End of Okhotsk?

A Peer Polity Interaction approach
to the interaction, exchange and decline
of a Northeast-Asian maritime culture
on Hokkaido, Japan

By Joran Smale

Cover illustrations

- **Middle**: Okhotsk pit house 15 from the Tokoro-chasi site http://www.city.kitami.lg.jp.e.fu.hp.transer.com/docs/7287/, retrieved 01-04-2014.

- **Top left:** Okhotsk pottery from pit house 15 of Tokoro-chasi site (photo by Norihiro Ueno) http://www.city.kitami.lg.jp.e.fu.hp.transer.com/docs/7287/, retrieved 01-04-2014.

- **Top right:** Bear carving from pit house 15 of Tokoro-chasi site, ±3 cm wide, approx. 900 AD http://www.city.kitami.lg.jp.e.fu.hp.transer.com/docs/7287/, retrieved 01-04-2014.

- **Bottom left:** Okhotsk bear sculpture from Tokoro-chasi site, pit no. 1, 8-10th centuries, 5.4 cm long (photo by Norihiro Ueno) http://www.um.u-tokyo.ac.jp/publish_db/2002Okhotsk/01/1100.html, retrieved 01-04-2014.

- **Bottom right:** Okhotsk figurine from Hamanaka-2 site. Bottom right shape has been interpreted as a bear cub. Photo by Ushio Maeda (Hudson 2004, 300)

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Preface

I would like to take this opportunity to thank the people who have contributed to the writing of this thesis. First of all, I would like to thank Dr. Andrzej Weber and Dr. Hirofumi Kato, for allowing me to participate in the excavation of the Hamanaka 2 site on Rebun Island. I am also grateful to Dr. Tetsuya Amano, for providing relevant data on the Kafukai A site and Okhotsk metallurgy. Dr. Gary Crawford provided valuable feedback on my thoughts about the issues of cultural transitions and early agriculture on Hokkaido, for which I am very thankful. I am also highly grateful to Dr. Ilona Bausch, who provided me with access to some relevant source material, as well as many an opportunity to discuss the topic of this thesis with herself and others. Lastly, I want to thank my grandmother Henny Beumkes for her support during my studies and particularly the writing process. She passed away before having a chance to see the end result. I dedicate this thesis to her memory.

1 – Introduction

Where does one culture end and a new one begin? Cultural transitions are never as simple as beginnings and endings. A variety of processes and factors play a role in cultural change. One case in which this is very evident is that of the Okhotsk culture of northern Japan. This culture of maritime hunter-gatherers prospered roughly between the 6th and 12th century AD. Emerging on the island of Sakhalin, and spreading along the coast of northern Hokkaido all the way into the Kuril Islands (fig. 1), these people were highly specialized in marine subsistence. Their neighbours in the inland and south of Hokkaido, the Satsumon people (8th -14th centuries), had a wholly different way of life centered around agriculture, inland hunting and fishing in rivers. By the 12th century, these cultures have supposedly merged (Hanihara 2010, 163; Hudson 2004, 290; Ohyi 1975, 147-148; Sakaguchi

Fig. 1: Map of East-Asia, highlighting the area under research (adapted from http://www.pmel.noaa.gov)

2007a, 33; Sato *et al.* 2009, 409; Yamaura 1998, 330). This resulted in the formation of proto-Ainu culture. Many characteristics of Okhotsk culture disappeared, such as a specialized marine subsistence, hexagonal pit houses and pottery. This change is therefore seen as the disappearance of Okhotsk culture (Ohyi 1975, 148). However, this transition is still shrouded in many questions. In what way did Okhotsk culture contribute to this transition? How did Okhotsk and Satsumon people interact with and impact on each other before transitioning or merging into proto-Ainu culture?

1.1 – The bigger picture: cultural change, interaction and exchange

The fate of Okhotsk culture is a complicated and unique affair, one particular aspect being its highly linear distribution of sites along the coast. Mark Hudson intriguingly defined Okhotsk culture as a distinct, separate culture lasting 600 years, which was eventually completely assimilated or replaced by other groups (Hudson 2004, 290). How, then, does a culture constitute their own traditions in the vicinity of neighbouring people and foreign materials and objects for such a significant amount of time? How did their use contribute to differentiation of their culture or incorporation in relation to the neighbouring people? Hudson's description of Okhotsk culture was the reason I wanted to analyze in more detail the changes occurring at the end of the Okhotsk period. The setting of a marine hunter-gatherer culture that is in contact with an agricultural society is unknown on the North-American side of the Pacific (Workman & McCartney 1998, 367). Hopefully, this fascinating dynamic can be understood better through my research. I intend to shed a light on issues of cultural interaction, the effects of trade and exchange and cultural change.

1.2 – A short history of Okhotsk culture studies

The history of archaeological research of Okhotsk culture is relatively young as it only really emerged in the 1930s. Previously, scholars had trouble defining it, ascribing archaeological remains to the Ainu or other known regional cultures (Befu and Chard 1964, 1). Archaeological investigations intensified in the 1940s and a

conscious effort was made to define the characteristics of what was now named Okhotsk culture, after the Sea of Okhotsk around which the coastal sites of this archaeological culture were located. Obstacles for research came in the form of World War II and Russian possession of Sakhalin and the Kurils, which left only sites in Hokkaido for investigation. Come the 1960s, research started again on a small scale on Sakhalin and the Kurils (Befu and Chard 1964, 1).

It took until 1964 for research by Western scholars about the Okhotsk culture to be published, in English, by the aforementioned Befu and Chard (Ohyi 1975, 123). Since then, the focus of research in the region has mostly been on issues of ecological adaption (e.g. Andrzej, Jordan and Kato 2012; Fitzhugh 1975; Workman and McCartney 1998). More recently, studies of the genetic origins of Okhotsk culture and their connection with Satsumon and Ainu culture have been done. Researchers found that the Okhotsk people also had a marked genetic affinity with the Ainu living on Hokkaido, corroborating the idea that Okhotsk and Satsumon populations intermixed genetically in the process of becoming Ainu. Another ancient DNA analysis by this team also confirmed genetic differences between Okhotsk and Epi-Jōmon populations based on the wet-type allele for earwax (Sato *et al*. 2009, 411). This kind of evidence is outside the scope of this thesis, but for those interested, genetic and morphological links are discussed in articles such as Fukumoto and Kondo 2010, Hanihara *et al.* 2008, Hanihara 2010, Ishida 1994, Ishida 1996, Kaburagi *et al.* 2010, Matsumura *et al.* 2009, Sato *et al.* 2007. For now, it suffices to say that there is indeed some genetic evidence for interaction between Okhotsk and Satsumon culture.

All in all, the amount of internationally published pieces in English about Okhotsk can hardly be called abundant. Many publications about Okhotsk and Satsumon culture are in Japanese and Russian, limiting the amount of sources I am able to consult on the topic of this thesis. I will make use of the English material available. This mainly consists of secondary literature from edited books by multiple authors (e.g. Fitzhugh 1975; Fitzhugh and Dubreuil 1999; Jordan and Zvelebil 2010), as well as multiple articles on more specific Okhotsk topics, both by western and Japanese researchers (e.g. Amano *et al.* 2013; Befu and Chard 1964;

Hall, Maeda and Hudson 2002; Hudson 2004; Weber, Jordan and Kato 2012; Masuda, Amano and Ono 2001; Matsumura *et al.* 2006; Oba and Ohyi 1981; Okada 1989; Sakaguchi 2007a+b, Yamaura 1998). As an English piece itself, I intend for this thesis to contribute to the information on the Okhotsk culture available in English.

1.3 – Ainu heritage

It is generally agreed that the Satsumon culture is at least in part ancestral to Ainu culture, but I postulate that Okhotsk culture played an important role in this transition as well. The Ainu are an indigenous people with their own language and with origins different from Japanese. They live in Japan up to this day, mostly on Hokkaido. Unlike the later given names of Okhotsk and Satsumon culture, the name of the Ainu people is known from historical documents. The earliest description of the people Ainu is found in a document dated to 12th century AD Yuan Dynasty China. This document describes a feud on Sakhalin between the Nivkh and the Kugi, the latter of which are recognized to be Ainu based on the characteristics that are mentioned in it (Okada 2012, 3). In Japanese documents, the earliest mention of the Ainu is found in a document called the *Suwa Daimyojin Ekotoba* dated to 1356 AD. The ancestors of the modern Japanese, called *wajin*, came to Hokkaido for economic exploitation in the 15th century, bringing with them diseases and disregarding the rights of the indigenous populace. Further conflicts thinned out the number of Ainu considerably. Japan continued to skirt around the issues with the Ainu over the years, denying the existence of ethnic minority groups in Japan (Okada 2012, 3-4). The Ainu were only as recently as 2008 officially recognized by the Japanese government as an indigenous people. This makes the origins of Ainu culture a relevant topic concerning Ainu identity and cultural heritage. Having a better understanding of the origins of Ainu culture may support their status as an ethnic group with their own distinct cultural heritage.

1.4 – Cultural interactions and the end of Okhotsk culture

In this thesis, I will investigate the processes of cultural change on Hokkaido at the time of this critical transition: that of Okhotsk culture into Satsumon and Ainu culture on Hokkaido. As noted before, earlier research has focused more on ecological adaptation. The link between Satsumon and proto-Ainu culture, both culturally and genetically, has also been subject to study. However, I assert that approaching the issue from this perspective obscures the role that Okhotsk culture played in this cultural transition, especially regarding the symbolic aspects of exchange. Obviously, there would have been interaction between bearers of Okhotsk and Satsumon culture, but as Hudson (2004, 290) mentioned, Okhotsk people managed to reproduce their culture for hundreds of years, before the transition to what is recognized as proto-Ainu culture. To compensate for the relative lack of attention to the cultural influence of Okhotsk culture in this process, I shall apply the framework of Peer Polity Interaction (PPI), as defined by Renfrew and Cherry (1986, 1-18), to Okhotsk-Satsumon interaction on Hokkaido. In this theoretical framework, two neighbouring polities are regarded as politically independent, interacting groups (Renfrew and Cherry 1986, 7). This allows us to investigate the processes of interaction and exchange that led to social change in a different way, without assuming dominance of one neighbouring polity over the other. This makes it possible to investigate the processes of interaction and exchange that led social change, originating neither exclusively exogenous nor endogenous to a society, but somewhere in between (Renfrew and Cherry 1986, 6). This is relevant because it can inform us about processes of cultural change in a setting where two societies are not simply either dominantly influencing or passively being influenced, respectively. It must be noted that Peer Polity Interaction theory has been developed with societies in the process of early state formation in mind, for example the ancient Greek city states (Renfrew and Bahn 2008, 388). However, I believe the aforementioned benefits of this model can help provide valuable insight in this case study of Okhotsk culture. Part of this research will therefore be an assessment of the applicability of Peer Polity Interaction theory on a marine hunter-gatherer and farmer interactions.

In short, by applying a Peer Polity Interaction framework, it is my intention to contribute to a better understanding of the role of Okhotsk culture in the transition to Ainu culture. The main question of this thesis then becomes: To what extent can the application of Peer Polity Interaction theory on material culture found at Okhotsk archaeological sites inform us about the role of Okhotsk interaction and exchange with Satsumon culture in the transition to proto-Ainu culture that took place on Hokkaido at the end of the Okhotsk period?

1.5 – Methodology and the application of Peer Polity Interaction theory

To understand the current state of research regarding this issue, I will first explain the different existing hypotheses on the fate of Okhotsk culture. These can be roughly grouped in three categories: those concerning trade, conflict and migration. This way the most prominent and common theories will be reevaluated. Then, I will attempt to clarify the demise of Okhotsk people from the perspective of the interaction with their neighbours on Hokkaido. To this end, I shall apply the aforementioned theoretical framework of Peer Polity Interaction, as it allows for a focus on the processes of interaction from the perspective of two neighbouring polities or groups without the assumption that one was dominant over the other. This theory has not yet been applied as such to Okhotsk culture, so I intend to contribute new information by applying a different perspective on this interesting case of cultural interaction.

In applying the concept of Peer Polity Interaction as defined by Renfrew and Cherry (1986, 1-18), I will examine the archaeological evidence for the different forms of interaction that PPI theory distinguishes between: competition, competitive emulation, warfare, transmission of innovation, symbolic entrainment, ceremonial exchange of valuables, flow of commodities, and language and ethnicity. In this way, not only material but also symbolic aspects of trade are taken into account. This is reflected in the archaeological materials I have chosen to examine and will be explained shortly.

I have compiled all excavation data on Okhotsk archaeological sites on Hokkaido that could be derived from the English language sources available at the

Fig. 2: Map of Hokkaido showing the 32 Okhotsk sites that provided data for this study

Table 1: Overview of the names, region and cultural phase of the 32 sites investigated in this thesis.

Site name	Region	Cultural phase
1. Hamanaka 2	Northern Hokkaido	Early to Late Okhotsk
2. Funadomari	Northern Hokkaido	Okhotsk period
3. Kafukai A	Northern Hokkaido	Okhotsk and Satsumon period
4. Osshonai	Northern Hokkaido	Okhotsk period
5. Motochi	Northern Hokkaido	Okhotsk period
6. Tanetonnai	Northern Hokkaido	Late Okhotsk period
7. Oniwaki	Northern Hokkaido	Okhotsk period
8. Ōmisaki shell mound	Northern Hokkaido	Okhotsk period
9. Pirikatai	Northern Hokkaido	Okhotsk period
10. Koetoi	Northern Hokkaido	Okhotsk period
11. Tomiiso	Northern Hokkaido	Okhotsk period
12. Onkoromanai	Northern Hokkaido	Okhotsk period
13. Tomarinai	Northern Hokkaido	Okhotsk period
14. Kawajira-kita	Northern Hokkaido	Okhotsk period
15.Menashidomari	Northern Hokkaido	Okhotsk period
16. Sakaeura II	Eastern Hokkaido	Okhotsk period, AD 900
17. Tokoro chasi	Eastern Hokkaido	Okhotsk period
18. Omagari	Eastern Hokkaido	Okhotsk period
19. Futatsuiwa	Eastern Hokkaido	Okhotsk period
20. Moyoro shell mound	Eastern Hokkaido	Okhotsk period
21. Motomachi	Eastern Hokkaido	Okhotsk period
22. Utoro	Eastern Hokkaido	Okhotsk period
23. Aidomari	Eastern Hokkaido	Okhotsk period
24. Sashirui	Eastern Hokkaido	Okhotsk period
25. Tobinitai	Eastern Hokkaido	Okhotsk period, Tobinitai phase
26.Tsujinaka	Eastern Hokkaido	Okhotsk period
27. Matsunorikawa	Eastern Hokkaido	Okhotsk period
28. Tōsampuru	Eastern Hokkaido	Okhotsk period
29. Bentenjima	Eastern Hokkaido	Okhotsk period
30. Shimo-tōbetsu	Eastern Hokkaido	Okhotsk and Satsumon period, Tobinitai phase
31. Chatsu 4	Western Hokkaido	Okhotsk period
32. Aeonae dune	Western Hokkaido	Okhotsk period

time of writing, and is informative of intercultural interaction (fig. 2). Based on this, the categories of archaeological evidence that I have chosen to investigate are pottery, burials, site location, ritual deposits, artefacts and subsistence. However, not all of these proved equally informative. In the end, the data on pottery, bear ritual artefacts and remains, and iron artefacts proved substantial enough to work with. After consideration of all available sources, 32 Okhotsk archaeological sites were found to be useful for this analysis (table 1). Based on the data from these sites, I have created derivative tables of data relevant to several of the categories of interaction. In the chapter following the analysis, I will interpret the results and discuss how they compare with the aforementioned existing theories about what happened to Okhotsk culture.

1.6 – Hypothesis

I hypothesize that Okhotsk culture was well adapted to its environment, and that there was no violent conflict between Okhotsk and Satsumon culture. This is based on the fact that they exploited different resources for subsistence. The two occupied largely different subsistence niches, with Okhotsk culture focusing on marine subsistence at sites along the coast. Satsumon culture sites on the other hand, are found further inland and show a more agricultural lifestyle incorporating some hunting and riverine fishing. In the absence of conflict, I predict that instead, other types of interactions would have taken place. These would have been of a mutually beneficial nature for both the Okhotsk people on the one hand and the Satsumon people on the other. This would explain the appearance of Satsumon characteristics in Okhotsk culture following a prolonged period of interaction and exchange. After this, northward expansion of Satsumon people was not met with hostility and both cultures grew similar to one another, eventually forming Ainu culture.

In the summer of 2011, I have experienced working with Okhotsk material culture on the excavation of the Hamanaka-2 site on the north end of Rebun Island. Situated just west of the northern tip of Hokkaido, this site contains shell midden remains from the Okhotsk period, as well as remains of the Epi-Jōmon phase (100 BC-AD 600) that precedes it and the Ainu period that follows it. Participating in

this excavation made me aware of some of the complications in the archaeology of this area. These complexities can be illustrated by a quote of the Japanese lead excavator Hirofumi Kato, who described the island as a "cross road used repeatedly by people from North and South (sic)" (Kato 2012, 1).

