McDONALD INSTITUTE CONVERSATIONS

# Social inequality before farming?

## Multidisciplinary approaches to the study of social organization in prehistoric and ethnographic hunter-gatherer-fisher societies

Edited by Luc Moreau

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*with contributions from*
Hervé Bocherens, Alberto Buela, Andrea Czermak, Christophe Darmangeat, William Davies, Mark Dyble, Kate Ellis-Davies, Ben Fitzhugh, Douglas P. Fry, Mietje Germonpré, Matt Grove, Emmanuel Guy, Brian D. Hayden, Rowena Henderson, Emmanuelle Honoré, Joe L. Jeffery, Charles A. Keith, Marta Mirazón Lahr, Noa Lavi, Robert H. Layton, Martina Lázničková-Galetová, Julia Lee-Thorp, Sheina Lew-Levy, Paul Pettitt, Rachel Reckin, Paul Roscoe, Mikhail V. Sablin, Rick J. Schulting, Patrik Söderberg, Duncan N.E. Stibbard-Hawkes, Ilga Zagorska, Gunita Zarina

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On the cover: *Rock art depictions at Wadi Sūra II rockshelter in Eastern Sahara, Egypt (photo Emmanuelle Honoré)*.

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# *Preface*

I write this preface from the state of Wyoming in the US, a state where COVID-19 has not (yet) struck as hard as it has struck other parts of the world, but where we nonetheless have been under stay-at-home orders. Those orders have given me plenty of time to think about where we went wrong, which in the case of the US is a long list. Coincidentally, I also recently re-read Machiavelli's sixteenth-century book, *The Prince*, a manual of how to ruthlessly crush opponents while administering (apparent) generosity to acquire the 'love' of the masses.

It was in this context that I read the papers in this volume. In doing so, I was struck by two facts. First, inequality's origin, development and operation are difficult to understand and yet the actions that lead to inequality are easy to implement. This shouldn't surprise us: no American baseball player mathematically calculates the arc of a fly ball, but he's still able to position himself in the right place to catch it. You can be utterly uneducated and still know how to manipulate a system to maintain exert, and abuse power. Many world leaders today are proof.

Second, I think that the papers in this volume could be some of the most valuable published in anthropology in many years. Philosophers and social thinkers have tried to understand inequality for a century; indeed, efforts to understand it precede Machiavelli. We bemoan its existence, and yet we have felt unable to grasp it, and, unable to grasp it, unable to do something about it. We muddled through the useless ramblings of nineteenth- and early twentieth-century evolutionists, who, reflecting their colonial environment, often thought that inequality was a good thing, and, if not good, an inevitable thing. Marx tried to shake them out of that complacency, but his brilliance was largely wasted during his 'second coming' in the second half of the twentieth century with so much hand-wringing about how a theory intended to explain early capitalism should also apply to hunter-gatherers (because, it must… right?), and so much politically correct posturing that led to no action – and all but disappeared when the Berlin Wall (thankfully) came down and the Soviet Union collapsed. 'Intensification' and 'complexity', words that should be stricken from anthropology's vocabulary for their uselessness (and that are thankfully rare in this volume), masked what was really going on: exploitation, oppression, slavery… inequality in all its manifestations. Finally, I think, we have reached the point, through analyses of archaeological and ethnological data, that we might actually understand inequality.

We've passed a Rubicon. And this really matters.

The calamity that is COVID-19 has pulled back the curtain on modern society, exposing the weaknesses of its structure, laying bare the inequality between and within countries that Machiavellian leaders exploit and exacerbate for personal gain. Doing something about inequality is the challenge that will remain after COVID-19 dissipates.

These papers help by seeking the origin of inequality in a kind of society, that of nomadic hunter-gatherers, that we once considered 'the original affluent society', a classless society, or 'primitive communists'. Some argue that inequality must be there (as Marxist analysts argued in the 1980s) since it is present in our closest primate relatives, and therefore is in humanity's genetic foundation. Some see evidence of social and/or political inequality among Palaeolithic hunters, in the evidence for secret societies and in the violence of cave art. I am not convinced by this 'grimdark' vision of Palaeolithic society, and see an enormous gap between difference and inequality, between a situation where one person has more than another who nonetheless has enough and one in which society gives a person permission to enslave another.

Nonetheless, these chapters remind us that hunter-gatherers are not angels, and the same self-interest that guides an Iñupiaq man to become a *umialik*, or that gave privilege to those men allowed to gather in the torch-lit gallery of Lascaux, guides Machiavelli's anonymous prince. People have different skills, and for some, those skills are political. Under the right conditions, those individuals can consolidate power, convince others to go to battle, and make their personal aggrandizement seem reasonable to the people paying its price. Palaeolithic society had its Hitlers and Stalins, its Caesars and Trumps.

But it didn't have imperialism, or empires, or palaces, or wealth hidden in tax havens. So other chapters here look for the conditions under which those 'selfish' individuals can gain power. High population density (pressure), localized and hence controllable resources,

the ability to build a coalition, which requires a sufficient concentration of population and social institutions that are conducive to creating coalitions, lack of trust in institutions, including sharing networks, to provide in times of stress – these are the conditions that permit those with political skills to pursue self-interest through the manipulation of others.

These conditions are as relevant to understanding the world of today as they are to an understanding of the Palaeolithic world. Today, however, conditions can be manipulated, for example 'localized' in off-shore bank accounts. Population pressure is high and will become worse as the world approaches the projected population of 11 billion by 2100. And competition is worsened by a capitalist economy that encourages ever-increasing amounts of consumption and conversion of needed resources, such as food, into higher profit margin items such as crisps and alcoholic beverages. Information is a resource, and technology makes information more available but less trustworthy. Unbelievably expensive displays of potential force – multi-billion-dollar aircraft carriers, atomic weapons, a Space Force – signal a lack of trust in non-violent institutions to resolve the inevitable disputes that arise when people, or countries, pursue their self-interests with little regard for others. Building trust in institutions – in the UN, in voting, in the media, in government itself! – is an integral part of stopping and even reversing the arms race before it drives the world to the poor house.

Inequality is an old story, and one that we understand much better due to the efforts of anthropologists and archaeologists. It hasn't been easy to arrive at this point. But the really hard work – implementing our knowledge – still lies ahead for us. This volume, and our prehistoric hunting and gathering ancestors tell us what needs to be done. And it is the most important work anyone could be doing in the world today.

Robert L. Kelly
University of Wyoming

# *Chapter 14*

# Reciprocity and asymmetry in social networks: dependency and inequality in a North Pacific comparative perspective

Ben Fitzhugh

The development or 'evolution' of institutional social differentiation, inequality and complexity has captivated the interest of anthropologists and archaeologists for well over a century. In the last two decades of the twentieth century, recognition of hierarchical or 'complex' hunter-gatherer groups challenged conventional wisdom about cultural evolution and the importance of agriculture in the emergence of social inequality. The purpose of this essay is to revisit behavioural ecological models of the emergence of institutional social inequality within hunting and gathering (or 'foraging') communities and to consider the implications of these models to understand broader (inter-community) social dynamics and histories across regions. This examination is based on comparison of two archaeological case studies from opposite sides of the North Pacific Rim: one from the Kodiak Archipelago in the Gulf of Alaska (supplemented with ethnographic details from the northern Northwest Coast) and the other from the Kuril Islands on the border of the Sea of Okhotsk.

I define 'institutional inequality' as vertical differentiation of status roles and accompanying privileges *codified in cultural norms and sanctioned through the operation of institutions that reinforce them*. The use of the term 'institutional' signifies a qualitative difference from inequality due to individually endowed or achieved variation in skill, charisma and accomplishments that can set individuals apart from their cohorts and even allow them considerable, if temporary, accumulation of power or wealth. Importantly, *non-institutionalized* status differences do not become normalized in social structures, are easily – even actively – reversed, and do not persist inter-generationally. Many primate societies and all human societies exhibit non-institutional inequalities and asymmetries to various degrees. One of the hallmarks of *Homo sapiens* sociality is the ability to suppress and equalize many potential inequalities through collective action and ideological reinforcement (Boehm 1993). The study of institutional inequality is, for many scholars, an effort to understand how and why those equalizing tendencies lose effectiveness in middle-range and larger societies. It is probably also fair to say that an implicit goal of this kind of research for many scholars is to understand how we might support greater equality in the present.

While limited structural inequality, beyond differences by age and sex, likely developed from time to time in the late Pleistocene and early Holocene as described by Brian Hayden (this volume; see also Soffer 1985; Vanhaeren & d'Errico 2005; Wengrow & Graeber 2015), the majority of archaeological examples of persistent inequality are found in the middle and late Holocene (Ames 2007; Richerson & Boyd 2001). This observation may be coloured by limitations in the preservation and identification of relevant correlates of inequality in earlier cases. Nevertheless, most known examples of ranked or hierarchical hunter-gatherer societies appear to have emerged from more egalitarian forms late in the Holocene and are quite rare overall (Price 2002: 418–19). The fishing, hunting and gathering societies of the North American Northwest Coast first exhibit characteristics of structural inequality (large houses, concentrations of wealth, exclusive control of resources, and specialized craft production) about 2600 years ago (Ames & Maschner 1999: 254). The Chumash of the Northern Channel Islands of California begin to show similar signs of persistent inequalities and control over non-kin labour approximately 1300 years ago (Arnold 1996; Kennett 2005: 198). The Florida Calusa chiefdom appears approximately 1200 years ago (Widmer & Widmer 1988; Marquardt 2004). In the Calusa case, large shell mound constructions and extensive canal systems reveal large-scale labour control. While more controversial, other candidates for inequality include the Late and Final Jōmon, *c*. 4300–2400 cal. BP (Habu 2004, 2014), Chaco Canyon,

*c*. 1000 cal. BP (Plog & Heitman 2010), Poverty Point, *c*. 3400 cal. BP (Gibson 2001; Ortmann & Kidder 2013) and its antecedents in the earlier 'Shell Mound Archaic' back to 5600 cal. BP (Sassaman 2004). In these and other cases, inequality is inferred from material differences in residential features, differential distribution of prestige/wealth objects, elite burial treatment, labour-intensive constructions such as monumental architecture. Institutionalization of these differences is inferred where these differences persist over time scales of many generations and sometimes where cultural practices, represented in art, ceremonial architecture and other means, reinforce and legitimize social differences.

