standards. In other words, Mamiya's maps reveal Japan's early commitment to modernization in the face of Western encroachment well before the Meiji Restoration and, in turn, how cartography mastered in the periphery of calculation could be used to foil Western imperial designs.

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Notes

¹ See T. Akizuki, *Nichirō kankei to Saharin tō: Bakumatsu Meiji shonen no ryōdo mondai*, Tokyo, 1994; more recently, T. Akizuki, *Nihon hokuhen no tanken to chizu no rekishi*, Sapporo, 1999.

² The importance of not having multiple or overlapping national sovereignties on maps would be clear to Japanese policymakers once they entered the modern diplomatic treaty regimen with the Euro-American powers in the 1850s. Mamiya, by drawing cartographically accurate maps, not only anticipated Japanese empire in the North Pacific, but anticipated one of the tools required in negotiating with the West. On these treaties and the clever Japanese negotiating that went into them, see M.R. Auslin, *Negotiating with Imperialism: The Unequal Treaties and the Culture of Japanese Diplomacy*, Cambridge, MA, 2004, 11-33.

³ L. Hostetler, *Qing Colonial Enterprise: Ethnography and Cartography in Early Modern China*, Princeton, 2001, 1-3.

⁴ S.L. Burns, *Before the Nation: Kokugaku and the Imagining of Community in Early Modern Japan*, Durham, 2003; H.D. Harootunian, *Toward Restoration: The Growth of Political Consciousness in Tokugawa Japan*, Berkeley, 1970; J.V. Koschmann, *The Mito Ideology: Discourse, Reform, and Insurrection in Late Tokugawa Japan, 1790-1864*, Berkeley, 1987.

⁵ This sophisticated and compelling argument is advanced in E. Ikegami, *Bonds of Civility: Aesthetic Networks and the Political Origins of Japanese Culture*, Cambridge, 2005, 46, 47, 230, 231. This is a departure from earlier debates on the topic of the origins of a national consciousness in Japan. Famously, theorist M. Maruyama argued that the eighteenth-century de-centered feudal order inhibited the emergence of a national consciousness in Japan. He submitted that only with the arrival of European ships in the nineteenth century did Japan begin to develop a sense of 'political solidarity' and 'national unity'. For more on this line of thinking, see M. Maruyama, *Studies in the Intellectual History of Tokugawa Japan*, M. Hane (Trans), Princeton, 1974, 327.

⁶ M.E. Berry, *Japan in Print: Information and Nation in the Early Modern Period*, Berkeley, 2006, 209.

⁷ T. Najita, *Japan: The Intellectual Foundations of Modern Japanese Politics*, Chicago, 1974, 58.

⁸ B. Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, revised edition, London, 1991, 163-185. For more on maps and nation-building, see T. Winichakul, *Siam Mapped: A History of the Geo-Body of a Nation*, Honolulu, 1994.

⁹ For another example of people being mapped out of the landscape by others with imperial designs, see K.G. Brealey, Mapping them 'out': Euro-Canadian cartography and the appropriation of the Nuxalk and Ts'ilhqot'in first nations' territories, 1793-1916, *The Canadian Geographer/Le Géographe canadien* 39, 2 (1995) 140-156.

¹⁰ Hostetler, *Qing Colonial Enterprise* (note 3), 15, 16.

¹¹ Hostetler, *Qing Colonial Enterprise* (note 3), 5, 6.

¹² D. Harvey, *Justice, Nature & the Geography of Difference*, Malden, 1996, 10, 11, 222.

¹³ J.C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition have Failed*, New Haven, 1998.

¹⁴ This point regarding a Confucian orthodoxy is a bit of an overstatement. Herman Ooms has demonstrated that the Tokugawa ideology took longer to coalesce and was not as strictly Confucian as often claimed. See H. Ooms, *Tokugawa Ideology: Early Constructs, 1570-1680*, Princeton, 1985.

¹⁵ D.L. Howell, *Geographies of Identity in Nineteenth-century Japan*, Berkeley, 2005, 24, 25, 46, 47.

¹⁶ By far the most comprehensive treatment of Japanese social history comes from Amino Yoshihiko. Although he wrote on Japan's medieval years, his books do illustrate the incredible diversity of Japanese society in the late medieval and early modern years. See Y. Amino, *Nihon chūsei no minshūzō*, Tokyo, 1980; Y. Amino, *Nihon shakai no rekishi*, 3 Vols, Tokyo, 1997.

¹⁷ T. Hora, *Mamiya Rinzō*, Tokyo, 1960, 38-47.