Before diving into the theoretical framework and analysis central to this thesis, I will first dedicate a chapter to establishing the typical characteristics of Okhotsk and Satsumon culture, to illustrate some of the key distinctions between the two regarding subsistence, settlement, tools and technology, and ritual. This will serve as a basis for understanding the more detailed information regarding interaction and exchange that will follow in the subsequent chapters.

2 – Background: chronology, climate, origins and characteristics of Okhotsk and Satsumon culture

In this chapter, I will provide general background information about the chronology of cultural phases on Hokkaido, its climate and fauna, and discuss some ideas about the origins of Okhotsk culture. I will then list some general characteristics of both Okhotsk and Satsumon culture, in preparation for my Peer Polity Interaction analysis in chapters 5 and 6. The characteristics are divided into four categories that clearly illustrate some of the key distinctions between Okhotsk and Satsumon culture: subsistence, settlement, tools and technology, and lastly ritual.

2.1.1 – Chronology

Approximately 2000 years ago, the Neolithic Jōmon hunter-gatherer culture of Japan came to an end in most of Japan through a migration of the ancestors of the modern Japanese into the archipelago. However, on the northern island of Hokkaido, Jōmon culture persisted for a while longer under the moniker of Zoku- (meaning 'northern'), Post- or Epi-Jōmon. There, these Epi-Jōmon people existed between 100 BC and AD 550 (table 1). Two separate cultures - while retaining certain Jōmon characteristics - have been identified as emerging to replace them: Satsumon culture, in the 7th and 8th centuries on southern Hokkaido, and Okhotsk culture, already in the 4th and 5th centuries on Southern Sakhalin (fig. 1) (Fitzhugh 1999, 18).

Okhotsk culture was able to quickly start its migration south from Sakhalin over to Hokkaido, along its east coast and to the Kurils as well, over the course of the 6th and 7th centuries. Preceding Okhotsk culture on Sakhalin is the Susuya phase, which used to be regarded as the initial stage of Okhotsk culture (Zhushchikhovskaya 2010b, 44) and is since seen as a separate cultural unit (e.g. Hudson 2004, 291; Ishida 1994, 372). A lack of skeletal remains from this phase makes it difficult to judge whether or not they should be regarded as first phase of Okhotsk culture (Ishida *et al.* 1994, 372). The other areas of Hokkaido were likely already occupied by Epi-Jōmon peoples. These Epi-Jōmon people transitioned into

Table 2: Chronological overview of the cultural phases on Hokkaido (adapted from Hudson 2004, 291).

Approximate dates	**Northeast Hokkaido**	**South and west Hokkaido**
1600-1869	Classic Ainu	Classic Ainu
1200-1600	Formative Ainu	Formative Ainu
1000-1200	Final Okhotsk (Tobinitai)	Late Satsumon
800-1000	Late Okhotsk	Middle Satsumon
550-800	Early Okhotsk	Epi- Jōmon/Early Satsumon
100BC-550	Epi- Jōmon and Susuya	Epi- Jōmon

Satsumon culture (8th-14th century), developing in southern and central Hokkaido (Sato *et al.* 2007, 618). Hudson divides the Okhotsk period in an Early (6th-8th centuries), Late (9th to 11th centuries) and Final (Tobinitai) phase (late 11th-12th centuries) for the Hokkaido region (Hudson 2004, 291). In Japanese nomenclature, the early phase is also known as the Towada phase (Ishida *et al.* 1994, 364). Around AD 1000 Okhotsk culture on Hokkaido starts to retreat and confine itself to the north, supposedly influenced by a northward migration of Satsumon people (Yamaura and Ushiro 1999, 44).

The date of the end of Okhotsk culture is less well defined. In Hokkaido it may have ended as early as the 9th or 10th century (Hudson 1999, 225). In eastern Hokkaido, a hybrid culture of Okhotsk and Satsumon, known as Tobinitai, is said to have lasted until the 12th or possibly 13th century (Hudson 1999, 225). By the 15th century, most of the region has transitioned into what is regarded as the Ainu cultural phase (Fitzhugh 1999, 18). Ohyi (1975, 152) mentions Vasilievsky, who in 1970 proposed that Okhotsk people may have existed as late as in the 1700s on the Kurils. Befu and Chard (1964, 15) refer to Sakuzaemon Kodama (1948) and Osasmu Baba (1943), who all mention an interesting historical document that suggests this may be true for the Kuril Islands at least, but others already ascribe the Kurils to Ainu culture at this time.

The period from approximately AD 500-1500 is known as the Palaeometal period for Sakhalin. This is because as far as we know, iron artefacts were not produced by the Okhotsk people themselves, but were imported from the Japanese islands and most likely the Russian mainland as well (Zuschikhovskaya 2010, 138-139). Befu and Chard (1964) as well as Ohyi (1975) have discussed other chronological subdivisions of the Okhotsk period, based mostly on pottery typology. These ceramic assemblages will be explained later this chapter.

2.1.2 – Climate and fauna

Across Okhotsk and Satsumon territory, different ecological circumstances existed, which also had an impact on the kinds of fauna that were present. On Sakhalin and northern Hokkaido fur seals were plentiful, but not on eastern Hokkaido. Contrary to the first two though, eastern Hokkaido did have deer. Despite the fact that the rather homogenized toolset of the Okhotsk on Hokkaido seems to have been suited well enough, it had to be adapted to account for such differences (Ohyi 1975, 141). This change in subsistence has later been reason to define this eastern group as the Tobinitai culture, a hybrid of Okhotsk and Satsumon culture that also relied more on salmon fishing (Hudson 1999, 225).

Environmental research by Japanese scientists has provided indications for the existence of a warm phase, two to three degrees higher, between the 8th and 14th centuries. This is followed by a cold stage, lasting until around 1900. Hudson notes that these phases correlate with the Satsumon and Ainu culture periods in Hokkaido (Hudson 1999, 229). Data from the shells found in Okhotsk period shell middens shows a slightly different picture, as Yamaura (1998, 323-324) mentions higher marine temperatures between the 6th and 10th centuries. According to Hudson (1999, 229), Hiroshi Ushiro proposes that Okhotsk exploitation of Hokkaido's east coast was possible due to a lack of sea ice in the warm period. The warmer temperatures may have benefitted the practice of winter fishing. However, Yamaura (1998, 325) notes that pinniped exploitation is possible when the sea ice they live on is present. The number of whales could also have been reduced during these times. As for rice farming, some believe that the climate on Hokkaido was too harsh to be a reliable

source of subsistence (Yamaura & Ushiro 1999, 42). Information on the impact of climatic change on Satsumon culture in particular is lacking, perhaps due to a lesser focus on behavioral ecology in Satsumon research, when compared to Okhotsk culture studies. We can assume the bearers of Satsumon culture were subject to the same climate on Hokkaido as the Okhotsk people, but the specific way they adapted to this remains to be investigated elsewhere.

2.1.3 – Origins and diffusion

While the topic of this thesis concerns itself mostly with the decline of Okhotsk culture, I would like to take the time to discuss some of the theories regarding its origins. Early research by Befu and Chard (1964, 12-13) proposes an Eskimo-Aleut origin for the Okhotsk people based on similarities in their marine subsistence strategy, and Ohyi (1975, 151) also mentions that in 1947 Sakuzaemon Kodama suggested an origin for the Okhotsk in the form of an Aleut population migrating through the Kuril Islands. Based on the fact that early Okhotsk material is found on southern Sakhalin, I agree with Ohyi that this is an unlikely theory.

The Okhotsk people are seen by some as the direct descendants of the Susuya people, who existed between 500 BC and AD 500 (uncalibrated) (Zhushchikhovskaya 2010a, 138). The subsistence pattern of the Susuya culture was much the same as that of the Okhotsk, consisting of sea-mammal hunting, sea gathering and some land gathering. Their pottery was decorated with serial punctuation below the rim, characteristic enough for it to be ascribed to this separate Susuya phase (Zhushchikhovskaya 2010a, 138; Zhushchikhovskaya 2010b, 45).

However, Ohyi (1975, 133) has a different opinion, saying that those similarities in decoration style are the limit of their affiliation, and that the genetic origin of the Okhotsk is to be found on southern Sakhalin. He deems the Okhotsk people an intrusive exotic culture. He does, however, consider the probability that the components of early Okhotsk culture were derived from multiple sources by complicated processes (Ohyi 1975, 137). For example, the comb-like impressions are also found on northern Sakhalin and in the lower Amur region. The practice of pig domestication also likely hails from this area. As there are no wild boar on

Hokkaido and Sakhalin, they had to be imported from the mainland. However, the Okhotsk culture's characteristically high marine specialization, evident from the bone and antler tools, is absent there. Okhotsk culture also has some similarities to the marine specialization and stone tool technology of the Epi-Jōmon cultures that lived in southern Hokkaido, indicating another possible influence (Ohyi 1975, 138).

A fourth possible origin is the Ancient Koryak culture, the people of which lived along the northern coast of the Okhotsk Sea. It is the only culture in the surrounding area with a similarly high degree of marine specialization as evident from bone and antler tools. It is not known if this culture influenced Okhotsk culture, or the other way around (Ohyi 1975, 138 & 152-153). According to Ohyi (1975, 151), a certain Yamaguchi proposed a relationship of the Okhotsk with the Orochi people of the Amur river basin, but apart from the similarities that have been mentioned earlier, more research is needed.

The data of physical anthropological studies shows that the Okhotsk people are morphologically more similar to northern Mongoloid populations like the Nanai, Ulchi and Nivkh, again pointing to a northern origin for the Okhotsk people (Hudson 1999, 67). More recent research by Matsumura *et al.* (2009) also suggests an eastern Siberian origin based on dental morphology. The Okhotsk people, unlike Epi-Jōmon and Ainu populations in Hokkaido, also have a robust jaw and flat nasal region, common features in Northeast Asian populations (Matsumura *et al.* 2009, 121). Their research also showed that at least the dental traits of Okhotsk people were relatively similar to those of the Jōmon people. Similar conclusions were reached by Sato *et al.* (2007, 2010), who, through analysis of mitochondrial DNA and ABO blood group gene allele frequencies respectively, discovered a close relation between the Okhotsk and Nivkh and Ulchi people. Reasons for the move from the Amur River basin to Sakhalin have also been proposed. Political and social disturbances, inferred from the large amount of fortresses in the area, are seen as a more likely factor than environmental change, as this would have produced evidence of a more graduate migration than what is recognized archaeologically (Yamaura 1998, 328).

The origins of Satsumon culture, on the other hand, lie to the south. The rice farming Yayoi-culture spread through most of Japan since about 300 BC. On Hokkaido, as mentioned before, Jōmon culture continued on its own path for almost a century until AD 700. It is thought that the lower temperatures hampered the advance of rice farming, and/or the hunter-gatherer strategies in use on Hokkaido at the time were economically self-sufficient (Yamaura and Ushiro 1999, 42). This Epi-Jōmon culture did adopt agricultural techniques however, and their Esan ceramics also show influence from Tohoku, the northern province of Honshu, indicating relations between Hokkaido and Honshu at this point in time as well. Fishing techniques progressed as new types of harpoons came into use, incorporating iron (Yamaura and Ushiro 1999, 42). Some iron knives found in tombs, and traces of silver on the pieces of a knife case, may indicate trade relations with the China through the Amur River basin area (Kikuchi 1999, 49-50) and, again, northern Honshu (Yamaura and Ushiro 1999, 42). The Epi-Jōmon people of Hokkaido also used intricately carved spoons made of antler, bearing the image of killer whales and bears. Yamaura and Ushiro (1999, 45) suggest a similar use of these spoons as Siberian peoples had, in a ceremony not unlike the later Ainu *iyomante* or bear-sending ritual.

Four successive Satsumon groups are described by Ohyi (1975, 145), based on earlier research by Komai from 1964. The first two would have made their home on southern and central Hokkaido respectively. After that, they expanded to the north, leading to contact with Okhotsk culture (Ohyi 1975, 145-146). Yamaura and Ushiro (1999, 45) ascribe this to expansion policies from the Yamato Imperial Court. There is physical evidence for this in the form of a fortified stockade from Sendai on the Pacific coast with remains of an administrative office, dating to about AD 700, as well as historical evidence (the *Nihon Shoki,* or Chronicles of Japan) detailing the construction of fortified stockades in the 7th century AD (Yamaura and Ushiro 1999, 45).

2.2 – Okthotsk characteristics

Here, Okhotsk culture will be defined based on several key characteristics that illustrate in which ways it is distinct from Satsumon culture, namely subsistence, settlements, tools and technology, and ritual. Satsumon culture will then be defined using the same categories.

2.2.1 – Subsistence

There has been a strong focus in research on the ecology and high maritime adaptation of the Okhotsk people (Hudson 2004, 292). Sea-mammal hunting, shallow- and deep water fishing and a certain degree of hunting land animals were all a part of the Okhotsk hunting subsistence strategy. This is based on the artefacts in the Okhotsk toolset as well as faunal remains, both found in Okhotsk coastal sites. Rather unusual in this maritime-oriented subsistence is the breeding of pigs. This practice seems to have originated in the mainland lower Amur River basin in Siberia (Ohyi 1975, 139; Yamaura and Ushiro 1999, 43). In this area, pigs had been domesticated in the first millennium BC. In the first millennium AD, the Yi-lou people, following the Cidemi culture, also raised their own pigs. Any of these groups could have been the origin of Okhotsk pig domestication (Ohyi 1975, 139).

Well-preserved shell middens at the predominantly coastal sites of Okhotsk culture have provided much information on the diet of the Okhotsk people. At least 24 Okhotsk shell middens were known to exist along the Okhotsk Sea coast in 1998 (Okada 1998, 346 but see 347 for a faunal analysis of 18 of these middens). Some of these are the shell middens of Hamanaka-2 (Sakaguchi 2007a, 35), Kafukai A (Sakaguchi 2007a 47, Ohyi 1975, 133), Tanetonnai (Hall, Maeda and Hudson 2002, 216), Onkoromanai (Ohyi 1975, 138), Sakaeura II (http://www.city.kitami.lg.jp), Moyoro shell mound (Befu and Chard, 2-3) and Aeonae dune site (Matsumurae *et al.* 2006, 18). These shell middens are made up mostly of shells, fish bones and sea urchins. They also contain sea-mammal remains, such as fur seals, sea lions and whales, as well as land animals like dogs and bears (Ohyi 1975, 133). The ratio of land animals seems to be slightly higher for east Hokkaido, possibly because deer is more easily available there (Ohyi 1975, 141). Previous research on isotopic

values already showed the Okhotsk people indeed strongly relied on marine mammals (Naito *et al.* 2010, 672). There also seem to be regional differences. For example, in 1978 Nishimoto determined a higher reliance on fish for the Kafukai 1 site on Rebun Island by analyzing the nitrogen composition of amino acids found in human remains (Naito *et al.* 2010, 672). Furthermore, recent dietary reconstruction has been done on faunal remains from Rebun Island and the Hokkaido east coast by Naito *et al.* (2010). Their team similarly suggests a high reliance on marine food sources, especially fur seal, Pacific cod, greenling, Pacific herring, rockfish and a combination of boar and shika deer (Naito *et al.* 2010, 676). Differences in subsistence would likely have been necessary for groups living on the east coast of Hokkaido to compensate for the sea ice, because it prevents winter fishing. Hudson (2004, 294) notes that Tetsuya Amano, a prominent Okhotsk researcher from Hokkaido University, believes this led to the need for trade with the neighbouring Satsumon groups.

A more neglected side of Okhotsk subsistence is the plants they used and consumed. Flotation samples from five Okhotsk sites have yielded barley, foxtail and broomcorn millet. Their barley was notably of a thicker and wider variety than the barley cultivated by Satsumon people. Remains of weedy plants such as chenopod, elderberry, silvervine, grape and walnut have also surfaced (Crawford 2011, 339).