Efforts to explain the existence of institutional inequality and complexity in foraging societies contributed to a major shift in late twentieth century anthropological thought. Previously, agriculture was seen as the key 'revolutionary' development leading to persistent inequalities and structural complexities. Reassessment of this view followed two contrasting realizations. The first was that ranked and hierarchical foraging societies operated in a number of locations around North America at the time of first European contact and had already been ranked and hierarchical for centuries or millennia. The second was that low-level food producing societies existed for thousands of years *without* significant rank or hierarchy. These realizations forced anthropologists to reevaluate long-standing assumptions about social evolution and to think more systematically about *how* social, economic, and environmental variability could interact and change social structures and the opportunities available to people within them (e.g., Ames 1995; Arnold 1996; Hayden 1994, 1997; Prentiss et al. 2003). The result was a dismantling of simple stage models of social evolution and the shift towards models that recognized multiple pathways to inequality and complexity that paid more attention to ecological processes, historical contingency, agency, and context (Feinman 1995; Feinman & Neitzel 1984; see also Pauketat 2001).

One approach to the study of social inequality derives from a focus on socio-ecological dynamics under the theoretical guidance of human behavioural ecology or HBE (Winterhalder & Smith 2000). Like others considering social inequality from an HBE perspective (Boone 1992; Kelly 1995, 2013; Kennett 2005), I am interested in how socio-ecological configurations can condition potentials for more or less egalitarian vs. non-egalitarian interactions and structures. Human behavioural ecology applies the logic of Darwinian evolution to the explanation of human adaptive behaviour in ecological contexts (Winterhalder & Smith 1992). HBE, like *Marxist* and *practice* approaches, assumes that social agency is, at least in part, motivated by perceived self-interest exercised in inherited social, cultural, and environmental contexts (Fitzhugh 2000). This is the framework in which I first explored the evolution of institutionalized inequality in the Kodiak Archipelago of south-central Alaska (Fitzhugh 2003). In this chapter, I revisit that research to elucidate a case of the evolution of politically ranked hunter-gatherers on the northern end of the North American Northwest Coast. I then turn to the Kuril Islands of the Northwest Pacific and apply similar logic to understand a very different trajectory of social change (Fig. 14.1). These cases are presented to explore key structural factors affecting more or less unequal social relations and how those variables might lead to the institutionalization of status inequalities at different scales and with different consequences for those living within their systems.

## Modelling inequality

In recent years, archaeologists exploring processes of social differentiation have recognized that inequalities can emerge under different circumstances and as a result of changes in different variables. From this we have come to question unilineal models and instead seek to better understand the multiple 'pathways to power' (see Hayden 1995; Price & Feinman 2010). One commonality of all or most of the pathways explored is asymmetrical access to resources of importance (food, raw materials, technology, trade routes, labour, defensive ability, etc.). In those cases, some proportion of the population lack (or can be denied) regular, secure access to those resources, while others can control that access. Finally, at least some of the disempowered individuals should be able to do better for themselves by providing services to resource controllers compared to some alternative strategy such as revolting, stealing, or moving away. As long as prospective subordinates can repel or escape dependence on despots, self-aggrandizing can be neutralized. This was, of course, a key insight from classic ethnographic research among hunting and gathering societies in Africa, such as that reported by Richard Lee (1969; see also Wiessner 1996). In intermediate cases (so-called 'transegalitarian', Owens & Hayden 1997), differential influence and status are limited to the ability of would-be elites to provide benefits to potential supporters.

Where options diminish for escaping subordination – perhaps because better alternatives have been claimed by others – the conditions for inequality increase. The degree of inequality should be determined by the relative leverage of would-be elites and supporters in negotiating patron-client relationships. If elites have total control over a resource of absolute necessity and are not dependent on others for different

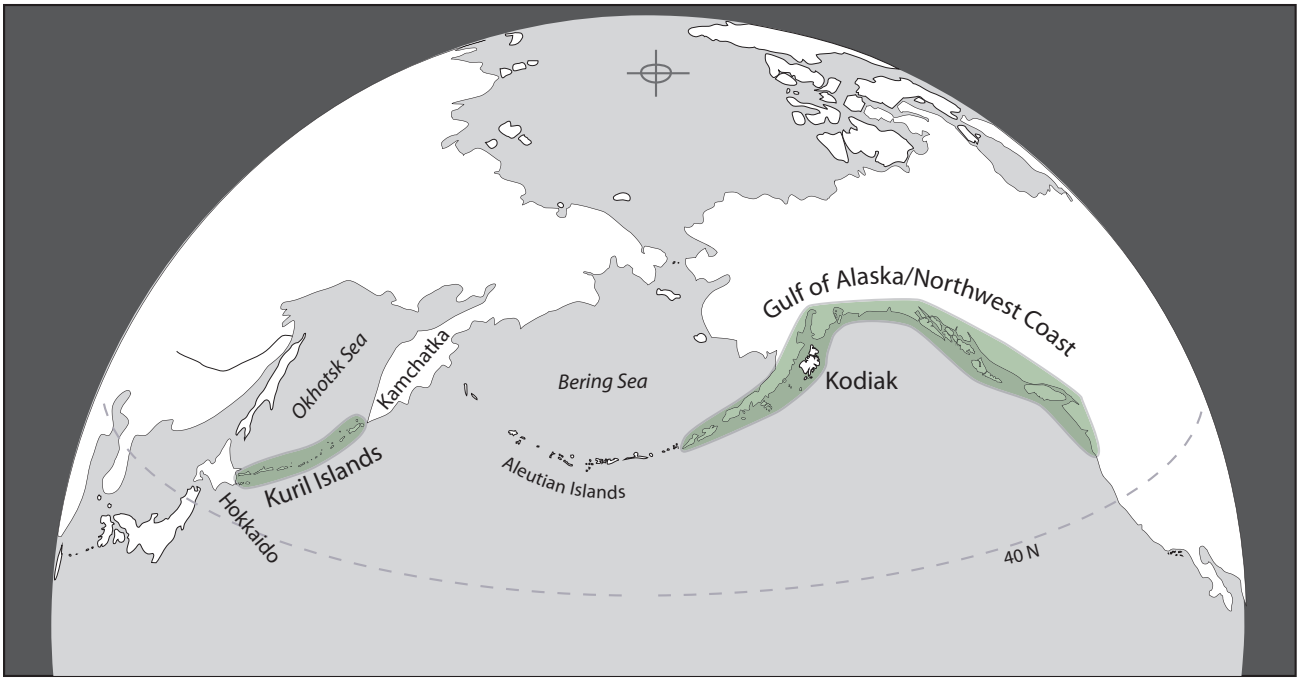


**Figure 14.1.** *Map of North Pacific showing the North American Northwest Coast, Kodiak, the Kuril Islands, Hokkaido and Kamchatka.*

resources, subordinates have little negotiating power. Their security lies in convincing the elites to support them in return for service, usually labour. If supporters have numerous options and many potential patrons to choose from, they should be able to negotiate beneficial terms in return for their support of elites. The degree of inequality should be more modest.

But on what economic basis do these negotiations turn? Below I will discuss an HBE model for the evolution of inequality proposed by James Boone (1992). It will help to conceptualize the nature of hunter-gatherer inequality with reference to the ethnographic evidence of the northern Northwest Coast.

*Inequality of ethnographic foragers on the northern Northwest Coast of North America*

At the time of contact with Russian, Spanish, British and U.S. explorers, hunting, fishing and gathering societies from Oregon to the Aleutians were arrayed in ranked and semi-hierarchical social structures. On the Kodiak Archipelago, ethnohistoric accounts from the early contact era (late eighteenth and early nineteenth centuries) document dense settlement, large villages, endemic and organized warfare, resource ownership and intense status competition (Black & Pierce 1989; Davydov 1976; Merck 1980). Many details of the social lives of pre-contact and contact era Native communities around the Gulf of Alaska were lost or suppressed by the time ethnographers arrived to make detailed descriptions (see Pullar 1992, 2001). Active efforts of Kodiak Alutiiq (Sugpiaq) leaders and others in recent decades, with contributions from archaeology among other fields, have reclaimed knowledge about aspects of that past (Crowell 2004; Crowell et al. 2001; Pullar et al. 2013). From those efforts, we understand that pre-contact Alutiiq communities, while linguistically and culturally affiliated with the Yup'ik people to the north, shared many structural features of complexity and inequality with those of Southeast Alaska and British Columbia (the 'northern Northwest Coast'). A review of some of those features is useful as a starting point to establish the range of inequalities present at the time of contact.

According to nineteenth and early twentieth century ethnographic documentation of northern Northwest Coast, ranked societies were organized into complex and nested institutions of inequality and democratic governance. Detailed accounts of Tlingit society by George Emmons, annotated by Frederica de Laguna (Emmons et al. 1991), provide a reasonable approximation of northern Northwest Coast societies, though differences in detail existed from group to group. Astonishing accumulations of wealth and power characterized Tlingit chiefs at the heads of large and resource-rich lineages. Chiefs presided with customary privileges over the productive labours of

their households (kin and slaves). Lineages were incorporated into multi-village clans, which were 'led' by a chief elected by the council of lineage chiefs, to manage the affairs of the clan, which itself held no property. In this way, hereditary inequalities were expressed within the confines of the lineage or 'house'. Chiefly lineages rarely incorporated more than the members of a single village. Indeed, some Northwest Coast villages included multiple, independent lineage houses, each led by its own chief, and each with independent territorial claims on resource extraction sites, slaves, and surplus production.

Within house-groups, members were ranked from chief and close kin ('nobles') to low ranking relations ('commoners') and slaves (e.g., Emmons et al. 1991: 21, 37–46). Slaves were derived from war captives and were sometimes traded between regions. They were unranked and technically outside of the lineage system, though they could be incorporated by marriage or adoption – impermanent statuses that could revert at the death of a patron. The status of 'slave' was itself inherited by the children of slaves. The material means of wealth and power – in the form of fishing, hunting and gathering locations, slaves and the collective labour of lineage members – was owned and inherited from chiefs to their close kin. Nevertheless, chiefly power and indeed the relative influence and prestige of lineage houses themselves had to be earned continuously through successful leadership, acts of bravery, and displays of productive power.