¹⁸ K. Nagahara and K. Yamamura, Shaping the process of unification: technological progress in sixteenth- and seventeenth-century Japan, *Journal of Japanese Studies* 14, 1 (1988) 83-88. On the Chinese origins of many of these hydrologic systems, see M. Elvin, *The Retreat of the Elephants: An Environmental History of China*, New Haven, 2004.

¹⁹ J.R. Bartholomew, *The Formation of Science in Japan*, New Haven, 1989, 23, 24.

²⁰ An original copy can be found at the Resource Collection for Northern Studies, Hokkaido University Library.

²¹ For an English-language biography of Matsudaira Sadanobu and a treatment of many of his conservative reforms, see H. Ooms, *Charismatic Bureaucrat: A Political Biography of Matsudaira Sadanobu, 1758-1829*, Chicago, 1975.

²² Hora, *Mamiya Rinzō* (note 17), 47-52.

²³ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 286.

²⁴ Maps and surveys emerged as just one part of a more comprehensive shogunal policy to assert control over Ezochi and its Ainu inhabitants. For more on Tokugawa policies in Ezochi, particularly with regards to disease and medicine, see B.L. Walker, The early modern Japanese state and Ainu vaccinations: redefining the body politic, 1799-1868, *Past and Present* 163 (1999) 121-160. On the manner in which Japanese policies of assimilation reconfigured Ainu relations to once-worshipped animals such as wolves, see chapter 2 in B.L. Walker, *The Lost Wolves of Japan*, Seattle, 2005; see also J.J. Stephan, *Ezo under the Tokugawa Bakufu, 1799-1821: an aspect of Japan's frontier history*, Ph.D. Diss., University of London, 1969.

²⁵ Astronomy (and its close-cousin calendar making) was among the more prominent pre-industrial sciences in Japan. For more on pre-industrial Japanese science, see M. Sugimoto and D.L. Swain, *Science and Culture in Traditional Japan, A.D. 600-1854*, Cambridge, MA, 1978.

²⁶ For more on the science of Inō Tadataka's cartography, see R. Ōtani, *Tadataka Inō: The Japanese Land-Surveyor*, K. Sugimura (Trans), Tokyo, 1932; more recently, M. Hoyanagi, *Inō Tadataka no kagakuteki gyōseki: Nihon chizu sakusei no kindaika e no michi*, Tokyo, 1974.

²⁷ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 287.

²⁸ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 285.

²⁹ D.N. Livingstone, *Putting Science in its Place: Geographies of Scientific Knowledge*, Chicago, 2003, 156.

³⁰ *A Voyage Round the World, Performed In the Years 1785, 1786, 1787, and 1788, By the Boussole and Astrolabe, Under the Command of J.F.G. De La Pe'rouse: Published by Order of the National Assembly, under the Superintendence of L.A. Milet-Mureau, Brigadier-General in the Corps of Engineers, Director of Fortifications, Member of the Constituent Assembly and Fellow of several literary Societies at Paris*, Vol. 2 (London: G.G. and J. Robinson, Paternoster-Row; J. Edwards, Pall-Mall; and T. Payne, Mews-Gate, Castle-Street, 1799), 18-27.

³¹ W.R. Broughton, *A Voyage of Discovery to the North Pacific Ocean: In which the Coast of Asia, from the Lat. of 35 degrees North to the Lat. of 52 degrees North, the Island of Insu (commonly known under the name of the Land of Jesso), the North, South, and East Coasts of Japan, the Lieuchieux and the Adjacent Isles, as well as the Coast of Corea, have been Examined and Surveyed. Performed in His Majesty's Sloop Providence, and her Tender, in the years 1795, 1796, 1797, 1798* (London: T. Cadell and W. Davies in the Strand, 1804), 274-297.

³² B. Latour, *Science in Action: How to Follow Scientists and Engineers through Society*, Cambridge, MA, 1987, 215-228.

³³ M.T. Bravo, Ethnographic navigation and the geographical gift, in: D.N. Livingstone and C.W.J. Withers (Eds), *Geography and Enlightenment*, Chicago, 1999, 204, 205, 211, 213, 214, 230, 231.

³⁴ Kären Wigen has demonstrated how early modern Japan's proto-capitalism shaped the spatial development of the Ina Valley, creating, by the early twentieth century, a 'Japanese periphery'. That is, the Ina Valley transformed 'from a diverse proto-industrial center to a precarious industrial supply zone.' See K. Wigen, *The Making of a Japanese Periphery, 1750-1920*, Berkeley, 1995, 12. For more on the geographic imagination in early modern Japan, see K. Wigen, The geographic imagination in early modern Japanese history: retrospect and prospect, *Journal of Asian Studies* 51, 1 (1992) 3-29.