2.2.2 – Settlements

The Okhotsk people were sedentary year-round (Zhuschikhovskaya 2010, 138). Their large pit houses are usually found in bays and coves along the coast. They are either pentagonal or hexagonal in shape, at a size of about 10 meters across and with a clay-paved floor (fig. 3) The house frequently contains cranial remains of bears or sea-mammals on opposite ends. (Yamaura and Ushiro 1999, 44; Ohyi 1975, 132). Houses have been found to contain some pottery remains and stone, bone and antler implements (Ohyi 1975, 133). Shell middens are located not far from the houses. Hunting-fishing camps have also been found. According to Ohyi (1975, 143), population increase in Okhotsk territory would have led to dividing areas up

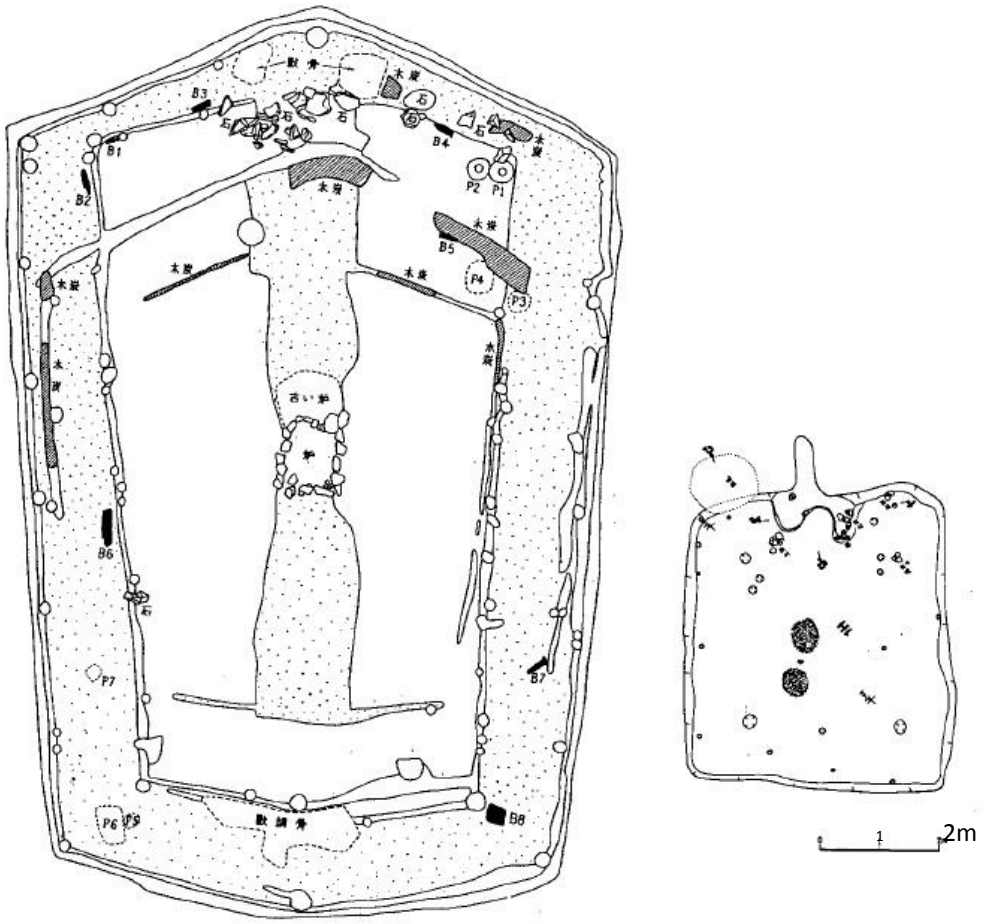

Fig. 3: Comparison of the size of an Okhotsk pit house (left) and a Satsumon house (right) (adapted from Onishi 2003, 163)

among multiple stationary settlements. In an area like eastern Hokkaido, he speculates that the inclusion of hunting land animals would have allowed a stronger economic base for this growth and change in settlement structure.

In eastern Hokkaido only, Okhotsk people seem to have had a penchant for constructing hearths with stone arrangements around them. Therefore, it is seen as an intrusive element from an adjacent area. Ohyi expects this to be the northern Kurils (Ohyi 1975, 144). The houses in eastern Hokkaido are also bigger than in the north (Hudson 2004, 298).

2.2.3 – Tools and technology

Okhotsk pottery exhibits a complex combination of elements from Hokkaido, Sakhalin and Amur River styles (Yamaura and Ushiro 1999, 43). Pottery assemblages that have been found are large and contain both broken and complete vessels. The pottery is fired at temperatures up to 750°C. The most common type of container was medium to large in size, 35-40 cm high and conical in shape (Zhushchikovskaya 2010a, 139). It is tempered using sand, or with fiber only in rare cases, and thought to have been made by stacking coils of clay. Its color ranges from dark grey to reddish brown (Befu and Chard 1964, 8). Several techniques of decoration were used, all applied to the upper half of the body of the vessel. These include embossing, cord impression, punctuation, parallel horizontal linear incision (sometimes using combs), stamping, noodle appliqué and pinching (fig. 4). (Befu and Chard 1964, 8-9).

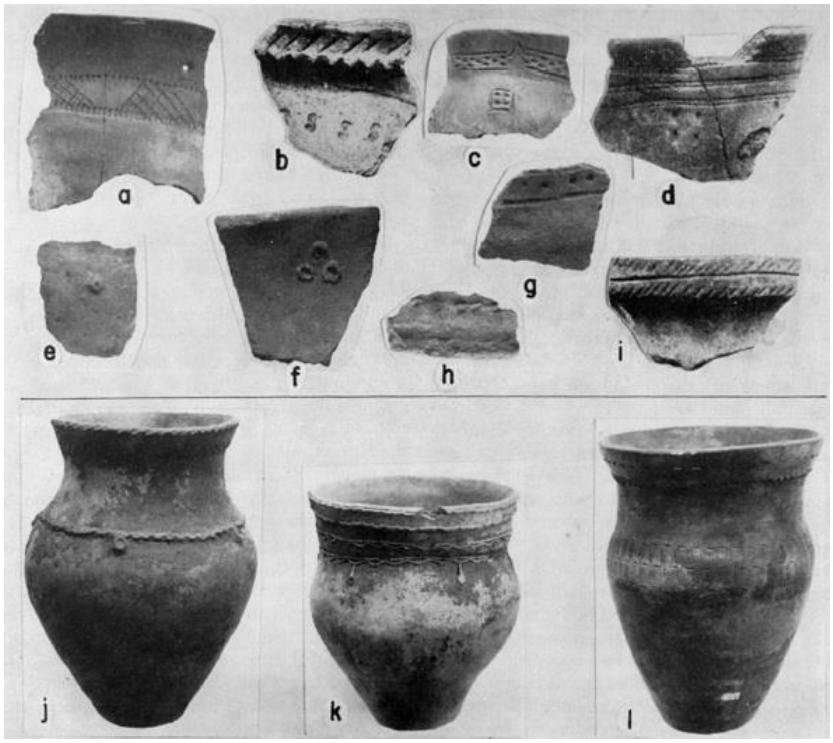

Fig. 4: Okhotsk pottery designs. a, checker; b, stamped; c, punctuation-incised; d, cord impression; e, embossed; f, circular; g, punctuation; h, pinched; i, linear incision; j, punctuate-pinched; k, noodle; and l, comb-incision (Befu and Chard 1964, 9)

Okhotsk pottery frequently contains thick layers of residue fit for analysis. Results of chemical phosphate analysis point to the use of ceramics for the thermal processing of sea-mammals. This is supported by isotope analysis of Okhotsk remains, revealing a diet that consists mostly of marine products (Zhushchikovskaya 2010a, 139).

Typologies for Okhotsk pottery have been developed since its discovery. The aforementioned chronologies of the Okhotsk period are based on previous research on Southern Sakhalin Okhotsk pottery from 1943 by Nobuo Itō, who determined nine different groups of pottery. Five of these were attributed to the Okhotsk: Towada type, Enoura A type, Enoura B type, Minami-kaizuka type and Higashi-taraika type. Apart from the last one, these were considered evolutional stages of the same tradition. (Ohyi 1975, 124). For Hokkaido, a ceramic typology of the Okhotsk period was made by Tsuyoshi Fujimoto in 1965. The assemblage there contains a type of noodle-appliqué pottery not found on Sakhalin. However, due to a lack of pottery finds in the north, most of the ceramics for his analysis were from eastern Hokkaido (Ohyi 1975, 126).

Given the fact that pottery is one of the categories of data that can inform us about cultural change, I would like to give a short overview here of the five subdivisions of assemblages as described by Ohyi (1975). This will give a chronological background to my pottery analysis in chapter 5. I have omitted site names for the sake of brevity. Unfortunately, this subdivision is based on relative dating methods such as typological succession and not absolute dating methods, so there are no specific dates for each phase.

The earliest assemblage of Okhotsk pottery is estimated to be from the 8th century and characterized by punctuations below the rim, as well as the occasional incised lines, short oblique incisions and broad bands of appliqué or buttons around the body of the vessel (Ohyi 1975, 126). It is conical or cylindrical in shape with a flat base. It is found on southern Sakhalin, and occasionally made its way to eastern Hokkaido as well. The punctuated motif is similar to Satsumon pottery at the time, indicating a possible connection.

The second type can be distinguished by the nail or spatula incised decorations along the neck and body of the pot. Comb-impressed stamps and incised lines are also found, but the series of punctuations known from the previous phase have disappeared. Most vessels are jars with wide mouth, a slightly contracted neck and flat bottoms. Its distribution ranges from Rebun Island in the north of Hokkaido to the east along the coast (Ohyi 1975, 128).

In the third stage, there is more regional differentiation. On southern Sakhalin Enoura A type is prominent, while in northern Hokkaido a new type is found, with serial short incisions, parallel incisions, and parallel lines with triangular ridges in between. In eastern Hokkaido, meanwhile, noodle appliqué starts to develop.

This trend continues in the next phase. In northern Hokkaido, parallel-incised lines with occasional serial short incisions are found, and once again the triangular motif. Eastern Hokkaido sees an abundance of the noodle appliqué decoration. Okhotsk pottery of the Kuril Islands shares elements with the Hokkaido types. Data on pottery from this phase on Sakhalin is insufficient, but a continuation of Enoura A type is likely (Ohyi 1975, 129-130).

The last stage of Okhotsk pottery consists of the Minami-kaizuka type in southern Sakhalin. It probably coexisted with Higashi-taraika type on the east coast of Sakhalin. On Hokkaido, influence from Satsumon style becomes clearly visible in the shape, with vessels having a curved rim, straight body and flat base. Decorations, however, are still Okhotsk in nature, including stampings and the triangular motif, similar to Sakhalin at this time (Ohyi 1975, 130). Eastern Hokkaido Okhotsk pottery also exhibits Satsumon shapes, but with the noodle-appliqué decoration typical for this area. Satsumon geometric incised decorations also appear. A similar style is again found on the Kuril Islands, but only the southern islands, not the north. Ohyi (1975, 131) suggests that in both northern and eastern Hokkaido we see a hybridization of Okhotsk and Satsumon styles. This final Okhotsk culture pottery type is dated to the 13th century AD. Ohyi (1975, 131) notes how Sakhalin does not have Satsumon settlements, whereas everywhere else Satsumon style now flourished. I find this contradicts more recent analysis by

Zhushchikhovskaya, who describes pottery on Sakhalin up until the middle of the second century AD. According to her, smaller vessels with straight walls, wide mouths and wide bottoms become more prominent there, which coincides with Ohyi's description of Satsumon pottery. There are also fewer large cooking containers. Zhushchikovskaya (2010a, 139) posits that this is possibly the result of the introduction of iron cauldrons, used for the same purpose, in combination with harsh climatic conditions for producing ceramic cooking containers. This is interesting because it could possibly explain a decline in Okhotsk pottery.

Stone implements of a somewhat poor quality are known from early sites such as the Moyoro shell mound. They display a large variety however, including ground axes, grinding stones, grooved or holed net-sinkers, arrowheads and harpoon points (Ohyi 1975, 132). Hammerstones, chisels scrapers, awls and knives can be added to that list. Stone lamps have been found on the Kurils, 17-35 cm in diameter, made by hollowing out the top of a natural rock (Befu and Chard 1964, 7).

Bone and antler tools might be thought to survive less often than stone tools. However, due to preservation in shell middens, the large assortment of bone and antler implements that the Okhotsk people used is revealed. Points, toggling and barbed harpoons, arrowheads, spatulas, shovels and composite fishhooks were all part of the Okhotsk repertoire. (Ohyi 1975, 132) Awls, spoons and bowls made of large vertebrae have also been found (Befu and Chard 1964, 8). Studies of the harpoon head technology of the Okhotsk have interestingly revealed a possible origin with the Epi-Jōmon people of southern Hokkaido (Yamaura 1998, 327).

The last tools I want to discuss are those made of metal. There is some evidence for the use of metal harpoon points (Befu and Chard 1964, 3). The Okhotsk are not known to have produced their own metal, so it can be concluded that iron must have been imported from the elsewhere, as seen with for example iron cooking cauldrons (Zuschikhovskaya 2010, 139). Befu and Chard (1964, 8) describe that early Japanese researchers suggested that all bone and antler tools were made using

metal implements, but given the scarcity of these in the archaeological record, Befu and Chard suggest not a utilitarian but a symbolic function for metal artefacts. One example are the iron swords, daggers and knives of Japanese origin, found at Moyoro shell midden site on eastern Hokkaido (Befu and Chard 1964, 10). Hudson mentions research by Kikuchi from 1976, who indicates that bronzes and other exotic artifacts were imported from Manchuria and the Russian Far East (Hudson 2004, 301).

Recently, an extensive study of iron forging in Okhotsk culture was done by Amano *et al.* (2013). His team found that two different types of metallurgical techniques were used. The first and most common one is performed by twin blowing through pottery sherds using steel as a raw material. The second one is a technique to refine high-carbon material or cast iron by single blowing, which produced a large amount of slag. The origin of these techniques could be narrowed down to the Middle Amur and Baikal regions. Interestingly, metallurgical analysis also revealed a shift in the production area of iron objects. The first iron goods originated from the continent, whereas the later ones were often produced on Honshu. At this point, Okhotsk culture forging technology started to decline (Amano *et al.* 2013, 1).

2.2.4 – Ritual

First I will discuss some of the artefacts the Okhotsk made that are said have a ritual function, and then Okhotsk burials. As mentioned earlier, the house frequently contains cranial remains of bears or sea-mammals on opposite ends. (Ohyi 1975, 132; Yamaura and Ushiro 1999, 44). This has led to the belief that they practiced a type of 'sending ceremony', in which the spirit of an animal that was killed was returned to the wild to

Fig. 5: Okhotsk figurine from Hamanaka-2 site. Bottom right shape has been interpreted as a bear cub. Photo by Ushio Maeda (Hudson 2004, 300)

ensure the goodwill of the spirit world (Yamaura and Ushiro 1999, 44).

Various incised and carved ornaments and sophisticated needle cases made of bird bones have also been found (Ohyi 1975, 132). Befu and Chard (1964, 10) describe the significance of these objects as a combination of religious (magical), esthetic (ornamental) and social (prestige).

Sculptures made of bone and antler were carved in the shape of bears and sea mammals but also humans (fig. 5). The animal figurines are assumed to represent the animals that were of economic or spiritual significance (Befu and Chard 1964, 11) Sometimes the figurines are part of a utilitarian tool such as a spoon, sometimes just on their own. Interestingly, the human figurines are all interpreted as female, save one that is part of a spoon. Their significance is assumed to be religious in nature (Befu and Chard 1964, 11). Other ornaments include bone or tooth pendants, frequently with carved designs, and beads. Some bone discs with large central holes have been interpreted as earrings (Befu and Chard 1964, 10-11). They describe needle cases depicting what seems to be a stylistic rendering of maritime hunting from a boat. Needle cases with this decoration have been found on the Susuya site on Sakhalin (Befu and Chard 1964, 5-6), Moyoro on the east coast (fig. 6) and all the way to Bentenjima in the east of Hokkaido (fig. 7, fig 8). The needle cases indicate that whale hunting took place from an open boat manned

Fig. 6: Needle case thought to depict a sea mammal hunting scene from Moyoro shell midden site (Befu and Chard 1964, 6)

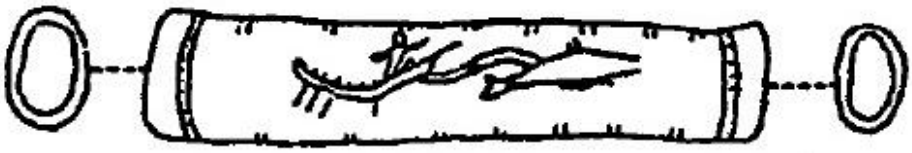

Fig. 7: Whaling scene engraved on a needle case from Bentenjima near Nemuro (Yamaura 1998, 326)

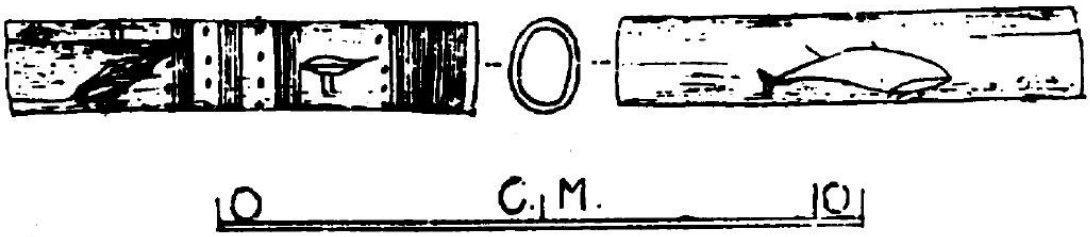

Fig. 8: Engraving of a whale on a bone needle case (Befu and Chard 1964, 6)

by several people (Befu and Chard 1964, 5). Another kind of archaeological feature associated with ritual is of course burials. Okhotsk graves show different styles of burial (Ohyi 1975, 132). On Sakhalin, bodies are buried in a tightly flexed position, arms across the chest. Befu and Chard (1964, 11) cite personal communication with Shoichi Ito, who believes the body was tied up before being buried. At the Moyoro site on the eastern Hokkaido coast, which contained multiple burials, the bodies were oriented towards the northwest or west. Occasionally, one or two ceramic vessels are placed upside-down over the face, chest or both. Burial goods consists of utilitarian and symbolic artefacts, such as stone axes, arrowheads, bone shovels, needles, iron swords and knives and pendants of made metal, bone and stone (Befu and Chard 1964, 11).