Feasting (*potlatches*) was at the centre of status competition between lineage houses, providing both a mechanism to bring glory to the house (and unify its members) and an opportunity to re-arrange relative status of lineages in the larger social order. Actions at potlatch ceremonies could cement alliances or trigger feuds that, in turn, altered political landscapes (Emmons et al. 1991: 46–8). These competitive social performances also provided regular opportunities for elites to size up the competition and to gauge the potential costs and benefits of alliances and conflicts with rival factions. While strategic alliances would have been critical to securing peaceful relations and dominance in trade, warfare provided an alternate form of status competition and another way to change the fortunes of lineage groups. Political leaders paid close attention to potential insults from rivals, as they could be used as levers for retribution claims and war raids, themselves tools for accumulating wealth, labour power, and status.

While approximate rank was inherited in most Northwest Coast societies, the boundaries between commoner and elite 'class' was permeable. Commoners could earn elite status through remarkable prowess, and elites could be demoted to commoner (or slave) status by incompetence, loss of kin support and subjugation in war. Chiefs had to earn the position and were often officially elected to the post by their elite kin, creating rivalries between siblings and cousins. Among the nineteenth century Tlingit, successors were often named by the ageing chief, but to take up the title, the new chief had to pass the judgement of the clan council after demonstrating their ability to finance an expensive feast or project (Emmons et al. 1991: 38–9).

Chiefs and other highly ranked individuals rarely had claim over more than their slaves and the subordinates in their own extended families. With a few notable exceptions (Macquina of the Nuchanulthaht on outer Vancouver island, for example; see Reid 2013), chiefly influence over other communities was limited to the respect and fear they earned as successful potlatch sponsors and war leaders. Most lacked the power to command members of other villages to any particular action.

While we lack comparably detailed ethnographic data from Kodiak, ethnohistoric accounts from the time of early Russian contact indicate that Alutiiq society was similarly organized. Their communities were structured around kin-based lineages with chiefs who owned valuable resource patches, threw celebratory feasts to honour ancestors and mark life events, and waged regular warfare on their rivals, including the Tlingit in Southeast Alaska and the Unangan (Aleuts) of the Eastern Aleutians (Davydov 1976: 22–3; Townsend 1983). On Kodiak successful whale hunters and warriors were revered, and chiefs managed villages of several hundred people (Clark 1984, 1987; Crowell 1994; Holmberg 1985). According to ethnohistoric accounts, the Natives of Kodiak were among the most populous, militaristic, and wealthy of the Gulf of Alaska, and the Russians both avoided and coveted the archipelago for decades before they were able to overpower the islanders and compel the leaders to come under their control (Black 1977, 1992; Knecht, Haakanson & Dickson 2002).

*Theorizing human egalitarianism and hierarchy*

Two significant archaeological or 'deep historical' questions arise from examples like those of the Northwest Coast and Kodiak. The first is how an elite class could have arisen over the objections of, or at least against the interests of, the majority of members of their communities. The reciprocal question is *why* powerful chiefs were rarely able to break out of the confines of lineal rank-groups to control multi-community polities as was seen in some other fishing, hunting and gathering groups (e.g., Florida Calusa) and countless agricultural ones. Scholars have taken a number of different

approaches to these questions over the years, exploring various combinations of environmental, social, and cultural factors and differing in their commitments to comparative generalization versus historical specificity and contingency.

I will argue here that certain aspects of ecological *structure* facilitate and constrain socio-political competition within foraging communities and provide at least partial answers to the two questions posed above, that is how those with aggrandizing tendencies or aspirations may become tolerated, and why their power may be held in check beyond certain degrees of influence.

Drawing from the HBE perspective, I begin my examination with the working assumption that social inequality is conditioned by structural differences in access to essential needs (in subsistence, raw materials, shelter, marriage partners, etc.). Differences can emerge where some people can control access to these resources and where the best alternatives for others is through service to those controlling them. The corollary assumption is that egalitarian relations will persist (or develop) where there is a lack of structural asymmetry between actors because everyone has the potential to acquire needed resources without unequal dependence on others or because everyone is exposed to similar risks of failure. These basic, materialist expectations leave open the possibility that inequality could develop in different kinds of social and economic settings (e.g., foraging or farming) and over access to different kinds of resources (e.g., productive natural resource patches, stored resources, labour, mates, or even symbolic currencies and sacred knowledge where they can be reliably converted into social and material benefits).

While social inequality is, by definition, *social* – it relates to the status of a person or group *in the eyes of the community* – recent cross-cultural study by Smith and colleagues (2010a,b; Bowles et al. 2010) shows that the major differences between more-or-less egalitarian societies and those with heritable inequality are most significantly tied to differences in material wealth. Other axes of inequality – which they gloss as *relational* and *embodied* wealth – also structure social relations in life, but are only weakly, if at all, transmitted. Presumably this is because only material wealth can be dissociated from the individual and exchanged, hoarded, accumulated (potentially without limits) and inherited.

Many scholars have argued that the key to inequality is the willingness of some members of a group to accept and even promote the unequal status of others above their own position. Furthermore, it is widely recognized that egalitarianism is not a natural or primal characteristic of humans (several of our closest primate relatives sustain hierarchical social structures through the achieved dominance of competitive individuals). Where egalitarian relations predominate (always imperfectly), members of society actively reinforce equality through persistent individual and collective action to diminish and discourage self-aggrandizing, wealth accumulation, and assertions of social power and prestige (Ames 2007; Boehm 1993; Woodburn 1982). The structural implications of such collective action are the establishment of institutions – cultural norms, traditions, and practices that reinforce egalitarian social structures (e.g., Endicott & Endicott 2008). The question concerning the emergence of institutional social *inequality* among human communities then is in explaining how such collective policing of egalitarian norms might fall apart and new norms developed that support asymmetric social relations.

Materialist explanations of such transitions often focus in coarse terms on the relationship between population and resource productivity. They imagine inequality to be the outcome of either abundance and relaxation of the toil of resource procurement or, alternatively, a managerial response to hardship, providing increased efficiencies through social coordination (see Ames 1995; Hayden 1995). Both models fail to specify the relevant, strategic relationships between actors in the context of ecological landscapes that I argue is needed to understand how some individuals might participate in their own subordination. In a now classic behavioural ecological analysis, James Boone (1992) combined HBE models into a mechanistic account of how structural inequality might come about. His approach has influenced a number of HBE archaeologists (Kelly 1995; Kennett 2005; Kennett, Anderson & Winterhalder 2006) and was used in my own examination of social change in the Kodiak Archipelago (Fitzhugh 2003).

Boone's model has two basic components. The first relates to the mechanics of social group formation. The second focuses on ecological structure, territoriality, and defence. The size of social groups is often conditioned by the benefits to group members of collective action and the degree to which potential joiners expect to see a significant improvement in their own benefits by joining the group. In the absence of differences in status or power, group members will seek to participate in groups that maximize their own return rates relative to investments. This goal will create conflicts between members and prospective joiners, for whom participation in a group of any size is better than conducting the activity alone. The result is groups that are somewhat larger than optimal (Smith 1981). Theoretically, such egalitarian groups are structured by individual calculations of the relative costs and benefits of joining or allowing others

to join a group larger than the optimal group size in which the returns of group membership are divided *equally*. Where interests are calculated strictly on partible shares, profit-maximizing members are expected to resist unequal claims by other members. Joiners, by contrast, might accept lower returns in exchange for shares larger than they would get outside the group, but once members, their calculus would change and they should push for more equal returns.

The members-joiners conflict has implications relevant to emergent social inequality among foragers. First, without industrial technologies, few subsistence pursuits will yield improved per capita returns (economies of scale) in groups larger than a few families, except in rare and short-lived cases such as communal herd drives and net hunting. Put simply, because most tasks reach diminishing returns relatively quickly as the number of participants increase, these groups will normally be small. Second, sizes of task groups and other social units, such as sharing networks and coresidential communities, can be modelled in a similar way based on the relative costs and benefits of communal engagement. Benefits of group membership may be estimated in terms of such variables as economic returns, risk minimization (food security), opportunities for collective labour, and availability of marriage partners. At the same time, members who benefit but fail to invest their share of labour or resources erode group benefits. It is hard to monitor the contributions of others in larger groups, creating social problems (who will pay the costs of enforcing participation?). As a result such conflicts are usually managed by limiting group size (e.g., through fissioning). Third, these tendencies for small groups in foraging societies makes it easier for members to enforce equality through various levelling strategies.

But there are circumstances in which small groups could nevertheless tolerate unequal distributions of benefits. In situations where subordinate members perceive indirect gains from the material well-being of a dominant member, they may tolerate or even support the differential wealth and status of that individual (Vehrencamp 1983). To work, the indirect benefits would have to outweigh the loss in direct benefits. This would be rare in an environment of equal opportunity and risk, but more likely under other conditions.

Boone turns to the socio-ecology of resource competition to complete his argument. Foraging entails the pursuit of subsistence resources that vary in predictability and productivity in both space and time. More evenly distributed resources or those that are unpredictably located in space require flexible harvesting strategies, often by small groups moving frequently. There is little benefit to claiming or defending patches. The same is true for temporally unpredictable prey such as highly mobile, large bodied animals. On the other hand, resources that are predictable in place and timing may be worth claiming and defending where there is competition over access and when territorial defence is practical (resource patches can be circumscribed and controlled). In such cases, the likelihood of competition increases when the environment becomes crowded or resources become scarcer. Competition is also more likely when productive resources are concentrated in widely separated 'hot spots' in an otherwise poor resource landscape (i.e., a *patchy* resource environment). Where predictable and productive resources are patchy, it can be possible and even beneficial to pay the extra costs of defending them from others. This is especially so if the controlled resource can be traded for other resources or labour. Even in a social context in which overt aggrandizing and despotic behaviour is discouraged, the ability to give more often than take will positively skew opinion, influence, and status.

Competition comes in two idealized forms that Boone (1992) refers to as *scrambles* and *contests*. Scrambles are unstructured races to capture a share of a resource. They occur when resources are distributed in ways that cannot be exclusively controlled (sometimes called *Ideal Free Distributions* or IFDs), and these kinds of competitions are won by those with the best ability and good fortune. An IFD is characterized by an unpredictable resource environment that renders previous actions – including position in the landscape – ineffective in ensuring benefits in subsequent competition. Musical chairs and candy toss games are scrambles, in which the best strategy is to target resources themselves rather than challenging others. In IFD ecosystems where the success of individual foraging groups is asynchronous with that of others, sharing is a common mechanism for ensuring mutual welfare (Winterhalder 1986).