³⁵ B.L. Walker, *The Conquest of Ainu Lands: Ecology and Culture in Japanese Expansion, 1590-1800*, Berkeley, 2001, 138-150. Mogami Tokunai wrote several ethnographies and accounts of his travels, but perhaps the most famous is *Ezokoku fūzoku ninjō no sata [1791]*, in: S. Takakura (Ed.), *Nihon shomin seikatsu shiryō shūsei*, Vol. 4, Tokyo, 1969.

³⁶ K. Unno, Cartography in Japan, in: J.B. Harley and D. Woodward (Eds), *The History of Cartography: Cartography in the Traditional East and Southeast Asian Societies*, Vol. 2, Chicago, 1994, 445, 446. The 1785-1786 survey produced the *Ezochi ikken [1784-1790]*, in: Hokkaidō (Ed.), *Shin Hokkaidōshi*, Vol. 7, Sapporo, 1969.

- ³⁷ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1). For more on European cartographers and spatial renditions of Ezochi, see A. Boscaro and L. Walter, Ezo and its surroundings through the eyes of European cartographers, in: L. Walter (Ed.), *Japan: A Cartographic Vision*, Munich, 1994, 84-90.
- ³⁸ C. Totman, *Early Modern Japan*, Berkeley, 1993, 484, 485.
- ³⁹ Walker, The early modern Japanese state and Ainu vaccinations (note 24), 137e139.
- ⁴⁰ K. Kubota, *Hokuchi nikki* (1804). Resource Collection for Northern Studies, Hokkaido University Library, Sapporo, Japan. I am grateful to Tsuchiya Tatsuhide for bringing this document to my attention and for helping to decipher it.
- ⁴¹ J. Ōmura, in: S. Mori (Ed.), *Shizanki: Ōmura Jigohei ni yoru Etorofutō jiken*, Tokyo, 1977, 266.
- ⁴² M.L. Pratt, *Imperial Eyes: Travel Writing and Transculturation*, London, 1992, 9-15.
- ⁴³ A. Crosby, *The Measure of Reality: Quantification and Western Society, 1250-1600*, Cambridge, 1997.
- ⁴⁴ J.B. Harley, in: P. Laxton (Ed.), *The New Nature of Maps: Essays in the History of Cartography*, J.H. Andrews (Intro), Baltimore, 2001, 52e55. On the relationship between maps and imperialism, see M.H. Edney, *Mapping an Empire: The Geographical Construction of British India, 1765-1843*, Chicago, 1999; B.E. Mundy, *The Mapping of New Spain: Indigenous Cartography and the Maps of the Relaciones Geograficas*, Chicago, 2000; I.J. Barrow, *Making History, Drawing Territory: British Mapping in India, ca. 1756-1905*, Oxford, 2004.
- ⁴⁵ Harley, *The New Nature of Maps* (note 44), 57.
- ⁴⁶ S. Ryan, *The Cartographic Eye: How Explorers Saw Australia*, Cambridge, 1996, 4, 5
- ⁴⁷ D. Clayton, The creation of imperial space in the Pacific Northwest, *Journal of Historical Geography* 26, 3 (2000) 328, 329; more recently, see D. Clayton, *Islands of Truth: The Imperial Fashioning of Vancouver Island*, Vancouver, 2000.
- ⁴⁸ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 286; see also D. Matsuda, *Hokuidan* (n.d.), in: S. Takakura (Ed.), *Nihon shomin seikatsu shiryō shūsei*, Vol. 4, Tokyo, 1969. Golovnin actually met Mamiya while incarcerated. He wrote:

In the meanwhile we formed an acquaintance with a geometrician and astronomer, named Mamia Rinso, who had been sent from the Japanese capital. [He] shewed us his instruments, which consisted of an English sector, an astrolabe, with a compass, a case of mathematical instruments, and quick-silver for forming the artificial horizon, and requested that we would shew him how the Europeans employed these things. He visited us everyday, and frequently remained with us from morning until evening, during which time he gave us an account of his travels, and produced his plans and sketches of the different countries he had visited. We inspected them with the greatest curiosity. The Japanese looked upon him as a very learned man. They always listened to him with the utmost attention, and wondered how he could have travelled to so many different places: he had visited all the Kurile

Islands, as far as the seventeenth, Sagaleen, and even the land of Mandshuren [Manchuria], and had sailed through the river Amur.

See Captain Golownin (Vasilii Mikhailovich Golovnin), *Memoirs of a Captivity in Japan, During the Years 1811, 1812, and 1813; with Observations on the Country and the People*, Vol. 1, London, 282, 283.