As for the interpretation of burials, according to Befu and Chard, Toshio Oba in 1950 distinguished between male burials with hunting equipment and female burials with ornaments. Some burials do not have grave goods, pointing at possible social stratification (Befu and Chard 1964, 11). I must remark that it is not clear from this source if, in the assigning of gender to the burials, skeletal morphology was also taken into account.

2.3 – Satsumon characteristics

2.3.1 – Subsistence

The Satsumon people, unlike the Okhotsk people, subsisted largely on land and river animals and vegetable foods (Befu & Chard 1964, 14). The spread of agriculture that signaled the end of the preceding Jōmon culture brought cultivation of cereals to Hokkaido. Wheat, barley and millet are known cultigens (Hudson 2004, 293).

Evidence for the importance of salmon fishing is also present, and according to Hudson (2004, 293), Segawa suggested in 1989 that this activity was key to explaining settlement patterns in central Hokkaido, where salmon would have been processed to trade with Honshu. Onishi (2008, 119-120) also writes that the shift towards salmon fishing came with the idea of trade commodities in mind. With the lack of rice farming on Hokkaido, trade with Honshu would have provided Satsumon people with rice, but also sake, iron tools and fabrics, in exchange for local products such as the hide and meat of bear, seal, deer, fur seal, kelp, salmon and more (Yamaura and Ushiro 1999, 45).

2.3.2 – Settlements

The Satsumon people built their houses on riverside wetlands (fig. 9) (Onishi 2008, 116). Satsumon houses are similar to contemporary ones from Honshu and had built-in earthenware stoves (Hudson 2004, 293). Differing from their hexagonal Okhotsk culture counterparts, they are square in shape (Yamaura and Ushiro 1999, 44). Along the Okhotsk Sea coast, Satsumon sites with hundreds of pit houses are known, far exceeding the size of the sites of the Okhotsk people that occupied this area previously (Hudson 2004, 303). As seen in figure 3, they are much smaller compared to Okhotsk pit houses.

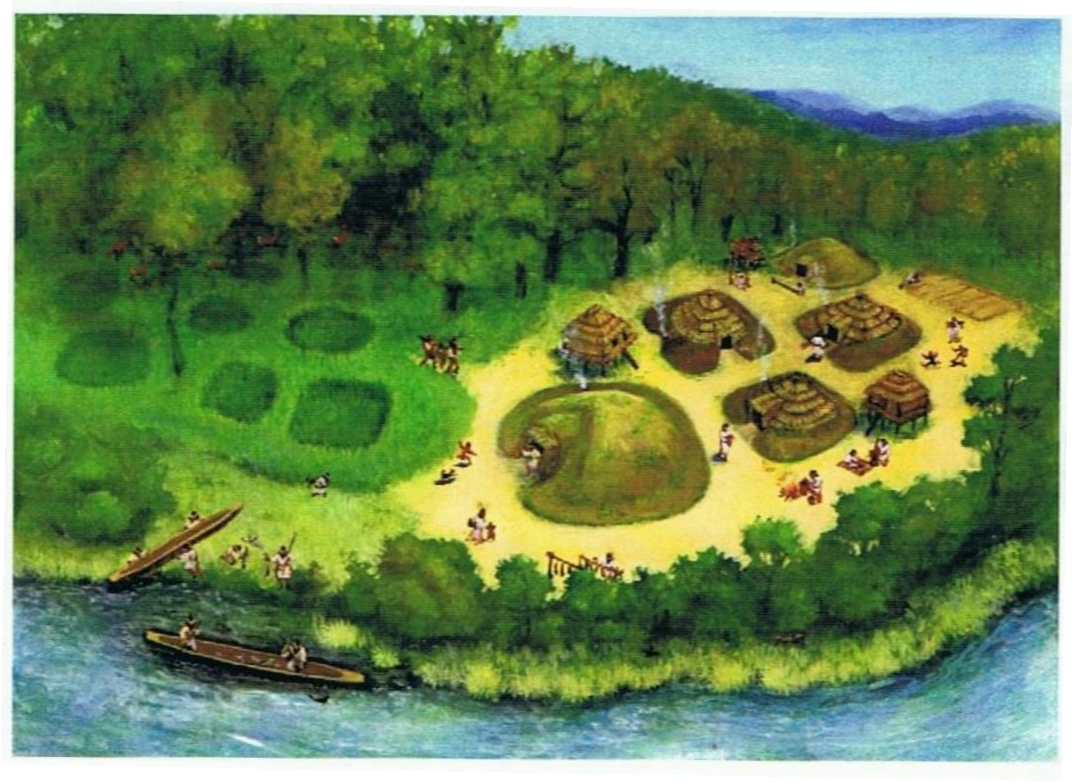

Fig. 9: Impression of the landscape of a Satsumon village (Onishi 2009, 117)

2.3.3 – Tools and technology

Satsumon ceramics differ greatly from the Jōmon ceramics that came before it. They show influence from Haji ware known from Honshu at the time (Hudson 2004, 293; Yamaura and Ushiro 1999, 44). Production increased in the 9th and 10th centuries, as a result of increasingly efficient agriculture (Yamaura and Ushiro, 45).

Compared to ceramics, artefacts of other materials are rare. Their stone tools are made by striking or rubbing natural stones (Onishi 2008, 118) The Satsumon people practiced weaving, as evident from spindles and spindle whorls that have been found (Yamaura and Ushiro 1999, 44). Little is known about the bone toolkit of Satsumon culture, though according to Sakurai (1958) some pieces are known from the Aonae shell mound site on Okushiri Island off the western coast of Hokkaido (Ohyi 1975, 150)

Iron tools were obtained from Honshu, probably in exchange for local products (Yamaura and Ushiro 1999, 45; Onishi 2008, 118). They did possess the technology to repair and remake iron tools using tuyeres. Iron tools found at Satsumon sites range from knives and axes to farming tools (fig. 10) (Onishi 2008, 118-119). These farming tools are found mostly in the context of burials in the early Satsumon period, and Hideyuki Onishi assumes that, based on historical and ethnographical evidence about the Ainu, sticks and other perishable items would have been used more often than iron tools.

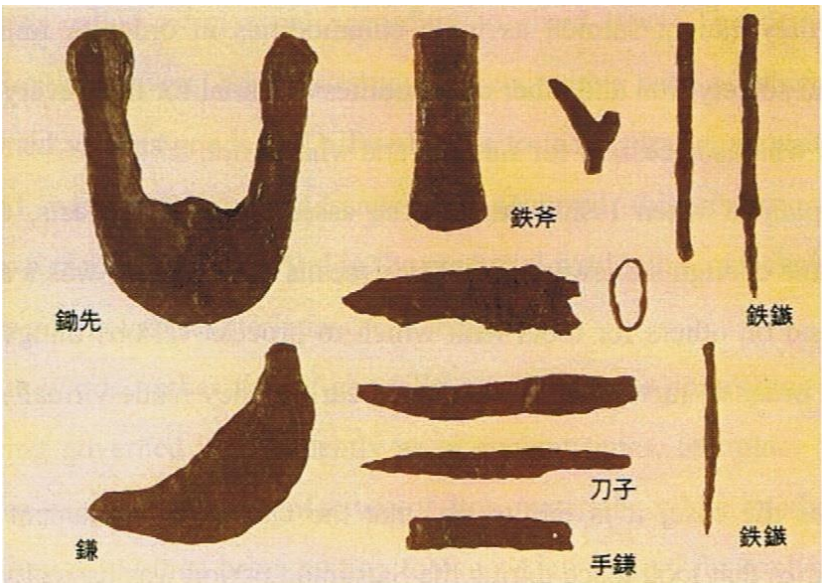

Fig. 10: Farming tools excavated from Satsumon sites (Onishi 2009, 119)

2.3.4 – Ritual

Skeletal remains from Satsumon people in Hokkaido are rare (Hudson 1999, 67). This is due to poor preservation in inland sites, where they were not typically associated with shell middens (Minoru Yoneda, pers. com.). Satsumon culture is known to build round cemeteries (Yamaura and Ushiro 1999, 44). Other than this, surprisingly little is documented about Satsumon rituals and beliefs. Perhaps a combination of the use of organic ritual implements and poor preservation is to blame.

3 – Structure and framework

3.1 – Theoretical framework

When discussing interaction and exchange, I am referring to the whole range of interpersonal contact that would have existed between two or more peoples or groups. In my case, I prefer the latter level of scale to facilitate the identification of somewhat broader processes that involve interaction and exchange. What is being exchanged can be material goods, but importantly also immaterial, in the form of information (Renfrew 1986, 8). Of course, material goods can be present as archaeological artefacts, whereas social exchange of information must be inferred by proxy. The transmission of ideas, inventions and cultural practices, as Renfrew and Bahn (2008, 358) rightly note, may have been of greater importance to people than the exchange of material goods.

Mark Hudson (2004, 304) has analyzed Okhotsk culture and concludes that it lies, for the better part of its existence, outside of an East Asian world system. Between Okhotsk and Satsumon/Ainu society, the difference in power does not seem as relevant, given the long period of separateness of Okhotsk culture. Applying a model of dominance of one of over the other therefore does not seem appropriate to me. It is therefore also difficult to speak of core areas and peripheral areas. For all intents and purposes, as Hudson (2008) has demonstrated, Hokkaido, Sakhalin and the Kurils are all peripheral in the political economy of the larger East Asian world system. For these reasons I will take a different approach, that of Peer Polity Interaction.

3.1.1 – Peer Polity Interaction theory

With this approach, interaction is regarded as taking place within a sphere of interaction (Renfrew and Bahn 2008, 388). This framework allows for the determination of social and political change as a result of interaction between two units. The scope of this framework makes it possible to focus on analyzing

interaction between two independent and equivalent neighbouring societies (Cherry 2005, 197). In situations of interaction between two societies, structural homologies emerge. This means things are changing to become more similar to the way a neighbouring society is. These structural homologies can take the form of similar writing systems, numeration systems, architectural features and, most importantly for this study of the Okhotsk, the material manifestation of homologies in social organization and belief system (Renfrew 1986, 5). I regard similarities in this aspect to be of importance for the merging of two cultures who, as we have seen in the previous chapter, differ greatly in regards to subsistence, settlement patterns and as far as we can tell, rituals and belief systems.

Changes are often viewed as either exogenous, i.e. coming from outside the society one is studying, or endogenous, the result of processes occurring in a society as an isolated system (Renfrew 1986, 5-6). The level of scale at which Peer Polity Interaction operates is somewhere in between these two ends of the spectrum. In this model, change is regarded as the result of interactions between two or more interacting polities, therefore operating mostly on a regional level (Renfrew 1986, 6). Peer Polity Interaction was developed for analysis of societies in the process of early state formation (Renfrew 1986, 1). However, I assert that using PPI as an analytical tool has the benefits of studying interaction on an intermediary scale level without inferring dominance of one group over the other, even in a case study that deals with interactions of hunter-gatherers and agriculturalists.

These interactions are separated into several types. I will provide a summary of the eight different forms of interaction that have been distinguished in the Peer Polity Interaction framework (Renfrew and Bahn 2008, 388). I will also indicate what type of archaeological data I will use to investigate each form. They are as follows:

***Competition*:** Neighbouring groups meet from time to time to perform rituals and compete in games or other enterprises. This behavior has been found most common in hunter-gatherer bands that meet up periodically. I will investigate the existence of these meeting places, and whether there are other archaeological indications of

this kind of interaction such as combinations of Okhotsk and Satsumon ritual artefacts.

***Competitive emulation*:** One group tries to outdo the other in consumption activities such as feasting. The potlatch of the Northwest Coast American Indians is most illustrative of this practice. It also includes the construction of ever greater monuments to impress neighbours. In the absence of data of any large-scale Okhotsk architecture, if it ever existed, I will examine the sites for evidence of shared feasting.

***Warfare*:** Military competition. Motivations can range from wanting to expand territory, to capturing prisoners of war and supplies. To analyse this, I will examine evidence of burning, war victims and distribution of weapons.

***Transmission of innovation*:** The spread of technological advances from one area, sometimes group, to the other. For this, I will consider stylistic aspects of artefacts, as well as iron forging technology.

***Symbolic entrainment*:** Symbolic systems tends to become more similar between groups as a result of interaction. The iconography employed in different places starts to fit within a larger religious system. I will examine Okhotsk figurines, carvings and ritual structures to investigate the degree of ritual continuity with historically and ethnographically known Ainu ceremonies and beliefs.

***Ceremonial exchange of valuables*:** a (gift) exchange of material valuables or marriage partners, usually between elites. This category of interaction will be analyzed by determining what things may have been considered valuables, and whether these can be tied to exchange with Satsumon people.

***Flow of commodities*:** the large scale exchange of everyday commodities. Economies can become entangled with each other in the process. For this category, I will here be looking mostly at the distribution of pottery types and iron artefacts.

***Language and ethnicity*:** developing a shared language and shared ethnic awareness. Often difficult to recognize archaeologically and as such often not clearly indicated by archaeologists. Because no historical documents exist written by the Okhotsk and Satsumon people themselves, I will examine what linguistic analysis of the Ainu language has shown in regards to its origins.

There are some problems when trying to apply the model of Peer Polity Interaction to a prehistoric society, as is the case with the Okhotsk and Satsumon cultures in this paper. For example, spatial definition of different polities can be difficult to observe (Cherry 2005, 200). I use the term 'polity' here as defined by Renfrew (1986, 2) 'not… to suggest any specific scale of organization or degree of complexity, but simply to designate an autonomous socio-political unit'. I posit that the difference in cultural characteristics of Okhotsk and Satsumon sites is distinct enough to make the application of this model possible, supported by a clear chronological sequence based on pottery (from Susuya phase to Towada, Kokumon, and lastly Chinsenmon phase) (Hall, Maeda and Hudson 2002, 214). A possible pitfall is that of circular explanations, when one regards evidence of interaction as both the cause and effect of the change one is trying explain (Cherry 2005, 200). I agree that the goal must not be to explain the distribution of a certain trait, but the explanation of the changes in complexity of a society. Cherry proposes the use of historical sources as a way to have more control when applying Peer Polity Interaction. There are some historical sources, mainly from China, from the time period under study here, but it is frequently unclear if peoples that are mentioned correspond to the ones found archaeologically (Hudson 1999, 227). Therefore in my analysis, I will focus on archaeological, not historical information.

3.1.2 – Contextualization of Peer Polity Interaction theory

Peer Polity Interaction theory is situated in a larger field of theory dealing with issues of interaction and exchange. Especially relevant for archaeology is the role of material culture in the constitution of social relations, which is essential to the approach taken here. Therefore, I wish to address the topics of materiality and behavioral archaeology. Because the area under study focuses on a cultural contact in a frontier area between two peoples, the idea of frontiers as zones of cross-cutting social network is explored. In the different forms of interaction as defined by Peer Polity Interaction, the concepts of ritual and feasting also require further contextualization.

3.1.3 – Materiality and behavioral archaeology

The view taken here is that material culture possesses an active role in the formation of social realities (Renfrew 2001, 126). Theory of materiality is used to examine the ways in which objects can inform us about these social realities of the past. The specific definition of materiality, however, has proved difficult to pin down. This is not the place to delve too deeply into the differences in definition, but I will explain the aspects most relevant to the case study of this thesis. Carl Knappett has recently tackled the issue of the definition of materiality along four dimensions: material relations, social relations, vitality and plurality (Knappett 2012, 188). The first two are closely related. Materiality as material relations has been defined by Gosden as "human relations with the world". Materiality as social relations, termed mutualism by Gosden, deals with "human inter-relations" (Knappett 2012, 189).

I posit that the way material culture can inform us of social relations is a crucial aspect of the cultural change taking place on Hokkaido. A third view is of materiality as vitality, regarding it as a force possessed by material things independent of human action and intention (Knappett 2012, 201. Lastly, materiality as ensemble, is a view which takes a broader approach to materiality, embracing the plurality of the characteristics of things across different scales (Knappett 2012, 196). In practice, archaeology has two distinct approaches to use materiality in a methodology: the *chaîne opératoire*, which consists of reconstructing the steps in a technological sequence of production of an artifact, and behavioral archaeology (Knappett 2012, 196-197). I will explain the latter further here.

In behavioral archaeology, people-object interactions are made explicit in what is termed 'behavioral chains'. More than just the production, these encompass everything from the idea of the creation of an object, the production itself, use-life through to discard, and the human behavior involved in each of these steps (Knappett 2012, 197). Behavioral archaeology can be divided into three separate domains. The first is understanding the formation processes of the archaeological record. Secondly, there is the reconstruction of behavior in archaeological contexts where behavior is not directly observable. Thirdly, it deals with the explanation of

behavior and behavioral change. In the case study at hand, I will operate mostly from the approach of the second domain, in order to posit a cautious suggestion as to a behavioral explanation for the observed changes in Okhotsk interaction and exchange. In examining the cultural transition on Hokkaido on a regional scale, the behaviors of individuals are somewhat obscured. However, I contend that the human-object relations are still important to keep in mind when examining the archaeological evidence for certain cultural influences.