In situations in which one actor or set of actors has a historically derived advantage in claiming access to resources, competitions shift to contests, which tend to involve direct challenges to resource controllers. Contests occur where the distribution of resources is patchy and where relatively high-yielding resources are geographically predictable, and where those resource patches or their extracted products (stores) can be defended effectively. Contests supplant scrambles as the best resource patches are claimed and defended. These characteristics define the *Ideal Despotic Distribution* (IDD), and they are ripe for the emergence of resource controllers who take advantage of first arrival or other unique circumstances to control resources and use them to their own advantage. In these situations, controllers

often find it beneficial to provide resources to less secure neighbours in return for labour or other services.

The structure of resource landscapes is partly a product of 'natural' ecological characteristics such as biogeographic history, climate, hydrology, etc. At the same time, what matters to foragers seeking to make a living on that landscape is the socio-ecological structure, which is a dynamic relationship between people and that landscape. In low-density populations, resources may be used in proportion to their availability, and competitions, when they occur, will be few and take the form of scrambles. Hostility comes with costs and in many cases, moving to another area is less expensive than engaging in persistent conflict. By contrast, densely packed populations are more likely to find worthwhile the costs of defending their claims or rights to resources. The alternative is to move somewhere that is already occupied by people with stronger claims or to occupy increasingly less secure resource areas. With increased population density, as the highest value and most defendable resources are claimed, other patches may be taken up and defended as well. This will ultimately lead different groups in the region to have unequal resource security. Over time, those controlling the most stable resources tend to fare better than others, and if they have particularly productive patches as well, they will more often be in the best positions to assist the less fortunate. Population infilling thus can turn a previously *Ideal Free* landscape into an *Ideal Despotic* one, simply by increasing the proportion of patches that are claimed, and therein increasing the cost of moving out of a competitive environment. A related characteristic is that higher population densities provide larger numbers of people to assist in resource defence, making previously less defendable patches more defendable – though only if the larger group of defenders can be compelled to collective action.

But population density is not the only variable that can change the perceived structure of a landscape in more (or less) despotic directions. Changes in resource distribution, predictability and productivity due to climate change or over-use, for example, could shift a landscape one way or the other between the IFD and IDD poles. Technological changes will also alter the key variables, for example by changing the relative costs and benefits of food alternatives, increasing defensive capabilities or improving the effectiveness of attacks and raids. Where technologies make it easier to procure less concentrated/ less defendable resources (e.g., snow machines for moose hunting; Winterhalder 1981), the landscape may become less 'despotic'. By contrast, intensification of localized resource technologies (e.g., fishing weirs, nets, buffalo drive lines, etc.) may increase the imperative of defending those facilities or risk losing the investment of labour they required, making the landscape more 'despotic'. Social factors, also, such as the ability of certain people to cooperate on labour-intensive tasks, is also an important, if idiosyncratic, variable in how people 'map' themselves onto the resource landscape.

From behavioural ecological concepts of patchiness, productivity, predictability, group formation, territoriality and competition, we expect that inequality will be more likely when population densities increase and resource landscapes become more patchy and defendable. These ideas have recently been formalized and supported by socio-ecological modellers (Puleston et al. 2014; Puleston & Tuljapurkar 2008; Winterhalder et al. 2015). Prentiss, in particular, has applied this approach with great success to the interpretation of emergent inequality among communities in the British Columbia interior (Prentiss et al. 2014, 2018).

## The evolution of inequality in the Kodiak Archipelago

Along the Northwest Coast and Gulf of Alaska, proxies for the transition to inequality include evidence for *competitive feasting*, an expanding market in non-utilitarian *prestige trade*, appearance of *corporate residential units*, and increases in high-risk behaviours, such as whale hunting and warfare – activities tied as much or more to status competition as actual resource provisioning or territorial claims. These characteristics all developed more-or-less in tandem roughly between 950 to 450 years ago on Kodiak, and somewhat earlier in the central Northwest Coast (Ames & Maschner 1999). Interestingly, semi-sedentary residence (indicated by aggregated sod-house villages and use of non-portable site furniture) preceded evidence of incipient inequality (prestige markings, defensive sites, differential mortuary treatment) on Kodiak by more than 2000 years. Technological changes that enabled mass production, storage and potential accumulation of surplus produce – technologies that could have made some resources more defendable and potentially triggered more despotic social interactions – developed even earlier, thousands of years *before* they were put to use for surplus accumulation and wealth competition (Fitzhugh 2003). These facts call into question some models of inequality emphasizing storage as a primary cause of wealth accumulation and status competition (cf. Testart 1982). At minimum, surplus production and storage are supporting but *insufficient* conditions for the development of competitive inequality. In the Kodiak and larger Northwest Coast case additional factors were involved, factors that fell into place between 2500 and 500 years ago.

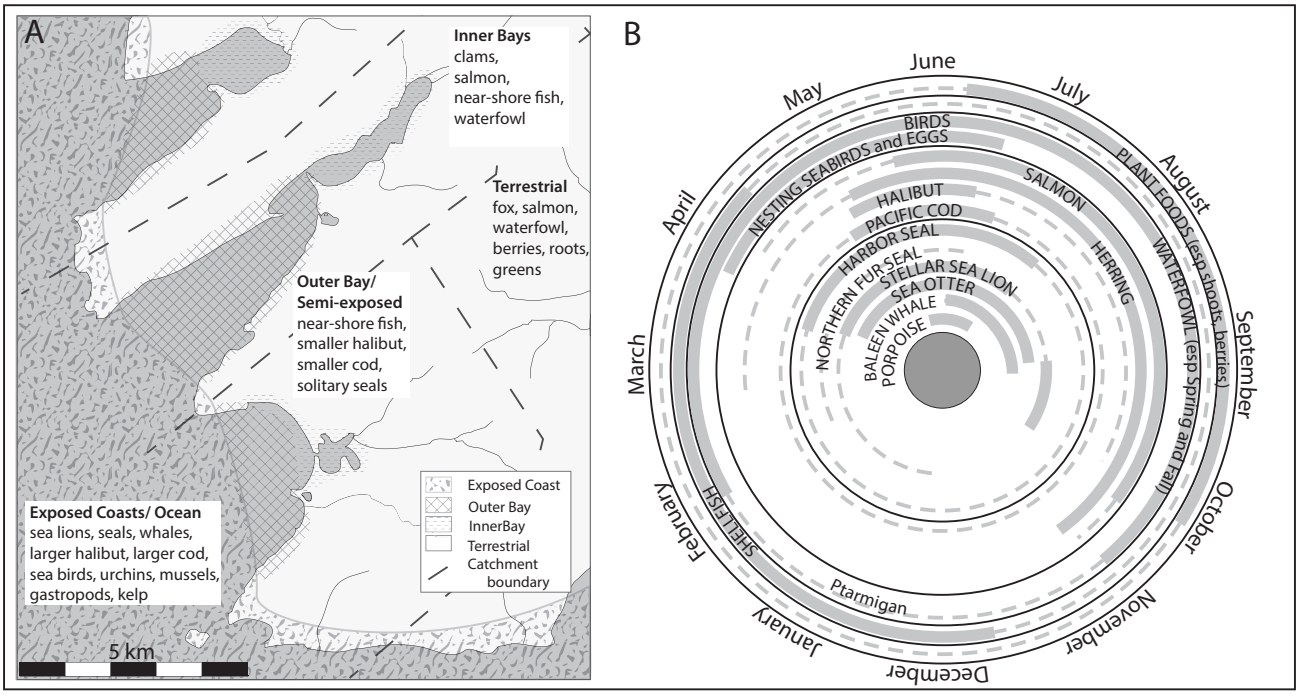


**Figure 14.2.** *A. Map of part of the Kodiak Archipelago depicting redundant ecological zones. In late Holocene times, with high population packing, each bay hosted its own village each with roughly equivalent access to diverse resource patches. B. Diagram showing seasonal patterns in resource availability and harvesting activities of late Holocene Sugpiaq families (after Fitzhugh 2003, figure 2.10, and Steffian et al. 2015, figure 5.9).*

Like much of the Northwest Coast, Kodiak is seasonally productive, with high habitat and species diversity and patchiness within localized regions, but with redundant habitats and resources diversity when viewed at broader spatial scales (Fig. 14.2). Within heterogeneous local regions, some resources are more prone to failure than others for various reasons (e.g., volcanic eruptions, tectonic events, tsunamis, cooling or warming, storms, ecological regime shifts, human predation or habitat alteration). These impacts can change the availability and reliability of subsistence resources at varying scales. Around the Northwest Coast, numerous strategies were developed to manage environmental unpredictability. These included residential flexibility and logistical mobility, subsistence diversification, technological specialization, and, at least in some areas, substantial habitat engineering (e.g., clam and wapato gardens, herring nurseries, anthropogenic burning; Augustine & Dearden 2014; Hoffman et al. 2016; Lepofsky & Caldwell 2013; Turner & Berkes 2006).

According to the socio-ecological model presented above, Kodiak should not support marked social differentiation as long as people had numerous subsistence options and could move away to other productive regions in times of local hardship or to escape quarrels with neighbours or selfish individuals who could not be managed with other levelling strategies. For this reason and because no resource on Kodiak was so localized that anyone could benefit from its exclusive control, the conditions for inequality were absent as long as population density was relatively low. Based on available, quantitative proxies (Brown 2015; Fitzhugh 2003), population density appears to have been relatively low before 2500 BP (Fig. 14.3C). At that point, we start to see changes in social life that include increased attention to social affiliation, competition for status in life and death, and, eventually, defensive infrastructure, labour intensive habitat engineering, private ownership of resource patches and dense communities organized into households of extended families, ranked by relative size and productive labour-power (Fitzhugh 2003). The archaeological signatures of these changes are discussed below.

*Kodiak's Archaeological History*

Kodiak was settled by at least 7500 cal. BP by people of the Ocean Bay tradition (Clark and Workman 1979; Fitzhugh 2004). Compared to later occupations, the initial Ocean Bay I phase is characterized by relatively

portable tools and structures, and settlement patterns appropriate to flexible logistical forays. While some sites are made up of deep deposits indicating reuse over thousands of years, most Ocean Bay sites are small and thin with only one or a few small, round structures occupied for relatively short periods (Fitzhugh 2002, 2003, 2004; Saltonstall 2014). Beginning about 6000 years ago, in the Ocean Bay II phase, more specialized hunting and fishing technologies came into use, including ground slate points and flensing knives, the first tentative use of nets and of smoke processing features followed sometime after 5000 cal. BP.