⁴⁹ Mamiya Rinzō's two expeditions to Sakhalin Island are well documented in the secondary literature and, in some respects, are the stuff of legends in Japan. See, for example, E. Akaba, *Mamiya Rinzō: Hoppō chirigaku no kensetsusha*: Tokyo, 1974, 78-113; T. Uryū, *Mamiya Rinzō*, Tokyo, 1974, 102-126; T. Arai, *Mamiya Rinzō: Nihon sokuchigaku no sentatsu*, Tsuchiura, Ibaraki Prefecture, 1981, 35-50; S. Nakamura, *Hoppō senri o yuku: Mamiya Rinzō no shōgai*, Tokyo, 1982, 118-128; T. Ōtani, *Mamiya Rinzō no saihakken*, Tsuchiura, Ibaraki Prefecture, 1983; A. Koyano, *Mamiya Rinzō onmitsusetsu no kyojitsu*, Tokyo, 1998, 56-86.

⁵⁰ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 288.

⁵¹ See R. Mamiya (with T. Murakami), in: T. Hora and S. Tanisawa (Eds), *Tōdatsu chihō kikō*, Tokyo, 1988, 116-165.

⁵² Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 290.

⁵³ Walker, *The Conquest of Ainu Lands* (note 35), 134, 135.

⁵⁴ Livingstone, *Putting Science in its Place* (note 29), 155.

⁵⁵ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 290-292.

⁵⁶ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 435, 438, 439.

⁵⁷ Akizuki, *Nihon hokuhen no tanken to chizu no rekishi* (note 1), 294.

⁵⁸ M.T. Hodgen, *Early Anthropology in the Sixteenth and Seventeenth Century*, Philadelphia, 1964.

⁵⁹ On Ezogashima as the northern edge of the medieval Japanese realm, see B. Batten, Frontiers and boundaries of pre-modern Japan, *Journal of Historical Geography* 25, 2 (1999) 166-182; more recently, B. Batten, *Nihon no 'kyōkai': Zenkindai no kokka, minzoku, bunka*, Tokyo, 2000; B.L. Batten, *To the Ends of Japan: Premodern Frontiers, Boundaries, and Interactions*, Honolulu, 2003.

⁶⁰ T. Morris-Suzuki, The frontiers of Japanese identity, in: S. Tønnesson and H. Antlöv (Eds), *Asian Forms of the Nation*, Richmond, 1996, 42, 44; see also T. Morris-Suzuki, *Re-Inventing Japan: Time, Space, Nation*, New York, 1998, 11-20.

⁶¹ M. Yonemoto, *Mapping Early Modern Japan: Space, Place, and Culture in the Tokugawa Period (1603-1868)*, Berkeley, 2003, 6, 67, 101.

⁶² Morris-Suzuki, The frontiers of Japanese identity (note 60); see also Morris-Suzuki, *Re-Inventing Japan* (note 60).

⁶³ Morris-Suzuki, *The frontiers of Japanese identity* (note 60), 51.

⁶⁴ For more on this literature, see B.L. Walker, Foreign affairs and frontiers in early modern Japan: a historiographical essay of the field, *Early Modern Japan: An Interdisciplinary Journal* 10, 2 (2002) 51-55. This essay can also be found in J.E. Hanes and H. Yamaji (Eds), *Image and Identity: Rethinking Cultural History*, Kobe, 2005.

⁶⁵ R.P. Toby, Kinsei-ki no 'Nihon zu' to 'Nihon' no kyōkai, in: H. Kuroda, M.E. Berry and F. Sugimoto (Eds), *Chizu to ezu no seiji bunkashi*, Tokyo, 2001, 79-102.

⁶⁶ Yonemoto, *Mapping Early Modern Japan* (note 61), 78, 79.

⁶⁷ R.P. Toby, The 'Indianness' of Iberia and changing Japanese iconographies of other, in: S. Schwartz (Ed.), *Implicit Understandings: Observing, Reporting, and Reflecting on the Encounters Between Europeans and Other Peoples in the Early Modern Era*, Cambridge, 1994, 331.

⁶⁸ L.M. Cullen, *A History of Japan, 1582-1941: Internal and External Worlds*, Cambridge, 155, 156.

⁶⁹ J.J. Stephan, *Sakhalin: A History*, Oxford, 1971, 63-65.

⁷⁰ The history of disease exchange between Japanese and Ainu is covered in chapter 7 of Walker, *The Conquest of Ainu Lands* (note 35). On the endemic nature of smallpox and other diseases in early modern Japan, see A.B. Jannetta, *Epidemics and Mortality in Early Modern Japan*, Princeton, 1987.

⁷¹ Howell, *Geographies of Identity* (note 15), 186-189.

⁷² Stephan, *Sakhalin* (note 69), 142, 143.