3.1.4 – Exchange, values and biographies of objects

One of the main informants of past behavior that is consulted in this paper is material culture, and specifically their distribution and context. In examining the exchange of objects, I agree with Arjun Appadurai that there is a social dimension, and that objects have a social life (Appadurai 1986, 56). These objects can be called commodities when they have an economic value. Appadurai follows Simmel, in that he sees this value as something that is imposed onto the object by persons, and not inherent to the object itself (Appadurai 1986, 56). Value is determined in reciprocal exchange when something is equally desired by the other person, as both make a sacrifice of an object to acquire what they desire (ibid.). Small, everyday exchanges may not seem to have an impact on politics of relations and power, but as Appadurai states, "…these many ordinary dealings would not be possible were it not for a broad set of agreements concerning what is desirable, what a reasonable 'exchange of sacrifices' comprises, and who is permitted to exercise what kind of demand in what circumstances" (ibid.). I posit that this makes evidence of exchange informative of larger social and cultural tendencies, and as such relevant to the issue of the decline of Okhotsk culture. Exchange brings with it a tension between existing frameworks of value and trading practices and the tendency of commodities that seek to break away from these frameworks (ibid.).

In the same volume, Igor Kopytoff underlines the cultural dimension of exchange, as he formulates a cultural biography of things. He asserts that just as biographies can be constructed about people to find out what the ideal trajectory is of their social career, the same can be done for things (Kopytoff 1986, 66). Most

relevant to this thesis, Kopytoff illustrates the insight that the biographical approach of things can provide with the example that "…in situations of cultural contact, they can show what anthropologists have so often stressed: that what is significant about the adoption of alien objects – as of alien ideas – is not the fact that they are adopted, but the way they are culturally redefined and put to use" (Kopytoff 1986, 67). Biographies can be economic, technological or social, and culturally informed or not, meaning the perspective from which an object is approached (Kopytoff 1986, 68).

An economy can also be subdivided in different spheres of exchange. Regarding commodities, one can distinguish between a sphere of subsistence items, prestige items, and rights-in people (for example acquiring a marriage partner). More spheres of exchange than this could be defined, and in and of themselves they present a simplication and a way to structure all objects in existence (Kopytoff 1986, 72). Opposite to commodities, which develop to an optimum in value and as such become homogenized, are singular things. These are culturally precluded from becoming commodities (Kopytoff 1986, 73). They are often things that are more symbolic in nature, such as monuments and ritual objects, and used as a way to assert power. In the process they can become sacralized (Kopytoff 1986, 74).

3.1.5 – Interaction frontiers

The main location of the exchange studied in this thesis is the island of Hokkaido, more specifically the frontier between bearers of Okhotsk and Satsumon culture. I have discussed before the reasons for not approaching frontiers from the perspective of a core-periphery relationship. Here I shall define in more detail my view of the area under research as a frontier as put forth by Lightfoot and Martinez (1995). They argue for a reconceptualization of frontiers as "socially charged places where innovative cultural constructs are created and transformed" (Lightfoot and Martinez 1995, 472). In the case of culture contact, they see frontiers as the frontlines in the creolization or syncretization of cultural constructs (ibid.)

3.1.6 – Ritual and feasting

Ritual has been described by Timothy Insoll as comprising both action and mental activity (Insoll 2004, 10). One of the problems in archaeology is assigning that which is not well-understood a ritual purpose, and as such I agree with Insoll that a more nuanced definition is required (Insoll 2004, 11). For the purpose of my analysis, it is both the social context and the act of ritual that are of importance. Evidence of ritual can be both odd and routine, and examples of both are included in this peer polity interaction analysis.

In addition to ritual, feasting is another practice that may be recognized archaeologically. Hayden and Villeneuve (2011, 434) describe how the concept of feasting has become a critical element in our understanding of village dynamics and social integration, the emergence of inequalities and complex societies, the pursuit of agency interests and political power and a number of other issues. To archaeologists, feasting is often used to explain social conflict (Hayden and Villeneuve 2011, 433). Feasting is determined mostly based on the quantity and type of faunal remains, ceramics and iconography (Hayden and Villeneuve 2011, 441). For the cultural transition at the center of this thesis, feasting may be of importance for understanding the process of social integration.

3.2 – Methodology

For my analysis, I will focus on Okhotsk material culture. For one, Okhotsk culture is better represented in English scholarly literature than Satsumon culture. I also believe that it is more informative to look at the demise of the Okhotsk from their perspective as they were originally relative outsiders in the area, facilitating more easy identification of their cultural characteristics in contrast to those of the Satsumon groups of Hokkaido. The region of study in this thesis includes firstly northern Hokkaido from the northern tip, including Rebun and Rishiri Islands, down along the Okhotsk Sea coastline. Sakhalin, where the earliest as well as latest Okhotsk culture sites are found, was for the most part not at the forefront of interaction with Satsumon culture. Following the distribution pattern of Okhotsk

sites along the coast, sites in eastern Hokkaido coast are included, but not as far as those on the Kurils. Again, those islands are further removed from the mainland of Hokkaido where I believe the primary interactions would have taken place. For the sake of comparison, I have chosen to include two sites from Western Hokkaido, one on the island itself and the other on Okushiri Island, just off the coast. These sites are far removed from the core areas of Okhotsk culture along North and East Hokkaido, though still coastal, and thus may provide interesting results. This makes a total number of 32 sites of which enough English data could be gathered to be of use in this thesis.

I will examine the archaeological material of Okhotsk culture within the framework of Peer Polity Interaction theory, as previously defined. In doing so, I hope to explain the changes in cultural complexity that came with the decline of Okhotsk culture and the expansion of Satsumon/Ainu culture. Concerning the scale of my analysis, I propose to examine Okhotsk interaction on Hokkaido on a regional level, as it fits the intermediate scale that the peer polity approach employs to study changes. This also allows for a more easy comparison with existing theories about the end of the Okhotsk period. These theories often describe the developments on a regional level, in particular between northern Hokkaido and eastern Hokkaido, and will be examined in the next chapter.

The archaeological material I have studied to investigate Okhotsk and non-Okhotsk influence was chosen for its capacity to display varying cultural characteristics. For example, pottery of different style and material may be associated with an overarching cultural preference, although of course there is still room for individual expression. In the same way, other categories of data can be informative of interaction and exchange as well. I have taken into account house plan types (large and hexagonal for Okhotsk versus small and rectangular for Satsumon), ritual deposits such as evidence of sending ceremonies, and artefacts such as iron goods, of which the origin can be traced. Due to the poor preservation of Satsumon human remains, I have chosen not to investigate differences in burial practice.

4 – End of Okhotsk - theories on the demise of the Okhotsk culture complex

In 1964, Befu and Chard recognized the problematic issue of even dating the end of the Okhotsk culture (Befu and Chard 1964, 16). Ever since then, research has come a long way and multiple hypotheses about the demise of the Okhotsk culture have also been proposed and rejected. Much research has focused on the ecological adaption of the Okhotsk people, though people like Hudson argue for a larger scale approach, examining its position in the context of the Northeast Asian political economy (Hudson 2004, 290). In preparation for my own Peer Polity Interaction analysis, in this chapter I will summarize the different existing hypotheses about the causes for the demise of Okhotsk culture, as well as some theories that I believe can say something about this demise but did not originally have that process in mind. Some theories are predominantly occupied with aspects of trade, while others view conflict and migration as causes for cultural change. I have tried to group the different theories somewhat according to these three categories, to make it easier to see how some theories differ from others even regarding the same topic. Interspersed are some of my own comments and conclusions on these theories. They will be revisited in the discussion chapter, to see if they hold up according to the results of my Peer Polity Interaction analysis.

4.1 – Trade networks

Our first hypothesis regarding trade focuses on the role marine-mammal products played. The hybrid Tobinitai culture of eastern Hokkaido emerged between the 11th and 13th century, and these people, purportedly a mix of Okhotsk and Satsumon groups, resorted to more hunting of land animals and riverine fishing. Hudson notes that Mitsuaki Sugita proposes that there was a decline in marine-mammal fur trade due to the collapse of the Tang and Parhae kingdoms, who were supposedly important trade partners from the mainland. This decline, along with growing Satsumon influence, would have caused the end of Okhotsk culture. However, he

fails to supply evidence in support of these events (Hudson 1999, 225). This makes the trade collapse that his theory proposes unlikely, but there is still the assumption that the Okhotsk people would have been pressured into working and living together with Satsumon groups. At least in the region of eastern Hokkaido where the Tobinitai mix-culture was formed, such cooperation seems to have occurred.

A second theory about trade is made by Yamaura (1998, 327), who hypothesizes about the strong marine specialization in the Hokkaido area: Before the Okhotsk period, the Yayoi people living to the south had iron, glass and rice, which the Epi-Jomon people of Hokkaido were interested in. Therefore they developed a marine specialization from the perspective of exchange, particularly to obtain sea mammal products and furs. These were known to have been in high demand by both the Chinese on the mainland and the Japanese on Honshu in the latter half of the first millennium AD (Yamaura 1998, 330). Okhotsk harpoon heads have been shown to be typologically similar to Epi-Jomon ones from southern Hokkaido. Yamaura then goes on to say that the Okhotsk people first migrating from Sakhalin to Hokkaido had done so because of bad economic conditions. They would have had to change their way of subsistence from a riverine people with domesticated pigs to a more marine lifestyle, because the inland was already occupied by Epi-Jomon and Satsumon groups. This would have forced them to rely on these marine resources. He even calls their migration an 'emergency', after which Okhotsk culture quickly adapted, organized socially possibly as whale hunters (Yamaura 1998, 328). By extension, and this is my own conjecture, one would not expect Okhotsk culture to be as stable or self-reliant for several centuries, even across considerable distances of coastline along eastern Hokkaido. Did something change that made a specialization in procuring marine resources no longer viable? It is unclear if this is the case. Until we know for sure, I cannot agree on this chain of events.

Yamaura expands his idea of this trade relation with a colleague a year later (Yamaura and Ushiro (1999, 45). They both view the Okhotsk people as the suppliers of raw material products that were traded with Satsumon people. These people, in turn, had a trade relationship with Honshu, through which Satsumon

people acquired iron tools, fabrics, rice and sake in return for Hokkaido 'products' such as meat and hides of bear, deer, seal, fur seal, kelp and salmon. Products from China would even have been acquired through lower Amur middlemen. This system promoted social stratification, as evidenced on Honshu by tumulus graves and the veneration of local or regional chiefs (Yamaura and Ushiro 1999. 45). This would increase the demand for prestige goods and thus lead to increased trade with Satsumon people. They conclude that this process eventually lead to the absorption or replacement of Okhotsk peoples by the Satsumon. I find this hypothesis to be skipping a crucial step, which explains what happened for the Satsumon people to gain dominance in their trading practices and consequently affect Okhotsk culture. Was it the exclusivity of certain goods from Honshu that were highly valued by the Okhotsk people?

This theory also goes against conclusions by Hudson (2004, 303) that Okhotsk trade was underdeveloped in nature. He regards the leaders of Okhotsk groups as unwilling to interact with the larger East Asian world system, meaning they lose political power. It is also unclear what commodities exemplified prestige and power, and so Hudson believes that trade of such commodities had already been monopolized by the Satsumon people (Hudson 1999, 303).

Another instance of trade offers quite a different viewpoint on the situation. Haruo Ohyi (1975, 146), mentions the Motochi site on Rebun Island. Excavations at this site have yielded evidence for coexistence of Okhotsk and Satsumon artefacts in the upper layers, dated through pottery analysis to the later stages of Okhotsk culture. The site has both Satsumon and Okhotsk ceramics, but the bone, antler and stone toolkit is very much of the marine Okhotsk nature. The site also has a typical Okhotsk pit house. Ohyi therefore concludes that, while the inhabitants of this site must have been Okhotsk people, they had acquired Satsumon pottery. Eventually though, even Rebun and Rishiri Island were occupied by Satsumon groups, at the end of the second or start of the third subdivision of Satsumon culture (Ohyi 1975, 146). The influence of Satsumon culture in this site seems to be limited to pottery decoration, showing rather little interaction even near the end of Okhotsk culture.

Meanwhile, sites in northern Hokkaido that follow directly after the earlier rich and densely distributed Okhotsk sites have only poor remains, leading Ohyi to believe that Okhotsk people left the region themselves, with the exception of Rebun and Rishiri Island which held out a little longer. Contact with the Satsumon people due to their northward expansion drove the Okhotsk away. In eastern Hokkaido on the other hand, sites like Motomachi exhibit mixed characteristics of Satsumon and Okhotsk culture. Ohyi therefore suggests an assimilation of Okhotsk into Satsumon culture (Ohyi 1975, 146-147). I have drawn a connection between his description of these characteristics, and the mixed nature of the aforementioned Tobinitai hybrid culture.

4.2 – Conflict and warfare

War and conflict constitute another possible cause for the end of Okhotsk culture. There are multiple records of conflict, both with people from the Eurasian mainland to the northwest and from southern Hokkaido.

A first theory is mentioned by Hudson (1999, 225) who cites work by Japanese researcher Utagawa. He believed Mongol attacks on Sakhalin in the 13th century played a role in the end of Okhotsk culture. However, while coming up with a date for the end of Okhotsk culture is problematic, Hudson notes that it has since been agreed that at least for Hokkaido, Okhotsk culture may have disappeared by the 9th or 10th century (Hudson 1999, 225). This is well before the Mongol attacks and thus suggests something different took place on Hokkaido for the Okhotsk people there to disappear. Hudson writes that for eastern Hokkaido, the Tobinitai hybrid culture, with its more inland oriented subsistence strategy, shows that the Okhotsk people became assimilated in the expansion of Satsumon culture. He goes on to say that this assimilation, at the cost of Okhotsk culture, laid the foundation for the emergence of the new Ainu culture (Hudson 1999, 225-226).

Yamaura (1998, 331-332) also discusses conflict on Hokkaido. From the 7th century, Japanese chronicles of conflicts between the Yamato Imperial Court and people living on Hokkaido are known. In the 13th century, there are the aforementioned Mongol attacks on the Ainu in the Amur River basin as reported

by the Chinese. Fortresses on Hokkaido, Sakhalin and even Kamchatka lead Yamaura to believe that trade causes social tensions on inter- and intra-tribal levels. Unfortunately, Yamaura does not mention specifically which historical sources he writes about. Based on the location of Satsumon culture around southern Hokkaido, it seems possible that it was the Satsumon people that the Japanese were in conflict with. However, there is no supporting evidence from English sources at this time, and the impact of this conflict on Okhotsk is even more unclear. It seems Satsumon culture was still able to acquire Haji ware and iron goods from Honshu, so trade and business are not likely to have to been affected very much.

4.3 – Migration

As mentioned earlier, Mark Hudson in his 2004 article questions the importance of trade in Okhotsk society. He applies world-systems theory to the Okhotsk culture to understand its societal change. His view of Okhotsk culture's ecological adaptation is different from most other scholars. Whereas Okhotsk culture is mostly seen as a successful highly specialized culture, he adopts the viewpoint of the potential costs this specialization may have had (Hudson 2004, 292). I agree that there are merits to using this approach as a research tool on a larger scale level, whether there was much articulation within the East Asian world system or not. According to Hudson himself this articulation was limited, which is why I believe an analysis on a regional level, as I employ here, is useful. He concludes that the continuation of Okhotsk culture is an attempt at keeping social and economic autonomy against the growing power of their neighbours in the East Asian world system. The Okhotsk culture region was a peripheral zone with very little influence from a dominant core. He sees no evidence for demographic pressure as the causal factor of Okhotsk decline, but a possible preference for mobility by the Okhotsk to deal with this. Expansion to eastern Hokkaido cannot be directly linked to an increased need for sea mammal products for trade. Trade as a whole does not seem to have been a priority for the Okhotsk people given the lack of traded goods that are found. Lastly, the physical expansion of Satsumon population would have contributed to the demise of Okhotsk culture on Hokkaido (Hudson 2004, 304). He

also supports the theory that Ainu people from Hokkaido replaced or pushed the Okhotsk people of southern Sakhalin and the Kuril Islands. To him it seems unlikely that the counter explanation, namely that the Okhotsk people of Sakhalin and the Kurils transformed themselves into Ainu people, holds up. He does say that there is a lack of evidence to prove the migration and pushing theory, but still regards the expansion of Late Satsumon culture on Hokkaido an important factor (Hudson 1999. 226).