In the Early Kachemak phase beginning 4000 years ago, fishing intensified with more abundant use of nets and the adoption of ground slate lances and ulu knives to facilitate repetitive fish processing. Early Kachemak sites (4000–2700 cal. BP) are often composed of dense, greasy black, charcoal-stained sediment from large-scale smoke-processing activities (Steffian et al. 2006, 2016). These characteristics suggest a shift to the production of stored fish and other resources for over-wintering communities. Settlements of the time include durable fishing camps and aggregated winter settlements composed of several semi-subterranean houses, indicating the aggregation of larger numbers of families than were common previously. While new discoveries suggest that some Ocean Bay structures were relatively durable, Early Kachemak houses were more heavily built, excavated deeper into the ground, having more substantial sod walls and roofs. This is expected of residences constructed for more continuous use. More intensive processing and food storage would have made it possible for the first time for communities to form around aggregated 'winter settlements' (Fitzhugh 2002). Dramatic 'Neoglacial' cooling after 5000 cal. BP may have triggered these changes as winter mobility became more hazardous. Interestingly, our population proxy model (Fig. 14.3) does not show population expansion in the Early Kachemak interval despite the intensification of food harvesting, accumulation of seasonal food storage, more permanent settlements, and formation of aggregated communities (Fitzhugh 2003: 210–17; but see Steffian et al. 2016: 307).

In the Late and Terminal Kachemak phases, 2700 to 950 and 950 to 650 cal. BP, respectively (Steffian et al. 2016), we start to see evidence of rapid population growth (Fig. 14.3C), along with expansion of winter villages and more intensive use of salmon harvesting sites. A range of changes suggest accentuation of ethnicity marking (regionally unique labret styles), prestige trade, ancestor veneration and ritual treatment of the dead, and perhaps the beginnings of war-slavery (some burials interred without hands, feet or heads; Simon & Steffian 1994; Steffian & Saltonstall 2001; Steffian et al. 2016). In the Terminal Kachemak, residents started placing houses in defensive positions on small islets and promontories, close enough together to suggest competition between neighbouring communities (Fitzhugh 2003: 186). The hunting of large whales also became important in this phase (Kopperl 2003; Steffian et al. 2016: 309), a high risk activity inherently involving status competition. The method was dangerous and difficult – hunting from kayaks at close range with poison-tipped spears – and we know from ethnohistoric sources, that later whalers were respected and feared for their access to powerful and dark magic (Crowell 1994).

A second phase of social differentiation occurred in the Koniag Period, beginning approximately 650 years ago. Population continued to grow, winter villages expanded, until at contact, some may have included more than 1000 individuals (Clark 1987). At the same time, seasonal fishing and hunting settlements were established throughout the coastal zone, including the exposed outer coast and at the mouth of almost every stream and along the banks of every larger river in the archipelago (Steffian et al. 2015: 49–50). Domestic organization changed as well. In the Early Koniag, after 650 cal. BP, many small dwellings came to be arranged around central courtyards. Then, in the later Koniag phases, courtyards were roofed over, uniting the encircling small structures to form large, multi-family domestic spaces (Steffian et al. 2016: 309). The resulting multi-roomed houses often included separate rooms for related families, a steam-bathing chamber and internally accessed storage rooms, pits, and large storage boxes. The large central room provided a covered space for food processing, craft production and feasting with neighbours or allies as described in contact era documents (e.g, Davydov 1976; Holmberg 1985; Lisianski 1814).

In an analysis of changes in Kachemak and Koniag houses from sites in southeast Kodiak, I found a significant increase in the mean and variance in house sizes through time (Fig. 14.3A). Kachemak houses were universally small, averaging 18–20 sq. m, with a fairly normal distribution. This is expected where people live in nuclear family groups with relatively similar family sizes. No apparent clustering of houses was observed that could suggest corporate organizations larger than the nuclear family. By contrast, Koniag period house varied significantly in size (measured in both numbers of side rooms and sizes of central rooms) with a highly skewed distribution showing many smaller houses and few larger ones (Fig. 14.3A). If residential organization reflects social power – as one might expect when the number of people in one's corporate kin-group plays a strong role in determining

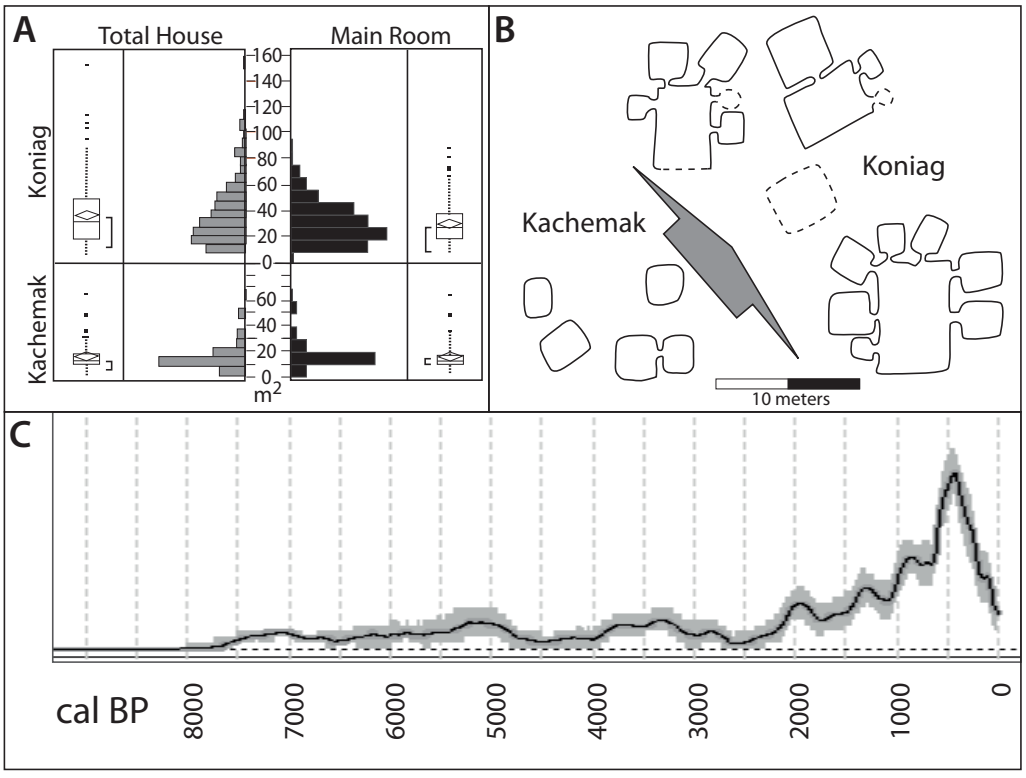


**Figure 14.3.** *A. Archaeological house area comparisons from Kachemak and Koniag period, measured from surface exposures around the Sitkalidak region of Kodiak (redrawn from Fitzhugh 2003, figure 9.3). B. Plan maps showing representative Late Kachemak and Developed Koniag pit dwellings from Sitkalidak Island, Kodiak (redrawn from Fitzhugh 2003, figure 9.1). C. Kodiak proxy human population model from the Kodiak Archipelago based on the* summed probability distribution (spd) *of archaeological radiocarbon dates. The curve was constructed by William Brown from an effective probability sample size (n) of 200 to 209.6 radiocarbon dates, cleaned and processed to avoid duplicate counting of redundant samples (Brown 2015). The curve is not adjusted to account for taphonomic attrition (Surovell et al. 2009) under the assumption that such global corrections are of uncertain applicability at regional scales, given spatial and temporal asynchronicity in taphonomic biasing factors. This, and similar, curves (e.g., Figure 14.6B), should be viewed with the assumption that dates are under-represented farther back in time. Deviations from the overall accelerating trend represent the patterns of interest.*

the labour power available for accumulating surplus, hosting feasts, defending resources, and launching raids on enemies – then the Kachemak to Koniag transition appears to represent a significant change in the organization of power. The skewed distribution of Koniag house sizes can be interpreted as a change from unranked (or inconsistently ranked) communities to ranked ones, bringing residential organization in line with contact era observations.

Other changes in the Koniag period include the adoption of thick, gravel-tempered pottery from neighbours on the Alaska Peninsula (Clark 1966), probably for rendering oil (Admiraal et al. 2020; Knecht 1995: 375); a short-lived, incised pebble tradition quite similar to sacred stone engravings in the Puget Sound and British Columbia coastal traditions (Clark 1964; Donta 1992), and large scale settlement of Kodiak's larger salmon rivers. At the Kal'unek (a.k.a. Karluk One) site, extensive excavations through the 1980s and in 1995 revealed elaborate ceremonialism, games, and gambling artifacts (Steffian et al. 2015), which may or may not have been new in the Koniag phase (no pre-Koniag site has been discovered with equivalent organic preservation). All of these characteristics can be understood as social mechanisms to help integrate an increasingly competitive social world. The scale of warfare increased at this time with the establishment of larger defensive sites oriented, not to defend from neighbours, but for coordinated, multi-village defence from more distant enemies (Fitzhugh 2003: 196; Knecht et al. 2002). Such was the prowess of Kodiak military that Russian fur traders armed with

firearms and ships took 20 years to break into Kodiak and subjugate the warriors and chiefs – and only then through brutal and inhumane tactics (Black 1992). Through the Koniag Period, the data suggest that neighbours held animosities in check and competed primarily through less violent means such as feast competition and displays of wealth and generosity. Gambling was a major winter activity, which could have served both as a marker of 'honest signalling' of wealth (Bliege Bird & Smith 2005) and at the same time a minor form of wealth-levelling between those who could afford to play. Gambling as a social activity in the ranked communities of the northeast Pacific is a fascinating topic in its potential socio-political role, worthy of deeper investigation.