Another migration theory deals with the Okhotsk people on the Kurils. Befu and Chard (1964, 15) mention that Sakuzaemon Kodama (1948) and Osamu Baba (1943) have analyzed an interesting report by a Portuguese missionary from 1622 AD. He speaks of a people living on three islands off the coast of Hokkaido, who speak an unknown language, did not have beards and hunt sea otters. It is most likely that these island are part of the southern Kuril Islands. The Ainu are known from various historical sources as being very hairy, so it is likely not them, implying a Mongoloid descent. However, the Okhotsk people may fit this description, as they also would have hunted sea otters. This evidence may suggest that part of the Okhotsk people continued to exist until the 17th century on the Kurils (Befu and Chard 1964, 15). Ohyi supports this idea, but mentions that Ainu expansion first turned north to Sakhalin and not the Kurils. When they did eventually start moving to the Kurils, they made it all the way across them to the south of the Kamchatka peninsula, bringing an end to the remaining Okhotsk people still living on the Kurils (Ohyi 1975, 149-150). It is interesting to see that possibly the Okhotsk people who did not live on Hokkaido, and perhaps did not engage in as much interaction with the Satsumon people, may have had a different fate. This highlights the role of interaction in the demise of Okhotsk culture on Hokkaido.

Although the effects of climate change, skeletal morphology and DNA analyis are not considered in my Peer Polity analysis, theories based on these lines of research may serve as a useful backdrop to the other theories. As such I have chosen to include them for the sake of completeness.

Climate change may have been a cause for migration. Akamatsu and Ushiro in 1992 investigated the composition of shells in Okhotsk shell middens,

concluding that a warm phase existed between the 6th and 10th centuries. This meant there was no sea ice along the Okhotsk Sea off eastern Hokkaido (Hudons 1999, 230; Yamaura 1998, 323-325). Hudson notes, though, that this does not explain the eventual migration of the Okhotsk people to the north where there was sea ice, making winter fishing problematic (Hudson 1999, 230). However, the sea ice may also have been beneficial to the Okhotsk people. Yamaura (1998, 323) has determined that several species of pinniped such as ring seals (Pusa hispida), ribbon seals (Histriophoca fasciata), bearded seals (Erignathus barbatus), harbor seals (Phoca vitulina) and Steller sea lions (Eumetopias jubata) can be seen in the summer along the southern coast of the Okhotsk Sea. Meanwhile, the sea ice provides a good habitat for them, and a place for some of these species to birth their young. However, the role of the sea ice in the preferred living conditions for different types of seals, as well as a more detailed reconstruction of the sea ice between 900 and 1100 AD is needed to say anything definitive on this point.

On the Satsumon side of things, a cooler climate on northern Tohoku and Hokkaido may have had a negative effect on rice farming in the region. According to Hudson, Kikuchi in 1984 posited that this would have forced the Ainu people north, looking for trade goods to compensate. Hudson rightly notes that even if rice farming became more difficult, other more cold-adapted crops such as millet may have fared differently (Hudson 1999, 230). Depending on how much Ainu culture had actually been formed at that time, and the degree to which it still had Satsumon characteristics, this may have held true for Satsumon people at the time.

Research of the skeletal morphology of Okhotsk individuals from Sakhalin by Ishida (1994) has revealed only a weak affinity of the Sakhalin Ainu with Okhotsk people. The characteristics of Okhotsk skeletons have more in common with the Northern Mongoloid population from the Eurasian mainland than with the Hokkaido Ainu. This would indicate intermarriage of Ainu people with local tribes of Sakhalin of Northern Mongoloid descent after they moved there. Interestingly, Ishida did also find the Sakhalin and Hokkaido Okhotsk people to be a single identical population (1994, 266). This goes against an early theory by Kōno from

1935 who believed Okhotsk culture was ancestral to the Sakhalin Ainu (Ohyi 1975, 150).

Haruo Ohyi believes that the Okhotsk and Ainu people cannot be connected when approached from a different angle, namely that of their material culture. Both cultures have distinct features. At the time of his writing, physical anthropological research of Okhotsk material was only in its early stages, but it also indicated distinct differences between Okhotsk and Ainu people based on skeletal remains (Ohyi 1975, 150-151). Since then, further DNA analysis has nuanced this theory considerably. Research by Sato *et al.* (2007) has determined that the Okhotsk people were closely related to the Nivkhi and Ulchi people from the mainland, and an intermediate in the geneflow of northeast Asian people to the Ainu. They support the theory that genetically, Okhotsk culture joined Satsumon culture resulting in Ainu culture.

In the next chapter these theories, with the exception of those involving climate change, skeletal morphology and DNA analysis, will be put to the test by applying a Peer Polity Interaction framework to the archaeological material of Okhotsk culture in order to more closely examine the processes of interaction at work.

5 – Investigating Okhotsk interaction and exchange: a Peer Polity Interaction analysis of 32 Okhotsk sites

At the time of Befu and Chard's 1964 article, they note how little is known about the extent of contact between the Okhotsk and Satsumon and how this issue has been largely neglected in archaeological research (Befu and Chard 1964, 14). The following is a study of Okhotsk cultural material using Peer Polity Interaction theory. Each category of interaction, as defined in the theoretical chapter, will be applied to the archaeological evidence that has (or has not) been found. These results will be interpreted and discussed in reference to the different theories about what happened to Okhotsk culture in the next chapter.

I have composed a table of all archaeological data of Okhotsk culture that is available in English, refers to actual excavation data and does not just contain general remarks. I have found information on 32 Okhotsk archaeological sites in total, which I have divided in several categories, chosen for their capability to show the possible results of interaction. The categories of data that turned out to be most insightful regarding interaction will be used here. These are pottery, iron forging technology, iron goods, weapons, ritual structures, figurines and carvings and bear remains. When possible, I will detail their distribution in a table, occasionally supported by some less common archaeological features if applicable to a certain form of interaction.

5.1 – Competition

This way of interacting often takes the form of periodic group meetings. Representatives of respective groups meet at ceremonial places to celebrate ritual or compete in games. This has for example been observed in a hunter-gatherer societies like that of the aboriginals of Australia but also in state societies, for example the Olympic Games in which various city states would participate (Renfrew & Bahn 2008, 388).

In Okhotsk culture, specific group ritual sites that were made specifically for that purpose have so far not been recognized by researchers. Ritual or 'sacred' spaces tend to be confined to arrangements of bear skulls and sea mammals inside pit houses. A possible candidate, however, is a stone piling structure found on the Kafukai A site on Rebun Island, off the coast of northern Hokkaido. The rocks ranged in size between 10-30 cm, and it contained 7 whale skulls, 30 dog skulls and a dolphin skull, arranged in a circle of 2 meters in diameter. It is suggested to have been part of some whale hunting ritual (Ohyi 1981, 714). As mentioned before, the Okhotsk people had large whale hunting boats capable of carrying multiple people (Yamaura 1998, 328). Whale hunting therefore can be called a group affair, and thus it seems reasonable to consider the making of this ritual arrangement a group effort as well. Yamaura (1998, 328) also notes that Okhotsk bone artifacts of sea mammals (and bears) resemble Ainu *inoka*, carved wooden figures that the Ainu used in sending rituals for sea mammals.

5.2 – Competitive emulation

Over the course of time, this mode of interaction can lead other groups to compete in much the same way in such activities, until it becomes a shared form of expression (Renfrew and Bahn 2008, 388). In the case of Okhotsk and Satsumon culture, competitive emulation of architectural features, as seen in for example Greek temples or medieval cathedrals, does not seem applicable. Both cultures constructed pit houses, different though they may be in size, form and preferred location, Okhotsk people settling on elevated coastal locations and Satsumon people close to rivers further inland. However, conspicuous consumption in the form of feasting as described by Hayden and Villeneuve (2011, 441) is possible. The aforementioned ritual structure of Kafukai A site may have involved consumption of the hunting and fishing spoils before they ended up the way they were found in their archaeological context.

5.3 – Warfare

For this form of interaction there are several indicators. I first want to discuss weaponry. I have examined the data of the 32 sites for their amount of weaponry, such as swords, axes and pikes. Although knives can be used as weapons, they are also commonly used for their other practical functions, such as preparing food and carving. Therefore I have chosen not to include them as tools for warfare. This yielded the following results:

Table 2: Overview of types of weaponry found on Okhotsk sites, the period they are from, and the context in which they were found.

Site number and name	Type of weapon	Dated to	Context	Source
15. Menashidomari	Sword	Late Okhotsk	Burial pit	Amano et al. 2013, 6
16. Sakaeura II	Sword	Middle Okhotsk	Pit deposition	Amano et al. 2013, 6
	Axe	Middle Okhotsk	Pit deposition	Amano et al. 2013, 6
20. Moyoro shell mound	Swords (multiple)	10th century	Burial pits	Befu and Chard 1964, 15
22. Utoro	Sword	Okhotsk period	Layer w/ archaeological objects	Amano et al. 2013, 6
	Axe	Okhotsk period	Burial pit	Amano et al. 2013, 6
	Pike	Okhotsk period	Layer w/ archaeological objects	Amano et al. 2013, 6

Only four sites in the sample contained some type of weaponry, which is 12.5% of the sample sites investigated here. It is possible, however, that swords have been reforged into different objects.

Therefore, it is important to look at other evidence that may indicate warfare. In the case of looting, perhaps a sudden increase in the number of Okhotsk objects in Satsumon settlements could be detected around this time, or vice versa, but such is not the case.

Other possible evidence of warfare could be the remains of burned structures or skeletons that show damage as a result from weapons. For both categories there is one example. For the first, a burned structure was found at the Tokoro-chasi site (approx. 900 AD), containing many earthenware pots, sculptures and other wooden remains (http://www.city.kitami.lg.jp). For the latter category, a male injured by a stone arrowhead in his right hip has been noticed by Yamaguchi in 1967 (Ishida *et al.* 1994, 372). Unfortunately, that is all the English information that is available on this individual.

5.4 – Transmission of innovation

This type of interaction may include some symbolic aspects, but mostly focuses on (technical or social) innovations (Renfrew 1986, 9). Here, decorative techniques that are hitherto unseen in the chronology of a site are included in the definition of this form of interaction. This is because they constitute the adoption of new elements or change of existing steps in the production process. An overview of the known occurrences at Okhotsk sites of Okhotsk pottery, Satsumon pottery and hybrid forms of the two may shed light on the distribution of these styles (table 3).

On the Motomachi site in eastern Hokkaido, pottery with mixed characteristics was found, displaying Satsumon features as well as the Okhotsk noodle appliqué pattern (Ohyi 1975, 147). Pit house I of the site was also not typically Okhotsk in shape, being nearly square in plan and 8 meters in diameter. The hearth, however, was typical for Okhotsk culture, being surrounded by a stone arrangement. Two pots were found in it, one of the Satsumon type and the other Satsumon-like, but with the Okhotsk noodle-appliqué pattern (Ohyi 1975, 147).

The Tobinitai culture, a hybrid of Okhotsk and Satsumon culture, is unfortunately not very well documented in English. Some information is provided however in an abstract by Onishi (2003, 157), who has analyzed the proportion of Okhotsk and Satsumon pottery in sites of this Tobinitai culture. He defines two lineage groups, one Okhotsk and one Satsumon. First, objects showing Okhotsk cultural elements are more common, but there is a steady influx of Satsumon culture artefacts. The amount of Satsumon artefacts gradually increases while the number of artifacts of Okhotsk artifacts decreases.

Regarding iron forging technology in Okhotsk culture, there was a lack of transmission of innovation. Okhotsk people made use of pottery sherds for tuyeres and furnace walls, unlike the furnaces of Satsumon culture and the rest of Japan. This technology fell into decline over the course of the Okhotsk period, with the latest use of this method being documented in northern Hokkaido at the Kafukai A and Motochi sites (Amano *et al.* 2013, 4).

Table 3: Distribution of Okhotsk, Satsumon and hybrid style pottery

Site number and name	Region	Phase	Okhotsk pottery	Satsumon pottery	Hybrid style pottery	Source(s)
1. Hamanaka 2	Rebun Island	Early-Late Okhotsk	Present	Absent	Absent	Sakaguchi 2007a
3. Kafukai A	Rebun Island	Early-Late Okhotsk	Present*	Absent	Absent	Ohyi 1975; Hall, Maeda and Hudson 2002, Ohyi 1981
		Satsumon	Present	Present*	Absent	Ohyi 1981
5. Motochi	Rebun Island	Okhotsk period, upper layer	Present	Absent	Present	Ohyi 1975
6. Tanetonnai	Rishiri Island	Late Okhotsk	Present	Absent	Absent	Hall, Maeda and Hudson 2002
12. Onkoromanai	N. Hokkaido	Okhotsk period, upper layer	Present	Absent	Absent	Ohyi 1975
13. Tomarinai	N. Hokkaido	Okhotsk period	Present	Absent	Absent	Ohyi 1975
14. Kawajiri-kita	N. Hokkaido	Okhotsk period	Present	Absent	Absent	Ohyi 1975
16. Sakaeura II	E. Hokkaido	Okhotsk period	Present	Absent	Absent	http://www.city.kitagami.lg.jp
17. Tokoro chasi	E. Hokkaido	Okhotsk period	Present	Absent	Absent	http://www.city.kitagami.lg.jp
19. Futatsuiwa	E. Hokkaido	AD 800	Present	Absent	Absent	Yamaura and Ushiro 1999
20. Moyoro shell mound	E. Hokkaido	Okhotsk period	Present	Absent	Absent	Ohyi 1975
21. Motomachi	E. Hokkaido	Okhotsk period	Present	Present	Present	Ohyi 1975
22. Utoro	E. Hokkaido	Okhotsk period	Present	Absent	Absent	Ohyi 1975
23. Aidomari	E. Hokkaido	Okhotsk period	Present	Absent	Absent	Ohyi 1975
24. Sashirui	E. Hokkaido	Middle Okhotsk	Present	Absent	Absent	Amano *et al.* 2013
25. Tobinitai	E. Hokkaido	Okhotsk period	Present	Present	Present	Ohyi 1975, Onishi 2003
26. Tsujinaka	E. Hokkaido	Okhotsk period	Present	Absent	Absent	Ohyi 1975
28. Tōsampuru	E. Hokkaido	Okhotsk period	Present	Absent	Absent	Ohyi 1975
29. Bentenjima	E. Hokkaido	Okhotsk period	Present	Absent	Absent	Ohyi 1975
32. Aenoae dune	W. Hokkaido	Okhotsk period	Present	Present	Absent	Matsumura *et al.* 2006

* For the Kafukai A-site, more detailed information about the quantity of potsherds is available. A total of 90.308 Okhotsk sherds has been found at the site, versus a total of 370 Satsumon sherds.

5.5 – Symbolic entrainment

What little we know of Okhotsk religious beliefs is largely tied to the figurines and ritual structures that have been found at Okhotsk sites. I have already discussed the dog and sea mammal bone arrangement from the Kafukai A-site. In the background

chapter I have described how frequently, houses contain skulls of bears or sea-mammals on opposite ends (Yamaura and Ushiro 1999, 44; Ohyi 1975, 132). The most commonly seen type of ceremony, involving bears and their remains, is known from Okhotsk, Satsumon and Ainu sites, and the importance of the Ainu bear ritual has been documented ethnographically (Utagawa 1999). I have examined the Okhotsk sites for evidence of bear remains, bear figurines and other carvings (table 4 and 5). Research by Masuda *et al.* (2001) reveals interesting data on the origins

Table 4: Distribution and quantity of bear remains at Okhotsk sites

Site name and number	**Region**	**Phase**	**Quantity of bear remains**	**Description**	**Source(s)**
3. Kafukai A	Rebun Island	Early-Late Okhotsk	12	-	Ohyi 1981
17. Tokoro chasi	E. Hokkaido	Okhotsk period	110	Large amount of skulls in one pit house	http://www.city.kitagami.lg.jp, Tetsuya Amano pers. comm.
20. Moyoro shell mound	E. Hokkaido	Okhotsk period	A pile	Multiple bear skulls found in pit no. 7	Befu and Chard 1964

Table 5: Distribution and quantity of bear carvings and bear figurines at Okhotsk sites

Site name and number	**Region**	**Phase**	**Number of carvings/ figurines**	**Description**	**Source(s)**
1. Hamanaka 2	Rebun Island	Early-Late Okhotsk	1	Figurine of a woman, possibly holding a bear cub	Hudson 2004
3. Kafukai A	Rebun Island	Early-Late Okhotsk	45	Figurines sometimes display a bear sitting or with a fish	Hudson 2004, Ohyi 1981
12. Onkoromanai	N. Hokkaido	Okhotsk period, upper layer	Present, number unknown	Figurines of sitting bears	Ohyi 1981
17. Tokoro chasi	E. Hokkaido	Okhotsk period	2	-	http://www.city.kitagami.lg.jp
27. Matsunorikawa Kitagishi	E. Hokkaido	Okhotsk period	1	Wooden bowl w/ carved bear head	Yamaura and Ushiro 1999

of the brown bears found at the Kafukai A site that will be discussed in the next category of Peer Polity Interaction. In recognizing a possible continuity of the bear ritual, it is important to consider what is known about the Ainu bear ritual, as it is known historically. The Ainu bear ritual is but one of multiple ceremonies called *iyomante*, in which spirits are sent back to the heavens (Utagawa 1999, 256). The Ainu are animistic, believing that everything has a spirit or *kamuy*. When these spirits come to earth, they take on the disguise of certain animals such as the Asian brown bear or killer whale. The Ainu are thankful for the resources that these creatures provide, and take care not to be wasteful. These rituals were practiced in places called *nusa*, the 'sending-back place'. Interestingly, Ainu living along the coast regarded the sometimes still visible archaeological shellmiddens and pit houses of their ancestors as evidence of sending ceremonies in ancient times (Utagawa 1999, 256). Although not mentioned specifically by Hiroshi Utagawa, this may have included Okhotsk archaeological features as well, based on their increased visibility in the landscape due to their height and size. Utagawa mentions that notably, archaeological investigation of ancient *nusa* revealed a distinct lack of fish owl remains, an animal for which rituals were held often in later times. Since his writing, a preserved wooden owl carving has been discovered at pit house 15 of the Tokoro chasi site (fig. 11).

Fig. 11: Owl sculpture carving, preserved by fire, from the Tokoro-chasi site. Approx. 900 AD (http://www.city.kitami.lg.jp)

5.6 – Ceremonial exchange of valuables

The importance of the bear in Okhotsk culture was significant, and the find of 110 bear skulls, recovered from a pit house of the Tokoro chasi site, an exceptional amount even for Okhotsk sites, must be noted (table 4). Further evidence reveals another side of bear rituals: exchange of bears. In particular, evidence for the

transport of bears from the southern Hokkaido to the north. The Kafukai A-site, as we have seen, is located on Rebun Island, where no remains of bears have been found prior to the Okhotsk period. Remains of 12 bears from this period have been analysed by Masuda *et al.* (2001) in reference to the genetic structure and habitat of modern bears found on the main island of Hokkaido. Based on radiocarbon dating of ashes from the site, the remains are estimated to be between 1000 and 1400 years old. It was found that the archaeological remains from three bears corresponded to that of the southern Hokkaido cluster, and the rest to the northern Hokkaido cluster. None corresponded to the eastern Hokkaido cluster. Those from the southern area are of interest, as this area was occupied by Satsumon people at the time. Furthermore, the three bears from that area were determined to be juveniles less than one year old, as opposed to the others who were older than three years. This suggests that bear cubs may have been transported from southern Hokkaido and brought to Rebun Island by boat.

5.7 – Flow of commodities

As opposed to the previous category of exchange, here the focus is on large scale exchange of commodities. There are a number of interesting cases of this, such as Satsumon artefacts found in Okhotsk sites and other clues for this type of interaction. First, contemporary occurrences of Okhotsk and Satsumon pottery are considered. If we examine pottery as seen in table 3 again, three sites show the presence of both Okhotsk and Satsumon pottery on the same site.

The Kafukai A-site is the most well-documented of the three. Postdating the fishbone layers from the Okhotsk phase of the site, two pit-houses (nr. 3 and 4) were found, both attributed to a Satsumon phase through typological comparison of pottery (Ohyi 1981, 713). Ohyi suggests a recession of Okhotsk culture on the site, after which a short occupation followed by Satsumon people. Then, the site was abandoned until modern Japanese immigrants moved there (ibid.). Interestingly, a few of the pieces of Satsumon pottery were found in the Okhotsk fish bone layers among Okhotsk type pottery. This would suggest at least a few commodities were

exchanged between the occupants of the Kafukai A-site and bearers of Satsumon culture on the Hokkaido mainland.

For the Motochi site on Rebun Island, something similar occurred. Motochi is a site with Okhotsk type pottery and the typical characteristics of an Okhotsk site. Ohyi reports that, in the upper layer, right over the previous fish bone layer containing Okhotsk pottery with parallel line incisions, examples of Satsumon pottery and sherds have been found. Other artifact assemblages from that phase of the site, such as the bone and antler implements, stay virtually the same. Okhotsk pottery continues to be used (Ohyi 1981, 146).

Aeonae dune site is another interesting case. Both Okhotsk and Satsumon remains were found there. Finds of Okhotsk pit-houses, Satsumon and Haji pottery, a jasper bead and Hokkaido obsidian have been documented. However, while the site is culturally characteristic of Okhotsk culture, the three human burials display a morphology that is closer to Epi-Jōmon and Ainu skeletons (Matsumura *et al.* 2006, 17). Comparison with Satsumon skeletons was not possible. The site has yielded several radiocarbon dates from charcoal, carbonized remains on pottery and a carbonized walnut, giving a calibrated 1 sigma date ranging between 370 BC for the oldest and 540 AD for the youngest remains (Matsumura *et al.* 2006, 4). This age range, if fitted into the chronological overview of the Okhotsk period, places the site in the Early Okhotsk phase.

Another commodity would have been iron goods, known to be obtained by trade with the north and, to the south, the rest of Japan (Amano 2013, 1). Okhotsk culture itself possessed the technology to mend and reforged these objects themselves. On the Kafukai A-site, the use of stone artefacts seemed to decrease over time, while iron artefacts became more common. Ohyi (1981, 717) suggests this possibly resulted in the deterioration of Okhotsk stone tool production technology over time.

5.8 – Language and ethnicity

Another facet of interaction in the Peer Polity Interaction model is the language that was spoken between peoples. For Okhotsk culture, we have no knowledge of their language, and no written evidence of it. In the case of the Ainu we do, but here we stray from the scientific data produced by archaeological research and have to deal with historical and ethnographical sources. The Ainu did not traditionally use an alphabet as their language was only spoken, not written. This means there are also no traces of the language found archaeologically. Although I remain optimistic about the insights linguistic research may produce regarding Ainu origins, it is difficult to correlate this with Okhotsk archaeological material. Nevertheless, there may be some relevant commonalities and differences that this approach can provide and thus I shall make a cautious attempt.

Nowadays, Ainu language is only spoken by a few speakers (Tamura 1999, 57). Both Roman letters and Katakana are used to record it (ibid.). However, its origin is distinctly different from that of modern Japanese (Tamura 1999, 62-63). The study of place names has revealed Ainu words in documents as far back as the 8th century. Tamura (1999, 59) describes how to the south, Ainu vocabulary is found among hunters on Honshu in the area north of Sendai. To the north, it was reportedly spoken in the Russian Primor'ye (a far eastern maritime province of Russia) and the lower Amur River region. In the latter region, documents from 200 years ago also claim that people there believed to be descended from the Ainu. Both claims are still uncertain according to the author but perhaps a study of the origins of the people in this area can shed light on these claims.

There are also some regional differences. At the start of the 20th century, the Ainu language could be divided in three dialects specific to the Kuriles, Sakhalin and Hokkaido respectively. There are no native speakers left on Sakhalin and the Kuriles, in part because the Soviet Union took control of these areas in 1945. Most of the Ainu people moved to Hokkaido where only the Hokkaido and Sakhalin dialects remain. This makes it difficult to link the distribution of dialects to the presence of Okhotsk and Satsumon groups in the past, but I will make an attempt nonetheless. According to Tamura (1999, 59), the Hokkaido dialect can be further

divided in a northern and southern variant, or even northern, eastern/middle and southern regions.

The origins of Ainu language have been hotly debated since then end of the 19th century, but a consensus has emerged that originally it does not have an affinity with Japanese (Tamura 1999, 62-63). What languages it does share affinity with, according to different scholars, ranges from Finno-Ugric and Samoyed (northern Ural-Altaic groups) to Eskimo, Native American and Basque languages. Some even believe it to be an isolated language of the world (Tamura 1999, 62). If this is indeed the case, tracing an Okhotsk influence in Ainu language is an exceedingly large challenge.

6 – Discussion

In this chapter, I will interpret the findings for each form of interaction, ending with a discussion of how these interpretations relate to the different theories about the end of Okhotsk culture that have been discussed in chapter 4.

6.1 – Competition

We have seen the occurrence of a single possible group ritual structure at the Kafukai A site. I posit that the structure can at least partly be explained as a combination of hunters pride in amassing this amount of (particularly) marine mammal skulls, as well as an attempt to guarantee future fishing and hunting success due to the remarkable number and specific type of skulls. To what extent this was a group ritual is hard to say, but it is not immediately obvious that it would have involved interaction with neighbouring Satsumon groups on Hokkaido. However, the Kafukai A site is well documented across multiple periods and also contains two Satsumon houses (Ohyi 1981, 713). Considering the long continuity of the site across different phases, it is not unlikely that at some stage Satsumon people visited the Kafukai A site, or at least knew about it.

Even in eastern Hokkaido where the Tobinitai culture emerged, a hybrid of Okhotsk and Satsumon characteristics, we cannot recognize archaeologically any such group ritual sites. Perhaps this is a matter of looking in the wrong place, seeing as Okhotsk residential sites are likely easier to recognize due to their typical location along the coast on higher places like sand dunes. They also frequently have shell middens associated with them. If a ceremonial site was normally constructed away from these places, it might make finding such a ritual site context rather difficult.

Another explanation for the absence of competitive interaction may be the linear distribution of Okhotsk villages, stretching all the way from Sakhalin in the north, down the east coast of Hokkaido and into the Kuril islands. This may have

made it difficult to choose a ritual site or meeting place that is equally accessible to most participating parties.

6.2 – Competitive emulation

Evidence for this form of interaction seems scarce. If feasting as described by Hayden and Villeneuve (2011, 441) did occur, what would we expect to see? A particular arrangement of ceramics or iconography typical to feasting has not been detected. This leaves us with determining feasting based quantity and type of faunal remains. If one or multiple hearths, associated with a large amount of bones, were deposited as the result of one such feast and not over time, this might show that the Okhotsk engaged in such practices. However, in shell midden data, a simultaneous deposit from such a feast is difficult to distinguish amidst all the material that it is made up of. Therefore, there is no evidence that large scale feasting was regularly practiced in north, east nor west Hokkaido by the Okhotsk people.

6.3 – Warfare

Evidence for this form of interaction is rare. Based on the low amount of iron weaponry, mostly in a burial context, it does not seem warfare on a large scale has taken place. Perhaps further analysis could indicate whether or not the iron weapons were actually made for, and used in, battle. Until then, it seems more appropriate to regard them as symbolic artefacts.

Even if we consider a struggle over resources between Okhotsk and Satsumon people, a lack of demolished settlements and skeletons showing battle wounds makes warfare unlikely. There are also no settlements constructed directly on destroyed ones. Also, I postulate that the Okhotsk and Satsumon culture would not be in conflict over the same food sources. They both exploited very different food sources, namely marine resources in Okhotsk culture and agricultural and riverine resources in Satsumon culture. There was also a differing preference for settlement location between Okhotsk and Satsumon culture, as a result of these subsistence strategies. Okhotsk people settled near the coast, whereas Satsumon people built settlements further inland along rivers.

In addition, in northern Hokkaido, Okhotsk settlements are said to have been abandoned in a relatively short time and the Okhotsk people driven to the north by Satsumon expansion (Ohyi 1975, 146). However, there is no evidence this is caused by warfare or other conflicts. In short, there is no evidence for warfare on any recognizable scale.

6.4 – Transmission of innovation

In the case of Okhotsk culture, hybrid pottery styles proved to be one of the more useable occurrences of transmission of innovation to determine in this analysis. The Motomachi site is an interesting example of transmission of innovation. As the group that inhabited this site was mostly Okhotsk in its characteristics, it seems reasonable to conclude that acculturation over the course of contact with Satsumon culture led to new building techniques and pottery techniques. This would have produced such new local hybrids. The Tobinitai site, the prime example of the late phase of Okhotsk culture in eastern Hokkaido where both Okhotsk and Satsumon characteristics were found in association, further supports the transmission of stylistic and technical innovations.

6.5 – Symbolic entrainment

A connection between the bear rituals of Okhotsk culture and those of later native groups seems easily made. Similar bear ceremonies are also known from other, later cultures in the Amur area (Yamaura and Ushiro 1999, 44). However, there are some differences between the Ainu bear ceremony we know ethnographically and the Okhotsk bear ritual. Evidence for the latter is found largely inside pit houses. In the Ainu *iyomante* however, the bear skull is eventually placed outside.

The *iyomante*, in short, progresses as follows: first, hunters capture a bear cub. It is then raised in the village for about a year and a half, sometimes nursed by the women. Then, a major ceremony takes place. Members from different communities gather, making it an opportunity to display wealth and political power. As a side note, the items denoting wealth were often goods acquired through trade, and considered respectful offerings to the gods. Then, the bear is wounded and

subesquently killed by strangulation. The bear is skinned and dressed by elders and placed on the treasure altar. A feast takes place, after which the bear remains are brought indoors through the sacred window and feasting continues. Afterwards, the skull is placed outside on a pole for the bear deity to depart. This ritual signifies the rebirth of the bear and is a cosmic exchange between the Ainu and their deities. If the bear is treated well by the Ainu, its spirit will reward the Ainu with meat and fur (Ohnuki-Tierney 1999, 241-242).

Utagawa also states that this type of ceremony, involving a cub that is brought into the village and raised there before being killed, only seems to have emerged in Ainu culture as late as the 18th century. This is preceded by finds of bear remains in ritual deposits from earlier times, which are almost exclusively of mature individuals (Utagawa 1999, 260). However, we have seen that for the Kafukai A-site, this may not be the case. His statement on the Ainu bear ritual is also contradicted by evidence brought forth by Yamaura and Ushiro (1999, 44), who in the same volume remark about Okhotsk culture how "…detailed examination of the bear skulls (tooth wear, muscle attachments) shows that these animals were probably raised in captivity, as was the case in the Ainu bear-sending ceremony…". Another possible piece of evidence for a cub-type ceremony was found on Rebun Island in the form of a figurine of a woman holding what may be a identified as a bear cub (fig. 5) (Hudson 2004, 30). Hudson theorizes that this could be an indication of a practice of raising bear cubs to adulthood in the Okhotsk period, and the role of bears as 'socially valued goods' in Okhotsk culture. Unfortunately, it is hard to recognize whether the figure is holding a bear cub or her child. As for other figurines, on the Kafukai A site alone, a total of 45 bear figurines was found. Most in a sitting position, and some holding fish, they were carved from the nose bone of a type of shark. Similar figurines are known from the Onkoromanai site (Ohyi 1981, 718-720).

Archaeological research of Ainu sites has led to a classification of several types of ritual features, which may have had roots in earlier times. Utagawa (1999, 258) describes the different categories of *nusa* that known from the Ainu period

archaeologically. To provide a short summary, the first type he calls 'soil-conscious', and it includes *nusa* found in the remains of older pit houses, or arrangements of bear skulls in a low rectangular mound. Secondly, there is the 'stone-conscious' type, describing *nusa* that are associated with intentional arrangements of rocks or on special rock outcrops. A third one is the 'shell-mound' type, centered around shell mounds. In one such instance, a deposition of material in three separate areas could be seen: one for shells and sea mammal bones, one for fish bones and one for shells. A fourth form, the 'tree-conscious' form, involves a spirit tree as the locus of sending ceremonies. The fifth category houses all other cases that cannot be tied to any specific geographic context. If we apply these different categories of Ainu *nusa* to the Okhotsk archaeological material, there are similarities. The arrangement of skulls and rocks at Kafukai A-site could be classified as a form of stone-conscious *nusa*. The ritual placement of skulls on either side of the pit-house seems to fit in the category of a soil-conscious *nusa*.

To ease determination of an archaeological *nusa*, Toyohiro Nishimoto has suggested several main conditions in defining such a ceremony site. These include the presence of a skull, bones representing part of a single species, the methodical arrangement of bones, accompanying remains of a building or a structure, and evidence of processing, for example burned bones or holes in the skull (Utagawa 1999, 259-260). According to these characteristics, *nusa* for the ceremonies for sending back animals have been distinguished in both Okhotsk and Satsumon culture (ibid.).

If Utagawa's classification of *nusa*, with its admittedly rather artificial distinctions, is anything to go by, the organic material component of ritual sites is probably much more substantial than what we know based on the limited finds until now. While intriguing, ritual practices continued to evolve even in the Ainu period itself. This means we have to exercise caution in assuming a continuity in sending rituals.

While the *iyomante* was but one of the sending rituals relating to animals, the Ainu also had two other types of sending ceremonies, for plants and tools. In Okhotsk

culture, some plants were part of subsistence but only to a small degree. Satsumon people relied on plant food more, and as such an origin for such a ritual may have been present in their culture, though there has been no evidence yet to suggest this was the case. The presence of such sending ceremonies, in which respect was paid to the spirits that provided the people with enough foodstuffs and other resources, could have been a connecting factor between Okhotsk and Satsumon culture. Certainly, bear ceremonialism was present in both Okhotsk and Ainu culture.

I am of the opinion that, regarding the bear ritual, there is a degree of symbolic entrainment at work, especially with the additional evidence of bear cubs being provided by Satsumon people. This would have exposed Satsumon culture to the bear ceremonialism of the Okhotsk people, increasing their familiarity with this particular aspect of Okhotsk ritual.

6.6 – Ceremonial exchange of valuables

If Hudson (2004, 30) is to be believed, and bears are indeed 'socially valued goods', then this opens up the possibility of ceremonial exchange. Although the article about the bear DNA by Masuda *et al.* (2001) refrains from commenting on the circumstances under which the transport of bear cubs to Rebun Island would have taken place, there may have been both an economic and a ritual aspect to this exchange. Perhaps the economic function preceded the ritual one. On the Satsumon side, bear skins and bile may have been products of interest. Bile in particular is known historically, and still is, ascribed a medicinal value against a multitude of ailments. If the product given by the Okhotsk in return was something like of sea mammal products and furs, evidence for these materials needs to be examined on Satsumon sites where possible.