Disagreement persists about the degree to which the Kachemak to Koniag transition on Kodiak was one of internal social change versus one of immigration and influence of Thule-based culture from the north (Clark 1992; Dumond 2009; Jordan & Knecht 1988; Maschner et al. 2009; Mason & Friesen 2017: 110–11; Steffian et al. 2016). These differences are important to the proximate mechanisms that may have driven the development of social inequality in the archipelago. Everyone agrees that some of the material changes noted in the Koniag period have precedents to the north. Pottery, barbed ground-slate end-blades, and sweat-baths are examples, while cold-trap house entrance tunnels, splitting mauls, ridged-slate lance points also could be imported (Dumond 2009: 64–6). From these data and central Yup'ik and Sugpiaq linguistic similarities, Dumond (2009) argues for a substantial incursion or at least influence of northern (Thule-culture) people onto the Alaska Peninsula and into the Kodiak archipelago in the eleventh and twelfth centuries AD. Maschner (2009: 38–41) extends the claim, based on an analysis of radiocarbon dated sites with Kachemak or Koniag attributes, suggesting that Thule/Yup'ik people moved to western Kodiak and then gradually assimilated or took over the rest of the archipelago. Kodiak archaeologists read the record differently, emphasizing that northern elements appear at different times and always in association with Late Kachemak artifacts (Steffian et al. 2016: 311). Steffian and colleagues (2016: 311) note that the cultural attribution of dates through the transition is itself fraught with semantic inconsistencies, largely derived from the use of normative either/or attributions (what Dunnell [1986] called essentialist thinking). Along with the blending of local (Late Kachemak) characteristics and imported ones, house forms appear to have evolved locally with multi-roomed houses appearing first on Kodiak before spreading to the Alaska Peninsula. I believe that the most parsimonious explanation on present evidence is that the Late Kachemak social sphere widened in the early second millennium and that interactions, intermarriage, and cultural exchanges were part of the process of expanding social competition, alliance formation and warfare that characterizes the terminal Kachemak and Koniag periods (Fitzhugh 2003; Fitzhugh & Kennett 2010). However, the migration of 'Thule' people from the Alaska Peninsula, even if it significantly disrupted the cultural continuity of Kodiak occupation, would complicate but not undermine the explanation of inequality presented here. More people, more competition for resources on an environmental of fine-grained patchiness, and the opportunity for some people to gain social advantages by controlling the highest value resources patches would result in either scenario.

We can reflect on some key aspects of Kodiak inequality at the time of European contact and its precedents, the outlines of which are shared, with variations, throughout the Northwest Coast, Alaska Peninsula and eastern Aleutian Islands. First, inequality was limited to the right to control productive resource patches and the labour of subordinate kin and slaves. This inequality became apparent only in the last few hundred years before contact (the Developed Koniag from 450 cal. BP), though it appears to have grown from changes that started two thousand or more years earlier, and may have been accentuated by immigration. The establishment of intensive, delayed-return economic strategies in the Early Kachemak did not directly lead to, but made possible, later population growth (Fig. 14.3C) and incipient status competition in the Late Kachemak, marked by internalized storage, changes in mortuary treatments, intensified ceremonialism, and local defensive fortifications (Fitzhugh 2003). The institutionalization of inequality followed and grew through the Koniag period as seen in the diversity in residential architecture, expanded trade in prestige commodities, militarism and defensive sites, inevitably tied to changing ideologies about the legitimacy of differentiated power and privilege. Second, there is no evidence of coercive power beyond the enslavement of war captives, and, as a result, power would have been limited to the ability of a chief to convince followers to support defensive tasks, participate in slave raids, and work for the production of surpluses. Such demands became imperative only after competition, defence and warfare became endemic in and following the terminal or Transitional Kachemak phase. Third, chiefly status was as much about fulfilling obligations to represent the household in status competitions as it was about the rights to disproportionate personal benefits. This status appears or becomes prominent only in the Developed Koniag with the emergence of

unequal sized main rooms for potlatch-style feasts and gambling and the day-to-day activities of enlarged families and slave-labourers.

While behavioural ecologists use terms like despotism in theoretical discussions, it is likely that chiefs were, at most, petty despots, always vulnerable to usurpation by junior members of their lineage or clan. I expect that chiefs could be undercut in various ways: by rebellion from kin, by the defection of supporters to competing chiefs, loss to rivals in battle and raids, and perhaps the collective decisions of leadership councils as was the case among the Tlingit. While some elements of chiefly status would have been inherited, much was achieved, and each chief had to establish their reputation through their decisions, leadership, and proper display of knowledge and skill. In short, chiefs worked hard, and worked for their extended families and villages.

If asymmetrical political power was built on factional politics in the context of high population densities and controllable resource patches, why did chiefs and elite families *not* build multi-village polities typical of many agricultural chiefdoms? I argue that the reason lies in the relative scale of ecological heterogeneity. While productive resources were patchy and controllable at local scales, such was not the case at larger regional scales. Salmon streams, sea lion rookeries, clam beds and fishing holes can be claimed and defended by threat or deed, but if these kinds of patches are repeated from bay to bay and region to region (Fig. 14.2A), no single community could establish a significant monopoly over communities located in other bays or regions. Thus, the relative 'grain' of the ecological patchiness serves as a check on political centralization. Exceptions can be seen in some Northwest Coast cases, where access to particularly lucrative resources could be monopolized over larger areas. When the Russian American Company chose to trade with particular chiefs (*toions*) to the exclusion of others, access to imported goods and colonial influence served as just such a disproportionately powerful resource (Crowell 1997, 28).

Thus the Kodiak case illustrates a dynamic of emergent social inequality in the last millennia, with concentration of power held in check at a particular scale by the socio-ecological redundancy of 'resourcescapes' and intra-/inter-community interactions (Fig. 14.4). Social competition for status among and between kin groups in villages included the ability to accumulate and display non-local prestige goods, acquired through networks of trade (Fitzhugh & Kennett 2010; Knecht 1995: 570). Feasting and trading with neighbouring


**Figure 14.4.** *Plan view of surface features on a representative 'Developed Koniag' village site (KOD 110) from the Sitkalidak region of southeast Kodiak (A) and map of approximate 'Developed Koniag' village territories around the Sitkalidak region situated to take advantage of redundant ecological zones (B). Dashed lines represent approximate catchment and presumed territorial boundaries.*

elites created alliances that helped to maintain peace and reciprocal support in conflicts with outsiders, providing a deterrent against destabilizing internal conflicts. Warfare, or the threat of warfare, served as a check on potential expansionism. Free subordinates could assess their best options of staying with a patron or moving to a rival group based on the relative security each might offer. Marriage may have served as a primary strategy for redistributing kin into better-off communities without suffering the stigma and disadvantages of refugee status.

It seems likely that Kodiak and the larger Northwest Coast cultural pattern emerged through a kind of 'peer polity' relationship (Renfrew 1996) in which population growth under broadly supportive ecological conditions, and perhaps with arrival of people from outside, triggered increasingly asymmetrical food in/security at local scales. Commoners would have sought the best situation for themselves and would have fled to less despotic communities, ironically increasing the demographic conditions for similar inequalities to arise in their adoptive homes. The autonomy of local communities with internal rank or hierarchy was maintained through competition and alliance at larger scales, gradually increasing the benefits of supporting the political patronage of local elites. Importantly, nothing about this system is predicted by the overall *productivity* or average abundance of subsistence resources. The essential variables are the *differential* security of members of the community and the ability of the more secure to support the less secure in return for other kinds of service (esp., labour). In this case, the scale of inequality is set by the scale at which different families or larger factions experience unequal security over extended periods (see Prentiss et al. 2007, 2012, 2014). Importantly, while a critical determinant of the experience of asymmetrical resource security *relative to* existing economic and ecological contexts, population density is not a fixed variable with respect to inequality. Examples exist, in the hinterlands of the Northwest Coast, of low-density communities with marked social inequality, where some individuals controlled access to valued resources in a way completely consistent with the socio-ecological model proposed here (see Legros 1985)

This model works as well where economic security comes in the form of differential access to food, essential raw materials, trade routes, or vital information flows. The scale of political dynamics is set by the unique socio-ecological and geographic configuration. Larger political aggregations are possible only when the structural dynamics of advantage and disadvantage are such that larger groups and regions can be brought into patron-client relationships, integrated by networks of interdependence. These conditions are more common in agricultural settings when food security can be dissociated from particular landscapes and mobilized through storage, tribute, capture and accumulation. But there are also contexts in which the socio-ecological circumstances dictate local or supra-local equality but regional and macro-regional asymmetry. Applying the patron-client model to those situations helps us understand a kind of socio-political and economic asymmetry that has become more common in our contemporary, globally networked society. To examine the implications of this alternative structure, we turn to consider the late prehistoric and protohistoric Kuril Archipelago.

**Case 2: Macro-regional asymmetries: The Kuril Islands**

In the case of the Northwest Pacific Kuril Islands, the scales of ecological variability imposed different structural constraints on vulnerability and security, demography and inter-dependence. Late Holocene residents of the Kuril Islands lived in a similar, subarctic, maritime environment as those on Kodiak. They hunted, fished and gathered many of the same foods with considerable skill, using modest watercraft. Like Kodiak residents, they lived in semi-subterranean houses, sometimes organized into small villages, and lived more-or-less permanently in central-places, travelling to procure food and other resources.

With Russian, Japanese, and American colleagues and students, I have spent several seasons surveying, mapping and testing archaeological sites throughout these islands (Fitzhugh et al. 2002, 2016). It bears noting that the archaeology of this region is much less well understood than that of Kodiak. Ethnohistoric documentation suggests relatively egalitarian communities of the Kuril Ainu in the eighteenth and nineteenth centuries (Krasheninnikov 1972: 58–66), but the time-depth of that lifestyle is murky, and discontinuities of occupation history belie any effort to track the long-term, evolutionary history of social organization as I have done for Kodiak. Even so, the archaeological data available offer enough evidence to rule out Koniag-like house size variations, and efforts to estimate contemporaneous settlement sizes (Fitzhugh 2019) suggest few if any Kuril sites were occupied by populations to rival the large, contact-era Kodiak Alutiiq villages of the late eighteenth century.

*Kuril Settlement History*

The Kurils were first settled in their entirety only about 4000 years ago, with most settlers coming from the Japanese island of Hokkaido bringing cultural characteristics of the Jōmon tradition. This group built

up a substantial archaeological presence throughout the archipelago that reached a peak 2000 years ago, in what is known as the Epi-Jōmon phase. By this time, obsidian was traded into the Kurils from both Hokkaido and Kamchatka perhaps in return for sea mammal oil (Gjesfjeld 2019; Phillips 2011). Presumably other resources and marriage partnerships also passed along these trade routes. Even so, the evidence we have from pottery sources and settlement durability suggests that Epi-Jōmon groups lived year-round in the confines of neighbouring island clusters, maintaining broader connections through exchange networks. We have suggested that the obsidian exchange was a reflection of a trade maintained specifically to ensure remote islanders were not socially isolated and cut off in times of local ecological failure (Fitzhugh et al. 2011; Gjesfjeld 2018). For as yet unknown reasons, Epi-Jōmon populations declined from 2000 cal. BP until about 1300 cal. BP when remaining families were forced out or assimilated by a rapid expansion of the unrelated Okhotsk culture.