At the Tokoro chasi site, no less than 110 bear skulls were found in a single pit house (Tetsuya Amano, pers. comm.). Other sites such as Kafukai A and the Moyoro shell mound have produced multiple skulls as well (table 4). It may not unreasonable to imagine a shortage of bears in the vicinity of Okhotsk sites. Certainly for Rebun Island, where bears are not found naturally, a solution would had to be found. Thus, the Okhotsk people would have had to look further afield

for bears for their ceremonies. This could have led to a mutually beneficial exchange between Satsumon and Okhotsk groups, with Satsumon groups giving young bears to the Okhotsk people to be raised, and the Okhotsk people giving Satsumon people some of the products of the ritual killing, or products of a marine nature. Over time, the Satsumon people could have grown more accustomed to this ritual practice and adopted it themselves. While we have evidence to support exchange with Rebun Island, it is unclear if the situation was similar for Okhotsk along the eastern coast of Hokkaido. Whatever the case, the presence of skulls of bears older than three years means that apart from any exchange, bear hunting was also practiced.

6.7 – Flow of commodities

Looking at the distribution of commodities, pottery is among the most well documented kind of artefact. Sadly, with the data often mentioning just a few examples of the pottery found on the site, or providing only general descriptions, it becomes more difficult to assess changes over time. Still, in instances where there is a mention of both Okhotsk and Satsumon pottery occurring on the same site, we may infer some kind of interaction has taken place.

The Kafukai A-site again proves the most informative through its extensive documentation. The combination of a few pieces of Satsumon pottery in the Okhotsk layer, later followed by a Satsumon phase of the site is not known from any of the other sites. I agree with Ohyi (1981, 716) that the intrusive Satsumon wares suggest some temporal contact between the Okhotsk and Satsumon people.

The Motochi site, also on Rebun Island, paints a somewhat similar picture. Based on the continuation of the bone and antler artefact assemblage, it seems likely that an Okhotsk group continuously occupied the site, with Satsumon wares again making an intrusive appearance. I interpret this also as the result of exchange of an Okhotsk group with Satsumon people from the mainland, at a time when Satsumon groups may not yet have themselves migrated to Rebun Island.

The Aeonae dune site is unique in its combination of Okhotsk cultural characteristics and non-Okhotsk skeletal morphology. The presence of pit-houses,

in combination with the finds of traded goods like Satsumon and Haji pottery, a jasper bead and Hokkaido obsidian, have led Matsumura *et al.* (2006, 18) to believe in a possibly significant duration of occupation, perhaps centered around trade. As an Early Okhotsk period site, it shows that interaction between Okhotsk and Satsumon culture was not exclusive to the later stages of Okhotsk culture.

More evidence for the exchange of commodities concerns the iron goods they imported. Research by Amano *et al.* (2013, 16) has revealed that the origin of most metal goods in the Early and Middle Okhotsk period must be found in the Amur river area, while in the Late Okhotsk period there is a shift towards the use of iron artefacts with a Satsumon origin. It is understood by the authors as signifying increased social contact between Okhotsk and Satsumon culture. The authors also suggest that in eastern Hokkaido, where iron forging technology starts to decline first, there was easier access to Satsumon iron objects and Okhotsk people may even have had Satsumon craftspeople repair them (Amano *et al.* 2013, 4). I agree that this is a logical explanation for the observed phenomenon that fits the idea of exchange increasing in eastern Hokkaido. Overall, the flow of commodities seems to increase in eastern Hokkaido first, and northern Hokkaido later. Iron goods were valued in Okhotsk society, but some pottery also made its way into Okhotsk settlements without much change in the Okhotsk way of life.

6.8 – Language and ethnicity

While I agree with Matsumura *et al.* (2006, 1) that the Okhotsk people, given their origins, most likely had a separate language or languages, much remains speculative regarding the issue of language and ethnicity. If the distribution of Ainu dialects is anything to go by, we might infer some sort of regional identity between the northern, eastern/middle and southern Hokkaido areas. This shows some similarities with the division of Okhotsk culture in a northern region, an eastern region were interactions with Satsumon culture first start to increase, and a southern area occupied by bearers of Satsumon culture. Of course, in equating this regional division between different time periods, a high degree of continuity is assumed.

7 – Conclusion

This brings us back to the question: To what extent can the application of Peer Polity Interaction theory on material culture found at Okhotsk archaeological sites inform us about the role of Okhotsk interaction and exchange with Satsumon culture in the transition to proto-Ainu culture that took place on Hokkaido at the end of the Okhotsk period?

My hypothesis was that Okhotsk culture was well adapted to its environment, and occupied a different niche in its subsistence strategy meaning conflict over food sources was unlikely. The strong cultural continuity on Okhotsk sites has proved apparent, and Satsumon features in pit houses and hybrid pottery only appear late into the Okhotsk period. As predicted, there is almost no evidence of conflict that is recognizable in the archaeological data, in terms of weaponry, settlement destruction and manually inflicted damage on skeletons.

I also proposed that exchange of a mutually beneficial nature took place. The archaeological evidence points to an increased reliance mainly on iron goods, but also some amount of (young) bears as seen in the case of the Kafukai A-site. In eastern Hokkaido, this process seems to have started earlier and led to an assimilation of Okhotsk culture in Satsumon culture, seen in sites like Tobinitai. The Aeonae dune site in western Hokkaido also shows early signs of cultural integration, but this time of Satsumon people in a settlement that is characteristic for Okhotsk culture. In northern Hokkaido however, there does not seem to have been such a gradual absorption. Sites on Rebun Island show some trade goods and bear cubs of Satsumon origin towards the end of the Okhotsk period. However, this is not followed by a gradual acculturation, as the remains of a Satsumon settlement at Kafukai are clearly on top of Okhotsk fish bone layers. Despite the evidence for continuous trade and exchange, the disappearance of Okhotsk culture proceeded differently in northern Hokkaido than it did in the eastern Hokkaido, possibly a result of Okhotsk settlements being located in closer proximity to those of the bearers of Satsumon culture.

It is now possible to assess some of the existing theories about the end of Okhotsk culture, as described in chapter 4. The evidence for the import of bears, iron goods and pottery points to trade as being the most important factor when trying to understand the end of Okhotsk culture. As such, I believe the hypotheses about the effects of trade and networks in the process of the disappearance of Okhotsk culture are the most pertinent to investigate further.

The theory of Mitsuaki Sugita about the role of marine-mammal fur and the effect of the collapse of the Tang and Parhae kingdoms on the mainland remains unfounded. Yamaura's theory on the marine specialization of Okhotsk culture for exchange purposes, however, fits with the evidence of increased import and long continuation of Okhotsk cultural characteristics. However, the critical transition in which Okhotsk culture is absorbed or abandoned is cannot be explained by this. At some point, it must have become more beneficial to conform to Satsumon culture. Perhaps this was due to changing demands. Through symbolic entrainment, some common ground in worldview may have emerged. This evidence of a reliance on trade in Okhotsk culture goes against the idea of Hudson (2004, 303) that Okhotsk trade was underdeveloped. At least for the late phase of Okhotsk culture, this seems unlikely. Ohyi proposed that Okhotsk culture in northern Hokkaido ended rather suddenly, as opposed to an assimilation taking place in eastern Hokkaido. It is still difficult to say what was different in the situation in northern Hokkaido that the decline of Okhotsk culture proceeded differently. We have seen, from Satsumon pottery at Kafukai A and Motochi and the presence of young bear cubs from southern Hokkaido on Rebun Island, that there was a small degree of contact with Satsumon culture even in northern Hokkaido.

Theories that cite warfare and conflict as the main reason for the demise of Okhotsk culture are simply not evident from the archaeological remains, and thus remain supported only by vague historical descriptions. Any warfare between Honshu and the bearers of Satsumon culture in southern Hokkaido is also not evident, judging by the presence of Haji ware and Japanese iron goods in Satsumon assemblages.

Third and last, theories about migration, mainly Hudson's theory about Satsumon expansion, are difficult to address with the limited archaeological evidence available. Perhaps investigation of Satsumon sites can give more clues to their expansion. Unfortunately, that was not possible within the scope of this thesis.

Evidence that mainly Satsumon culture is ancestral to Ainu culture still stands. However, it is clear that there is some continuity between Okhotsk and Ainu culture in the veneration of the bear in Hokkaido. There are differences in the locations where bear remains end up as part of the rituals, but this proves that changes over time may have occurred, just as they have later in Ainu times. The cub-type *iyomante* may also have early roots in Okhotsk culture, as seen at the Kafukai A-site. Therefore, the issue of Ainu origins is more complicated than seeing Ainu culture purely as the direct successor of Satsumon culture.

The application of a Peer Polity Interaction approach in the case of Okhotsk culture has proved successful in some respects, and less so in others. This approach allowed for a focus not only on the material, but also some symbolic aspects such as possible sending ceremonies. This helped shed light on some of the commonalities and differences between Okhotsk rituals and later ceremonies of the Ainu. I believe approaching the end of Okhotsk culture from a perspective of Satsumon dominance and Okhotsk periphery would have obscured any lasting impact of Okhotsk culture.

Employing the different forms of interaction as defined by Peer Polity Interaction theory also produced very different results. Examining the Okhotsk archaeological record for signs of competition and competitive emulation yielded only a few suggestions, but not much to go on. Warfare could also not be inferred from the low amount of evidence. Transmission of innovation was complicated in the case of Okhotsk culture. One would expect a certain degree of it to occur, but instead a reliance on trade eventually seems to have removed much of the stimulus for Okhotsk culture to practice metallurgy, and forms of hybrid pottery are uncommon. It seems that sometimes, the lack of transmission of innovation is the result of more intensive interaction, for example in the decline of Okhotsk forging technique seen in eastern Hokkaido at the end of the Okhotsk period. Easy access

to Satsumon iron and perhaps also craftsmen reduced the need for Okhotsk people to (re)forge iron themselves, thus furthering contact between the two groups. The perspective of symbolic entrainment provided many avenues for inquisition, one of which made it possible to compare the Okhotsk bear ritual evidence with that of later sending ceremonies. Ceremonial exchange of valuables is more difficult to recognize, though a good candidate is import of several bear cubs from Satsumon territory by bearers of Okhotsk culture living on Rebun Island. Examining the flow of commodities showed that Okhotsk culture did acquire goods from outside their culture, but incorporated them into their own society, for example adding to the assemblage of pottery they used and burying their dead with iron knives and swords. The final form of interaction, language and ethnicity, was hard to examine in the case of Okhotsk culture. Further analysis of the origins of Ainu language and the earliest places names of their settlements might provide some insight into the heritage of an Okhotsk language.

These preliminary results about the processes at work during the end of the Okhotsk period shed new light on the issue of interaction between hunter-gatherer and agriculturalists. They show that even on a regional scale, interaction and exchange between cultures can proceed differently, from gradual incorporation of and reliance on traded wares in eastern Hokkaido, to limited exchange and contact in northern Hokkaido. An overreliance on certain trade goods may stimulate more interaction, but also weaken the position of one party towards the other. In this case, specialization can lead to dependence. The lack of evidence of interaction and exchange with bearers of Satsumon culture in the north of mainland Hokkaido is notable. A possible explanation is a larger reliance on a trade network with Okhotsk groups on Sakhalin, but this remains to be examined.

I hope that this study of Okhotsk culture can be expanded upon, both in a horizontal sense by examining larger regional patterns, and a vertical sense by examining smaller case studies. As it is now, it reflects the available data from English sources, mostly secondary, about Okhotsk culture. Integration of Japanese sources will no

doubt add and nuance many of the points brought up in this thesis. For example, it was not possible here to give a more accurate timeframe of the developments in the Late Okhotsk period based on rather broad C^{14} dates and unspecific pottery descriptions. The lack of data in English on Satsumon culture and its developments also proved problematic, which is why Okhotsk culture is the main focus of this study. More published data from Satsumon excavations would have allowed for a better comparison between Okhotsk and Satsumon culture.

It is regrettable that there is not more English literature available on the archaeology of Okhotsk and Satsumon culture, as there is much Japanese data to use for analyzing processes of interaction and exchange between people occupying different subsistence niches. I believe studies of this area could provide much more insight into such larger research themes. Fortunately, the amount of English articles written on Okhotsk culture has shown an increase in the last decade, thanks in part to international research teams and projects such as the Baikal-Hokkaido Archaeology Project I was a part of on Rebun Island. I hope ventures such as these will to continue to stimulate scholarly exchange and interest in the Hokkaido's history.

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Abstract

Around the 12th century AD in Japan, a cultural transition takes place on the northern island of Hokkaido: Okhotsk culture and Satsumon culture (approx. 6th to 12th century AD) come to an end as Ainu culture emerges. The Okhotsk people, focused strongly on exploitation of marine resources, originated on the island of Sakhalin and migrated south to Hokkaido and along its northeastern coast. The Satsumon people on the other hand, lived mostly in riverine settlements on the southern half and inland of Hokkaido. They practiced agriculture of wheat, barley and millet, as well as salmon fishing. This cultural transition is not yet well understood. I will focus on the role of Okhotsk culture in this process. How did interaction and exchange of Okhotsk people with Satsumon culture impact its decline and the transition to proto-Ainu culture on Hokkaido?

To investigate this issue, Peer Polity Interaction theory is applied. Within this framework, eight different types of interaction are defined: competition, competitive emulation, warfare, transmission of innovation, symbolic entrainment, ceremonial exchange of valuables, flow of commodities, and language and ethnicity. This theory avoids insinuating dominance of one group over the other, and allows for the incorporation not just of material culture but also symbolic aspects. Using the English sources available, 32 Okhotsk sites have been examined for evidence of interaction and exchange with Satsumon culture according to these categories. The existing theories about the decline of Okhotsk culture involving migration, trade and warfare have been analyzed, and then reevaluated based on the results of the Peer Polity Interaction approach.

Evidence of Satsumon pottery at Okhotsk sites, iron goods and import of bear cubs all points to a larger reliance on trade and exchange than previously assumed, to the detriment of Okhotsk production. This increased interaction allowed for symbolic entrainment to occur, leading to a more widespread adoption of an early form of the bear sending ceremony. This ritual is known ethnographically from later Ainu culture, but not Satsumon culture which is said to be its main ancestor. This research aims to contribute to our understanding of interaction between marine hunter-gatherers and agricultural people.

Samenvatting

Omstreeks de 12e eeuw na Chr. in Japan vindt er een culturele overgang plaats op het noordelijke eiland Hokkaido: de Okhotsk en de Satsumon culturen (ong. 6e tot12e eeuw na Chr.) houden op te bestaan en de Ainu cultuur ontstaat. Het Okhotsk volk, dat mariene voedselbronnen exploiteerde, kwam van Sakhalin en migreerde zuidwaarts naar Hokkaido en langs de noordoostelijke kust. De Satsumon mensen leefden voornamelijk in nederzettingen langs rivieren op de zuidelijke helft en in het binnenland van Hokkaido. Ze verbouwden tarwe, gerst en gierst en visten op zalm. We weten nog weinig van deze culturele omslag. Ik focus op de rol van de Okhotsk cultuur in dit proces. Welke invloed had de interactie en uitwisseling tussen Okhotsk en Satsumon mensen op de ondergang van de Okhotsk cultuur en de overgang naar proto-Ainu cultuur op Hokkaido?

Om dit te onderzoeken is Peer Polity Interaction theorie toegepast. In dit theoretisch kader worden acht soorten interactie onderscheidden: competitie, competetieve wedijvering, oorlog, het meevoeren van symboliek, ceremoniële uitwisseling van kostbaarheden, stroom van goederen en taal en etniciteit. Deze theorie vermijdt aannames van dominantie van een groep over de andere, en omvat niet alleen materiële cultuur maar ook symbolische aspecten. Met behulp van de beschikbare Engelse bronnen heb ik 32 Okhotsk sites onderzocht op bewijs voor interactie en uitwisseling met Satsumon culture op basis van deze categorieën. De bestaande theorieën over de ondergang van de Okhotsk cultuur over migratie, handel en oorlog worden geanalyseerd en opnieuw geëvalueerd op basis van de resultaten van de Peer Polity Interaction aanpak.

Aanwijzingen van Satsumon aardewerk op Okhotsk sites, ijzeren objecten en de import van berenjongen wijzen op een grotere afhankelijkheid van handel dan voorheen werd aangenomen, ten koste van Okhotsk productie. Deze toename in interactie zorgde voor het meevoeren van symboliek, wat leidde tot de overname van een vroege vorm van het beerritueel. Dit ritueel is uit de etnografie bekend bij de Ainu cultuur, maar niet bij de Satsumon cultuur die gezegd wordt diens voorganger te zijn. Dit onderzoek heeft ten doel een bijdrage te leveren aan onze kennis van de interactie tussen jager-verzamelaars en agrarische volkeren.

Full internet sources:

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