Okhotsk expansion brought more intensive sea mammal hunting technologies to the Kurils, and the migration may have been motivated to capture marine products for a growing commodities trade fuelled by markets in Manchuria and Japan (Fitzhugh et al. 2016). After expanding rapidly for about 300 years, the Okhotsk then declined precipitously between from 1000–750 cal. BP. Kuril Ainu, themselves descended from Jōmon/Epi-Jōmon probably with some intermixture of Okhotsk, recolonized the islands only after a break of some hundred or more years. The Kuril Ainu were ultimately forced to near extinction, demographically and culturally, during the colonial period, when they became pawns in the growing competition between Russia and Japan (Hudson 1999; Walker 2001).

Based on available archaeological evidence, throughout much of this history, Kuril settlers maintained relatively autonomous economies and domestic units of approximately equal power and status. Evidence to support this claim is mostly negative – the absence of unequal and ranked house size distributions, few if any defensive sites (until the Ainu period), and a paucity of possible prestige items in archaeological assemblages. Epi-Jōmon settlements may have included the largest number of contemporaneous dwellings, while Okhotsk had some of the largest houses (Fitzhugh 2019). Even so, Okhtosk people appear to have moved more frequently (Gjesfjeld 2018), undermining local resource defence. The same lack of intra-community inequality likely characterized those in the adjacent regions of Eastern Hokkaido and Kamchatka. Nevertheless, ecological differences between the remote Kurils and neighbouring territories may help to explain the ultimate instability of Kuril occupations.

*Kuril Ecological Structure*

If Gulf of Alaska and Northwest Coast ecosystems are comprised of densely packed resource patches of high and variable productivity at a scale conducive to competitive exclusion and patron-clientage, the Kurils are notable for lower overall resource productivity and undefendable patches. Some patches are highly productive (e.g., large sea lion rookeries and sea bird colonies) but are found in highly exposed and sparsely distributed locations. We also don't see any archaeological evidence of intensified harvesting or processing to suggest that subsistence resources were ever converted into substantial stores for the off-season, though it is possible that the Okhotsk produced marine mammal oil for trade (Gjesfjeld 2019). Bird colonies, by contrast, are common and could have been defended, but they are sensitive to harvesting pressure and not worth harvesting most times of the year (nesting season being the exception). Other foods would have been more evenly distributed through the islands, including harbour seals, Atka mackerel, greenling, and sculpin, and these are among the more common foods found in zooarchaeological assemblages (Fitzhugh et al. 2004; Gjesfjeld et al. 2020). In other words, there would be little on which to leverage patron-client relations because the most important resources for food security in most parts of the chain were also the least controllable (Fig. 14.5).

Faunal remains from Kuril assemblages suggest that many communities had access to only a small range of locally available resources, and those resources differed from site to site. Indeed, some of these resources changed from the ends to the centre of the island chain. Clams, salmon, and codfish, for example, could be found only in the northern and southern islands closest to Kamchatka and Hokkaido. Dolphins were ubiquitous at one site in Urup, birds were more dominant at the Rasshua 1 site in the Central Kurils (Gjesfjeld et al. 2020). While some prey may have been abundant most of the time (e.g., sea lions at rookeries), none would have been immune to crisis, and communities would have had to move every few years or decades if not seasonally, and they must have relied, occasionally, on the assistance of neighbours or distant friends.

Within the Central Kurils, these relationships would have been balanced, as any helpers might later find themselves needing assistance from those they had previously supported (Fitzhugh et al. 2011). Thus while the same marine resources are found in the Kurils as on Kodiak, the greater distances between productive patches, the lower predictability of those

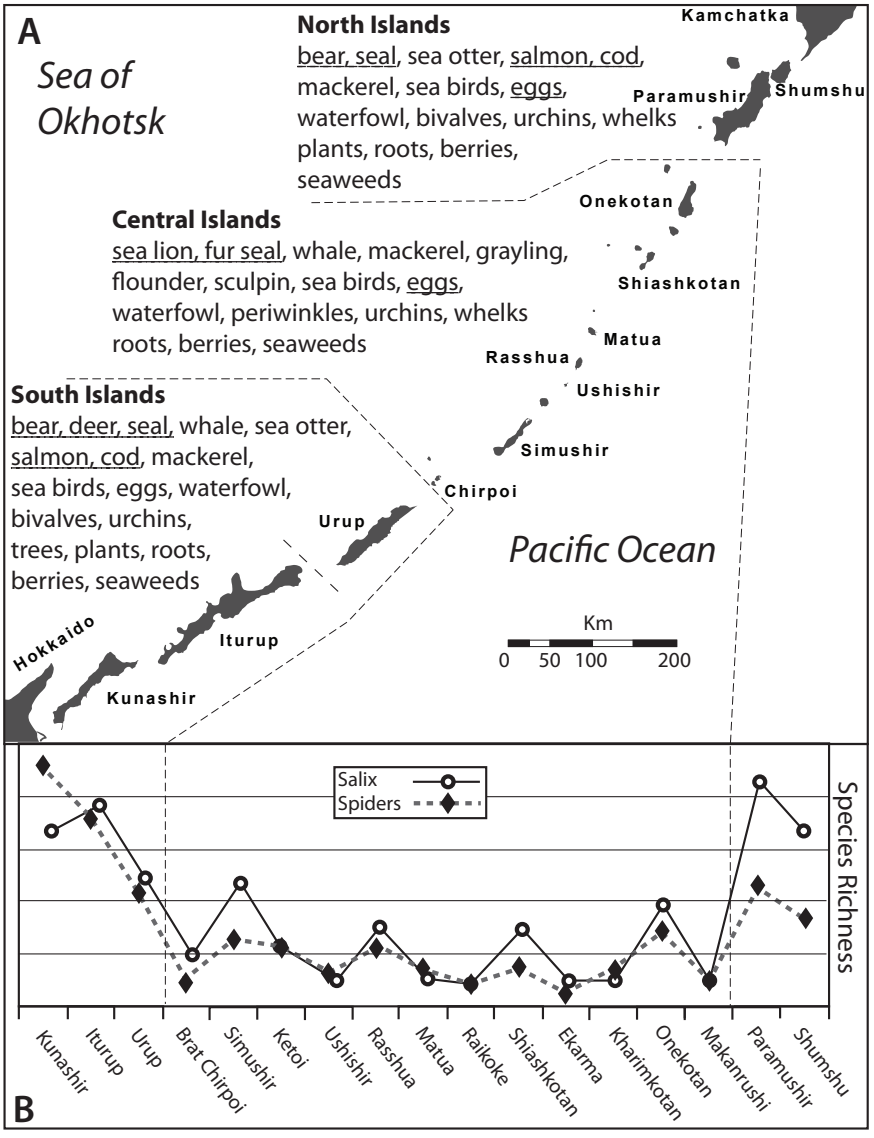


**Figure 14.5.** *A. Map of the Kuril Archipelago, depicting different ecological characteristics of the North, Central, and Southern Island groups. Underlined taxa are abundant and were economically significant (high ranked). Only taxa used in traditional diets are listed. The central islands, have the least productive, stable, or diverse sets of resources (other than birds), but have had large populations of Stellar sea lion, northern fur seal, and birds.*

patches, and the lack of ecological redundancy from region to region would have worked against any efforts to monopolize patches or attract subordinates from neighbouring families or communities.

Islands near Hokkaido and Kamchatka have anadromous fish streams, support a range of edible shellfish, host terrestrial game like deer and bear, and generally have a modestly higher diversity of habitat types than the central islands. Residents of the proximate islands would have had greater opportunity to travel between the islands and adjacent 'mainland' regions for trade or refuge when things got difficult on the islands. More resource options supported more secure economies and residential stability; but even there, ecological structures should not have been sufficiently unequal to support robust patron-client relations.

If the internal political dynamics in communities across these regions was largely egalitarian, the differences between the central and proximal island regions could have created socio-economic imbalances that may have influenced the serial collapses of Epi-Jōmon and Okhotsk populations. Compared to those living closer to the ends of the chain, the central islanders were more exposed to unpredictable drops in the availability of local resources due to natural hazards, climate fluctuations, or other factors. At the same time, they would have been most confined by storminess and the dangers of boating across inter-island passes. This macro-scale asymmetry in resource security and mobility may have created imbalances in social interactions and dependencies between the more remote islanders and those closer to, or on, the adjacent 'mainland' regions of Hokkaido and Kamchatka.

The archaeology of the Kurils, as we know it, supports the idea that islanders lived in relative insecurity, facing occasionally severe hardships. The long intervals of persistent settlement – through intervals of large and high frequency volcanic eruptions, periodic large earthquakes and tsunamis – suggests that most such hardships were overcome without measurable impact (Fitzhugh 2012). On the other hand, significant depopulation did occur at the end of the Epi-Jōmon and Okhotsk periods, respectively (Fig. 14.6). Both declines occurred during cooler than average periods when storminess and expanded sea ice may have increased subsistence volatility, reduced the ease of boat-based movement, and undermined the ability to call on distant trade partners for help in times of crisis.

If I am right that Kuril settlers were always dependent on access to non-local social networks to mitigate ecological risks at local scales, a proximate mechanism for population decline could have been the emergence of asymmetries in risks and in dependence on each other's trade relationships. With changing climate, those living in areas with greater ecological diversity and economic flexibility would have been less vulnerable to subsistence failure compared to those living in ecosystems with low ecological diversity. In theory, this asymmetry could have created opportunities for potential aggrandizers living in the more 'secure' areas on or close to eastern Hokkaido and southern Kamchatka. These individuals might have sought to establish unequal patron-client relations with more remote islanders, if only the islanders had something of value to offer in exchange.

In the case of the Epi-Jōmon decline, there may have been little of value that remote islanders could bring to their less dependent neighbours, other than more distant items passed on from beyond the chain. It is telling that obsidian traded into the Kuril Epi-Jōmon sites from both directions tails off before reaching the opposite ends of the chain, indicating limited 'flow through' of goods and raw materials (Phillips 2011). On current evidence, it would appear that there was little on which to leverage durable patron-client relations in late Epi-Jōmon times. In the absence of a lucrative trading marketplace, remote Kuril islanders would have been the most vulnerable to ecological crises that affected them more severely than their neighbours. I hypothesize that Kuril Epi-Jōmon populations simply

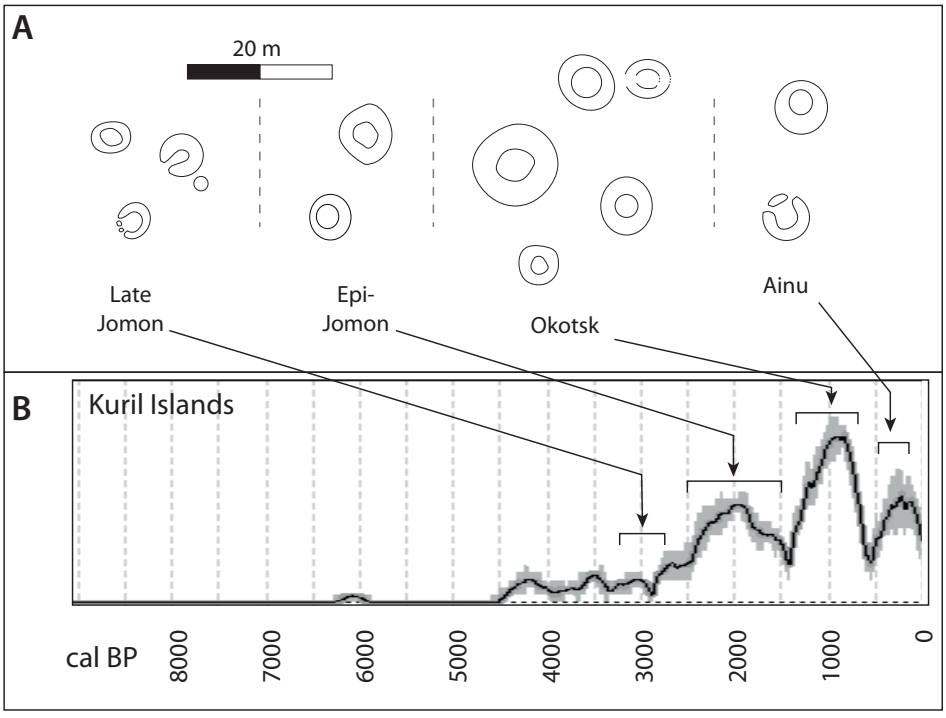


**Figure 14.6.** *A. House size variation from Late Jōmon, Epi-Jōmon, Okhotsk and Ainu structures (based on data from the Drobnyye 2 site on Shiashkotan Island). Structures are attributed to archaeological phases by radiocarbon dates on associated hearth/floor deposits sampled from soil probes. Structures were mapped at ground surface. B. Kuril Archipelago proxy population curve (Radiocarbon model). See Caption for Figure 14.3C for discussion of assumptions and derivation. Curve courtesy of W. Brown.*

declined gradually as climate deteriorated and islanders experienced more periods of nutritional stress, reduced fertility, increased mortality and perhaps episodic emigration back into Hokkaido.

Then, after about three hundred years of rapid colonization during a warming and drying climate, the Okhotsk in the Kurils disappeared abruptly. This occurred between AD 1100 and 1250 in the early phases of another cooling trend in the Kurils (Razzhigaeva et al. 2013, 2014). This was a time when neighbouring communities in eastern Hokkaido and the southernmost Kurils went through a range of changes that suggest economic hardships, declining populations, and a shifting orientation away from marine pursuits (Ōnishi 2003). In this context, they may have been unable to help partners from an even less secure region. Beginning in the eighth century AD, disinterest towards their island cousins may have been amplified by the simultaneous increase in access to trade for more interesting Japanese goods through contacts with Satsumon neighbours to the south. One reason for the seemingly catastrophic collapse of Kuril Okhotsk populations may have been neglect on the part of Hokkaido Okhotsk as they re-oriented towards Hokkaido social networks. The Kuril Okhotsk seem to have done somewhat better in connections to Kamchatka, where they continued to receive obsidian in trade until their disappearance about 700 cal. BP.

The Kurils were re-settled again, by the Ainu, no later than the sixteenth century AD and maintained trade routes between Hokkaido and Kamchatka. These Ainu settled briefly in Kamchatka, intermarried with indigenous Itel'men (Krasheninnikov 1972; Takase & Lebedintsev 2016), and established settlements or villages on several of the larger Kurils Islands. Even so, they never settled in the higher densities of their Epi-Jōmon or Okhotsk predecessors. At this point well-immersed in the commodities trade, the Kuril Ainu fell victim to political forces and colonial technologies that soon diminished their independence and compelled them to support, alternately, Russian and Japanese economic and territorial interests. Ainu residents of Hokkaido, southern Sakhalin and the southernmost Kurils did develop signs of political inequality, military organization, and defensive fortification, if not slavery. These developments appear tied to control over commodity trade and efforts to repel Japanese encroachment. By the late nineteenth and early twentieth centuries, Ainu in the Kurils, Hokkaido and Sakhalin were dramatically marginalized by the influx of colonial settlers and racist colonial policies (Hudson 1999; Walker 2001). Disease, forced resettlement, and famine led to a final depopulation of indigenous Kuril Islanders in these decades. Despite flurries of military and other colonial settlement through the twentieth century and the continued presence of three modest Russian towns, most Kuril islands are now, once again, largely depopulated and oddly detached from the globally networked world we now inhabit.

**Conclusion**

In this paper, I presented two case studies to illustrate how differences in ecological structure can interact with demographic economic, and social factors to encourage or discourage institutional inequalities, inequalities that persist for structural reasons and are culturally normalized, socially sanctioned and embedded in multi-generational practices. Following models from human behavioural ecology, I argued that social inequalities at local scales emerge through the confluence of ecological patchiness, defensible resources and social competition. In the Kodiak case, we saw that a productive but locally patchy resource environment could, under sufficiently dense populations, lead to exclusive resource ownership, defence, unequal relations of dependence and the emergence of persistent inequalities. I also argued that the ecological redundancy of this kind of landscape at larger scales served to limit the centralization of multi-village communities into larger polities. From bay to bay, river to river, and cape to cape, neighbouring communities had access to much the same mix of resources, both controllable and not. Before 950 cal. BP, and especially prior to 2500 cal. BP, populations were too low to make resource control viable or necessary, and, as a result, mutual access and inter-dependence prevailed in an egalitarian social context.

The Kuril Island case, while less thoroughly documented archaeologically, shows how similar resources, distributed differently, could inhibit the emergence of inter-personal and community-based inequalities. The critical variables of *productivity*, *patchiness*, and *predictability* failed to line up at any time in the archaeological history of the region. Productivity has always been lower around the Kurils. This may have kept overall population densities low. Some resources appear distributed in predictable patches, but they are not easily controlled and are located far apart, in exposed and hazardous locations. Most staples, by contrast, are more evenly distributed and would have been impossible to control. As with the earlier residents on Kodiak, Kuril Islanders would have always fared better by supporting each other and maintaining extensive trade networks. Even so, macro-scale differences in resource distributions and exposure to ecological risk may have created uneven dependencies between those living in different regions. The resulting asymmetries in trade

reliance could have rendered the remote communities unsustainable in deteriorating climates and/or when more secure partners lost interest. If these conditions arose in combination with the expansion of the Japanese and mainland East Asian commodities market into eastern Hokkaido, the combination could have been catastrophic for those trying to persist in remote island settlements.

Put simply, if the model and supporting evidence presented through these case studies are correct, intra-community inequality (interpersonal rank and stratification) is more likely when resource competition is high between factions (e.g., families) within those groups and where the patchiness of defendable resources creates unequal opportunities to leverage those resources for food security and social support. The scale of unequal resource distributions makes a difference in the nature of social inequalities developed. Where asymmetrically distributed resources support inequality at local scales, redundancy can prevent centralization and inequality across larger scales. Alliances and raiding between autonomous communities can reinforce local status inequalities and inhibit the emergence of supra-local hierarchies. By contrast, where local resources are insufficiently defendable, as in the central Kurils, egalitarian relations persist. But where asymmetries in security emerge at regional or larger scales, even where local relations are largely egalitarian, those in the less secure regions can suffer significant impact as the result of the dissolution of support networks engaging more secure partners. I think it is fair to suggest that these kinds of dynamics are less stable than those of local inequality but regional security, and I would predict that culture histories should be punctuated by greater instability where inequities in security occur at regional compared to local scales.

This kind of diffused and impersonal, supra-regional asymmetry in social dependence is broadly prevalent in our modern, interconnected world, a world in which nominally democratic, ideologically egalitarian communities exploit or imperil other communities, often with indifference or, indeed, ignorance. It is the nature of complex socioeconomic networks, too complex to monitor in their totality, that whole communities can be marginalized or lost with little warning or notice. Marginal communities today are those who live with limited access to food security, medical support, legal services, or shelter. Some of these communities are found in remote locations like the Kurils and others live in the midst of thriving urban cores. What they share is a lack of access to the resources and support of people with the interest and ability to help them. Such may have been the case for the Kuril islanders, not just once but twice in the last two millennia, making the islands a good place to study these dynamics.

Of course, some people face greater neglect and insecurity than others in all complex societies, but my point is that these social ills arise as a product of the same structural conditions that, in different contexts, promote the emergence of ranking and hierarchy in 'transegalitarian' societies. There is an abundance of opulence and poverty in the twenty-first century, supported by unequal abilities to control and benefit from highly patchy, monopolizable, and alienable resources. This control is coupled with unprecedented dependence on access to critical goods available only through complex networks, themselves influenced by events both invisible and largely unpredictable to most participants in network interactions.

The comparison of late Holocene developments on Kodiak and in the Kurils provides the opportunity to think broadly about the interplay of food security, population, and social structure. It may even inspire us to find ways to reduce the inequalities and vulnerabilities in our world today just as it gives us insight into the emergence of complex social systems in the past.

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# Social inequality before farming?

Archaeological investigations over the past 50 years have challenged the importance of domestication and food production in the emergence of institutionalized social inequality. Social inequality in the prehistoric human past developed through multiple historical processes that operate on a number of different scales of variability (e.g. social, economic, demographic, and environmental). However, in the theoretical and linguistic landscape of social inequality, there is no clear definition of what social inequality is. The lifeways of hunter-gatherer-fisher societies open a crucial intellectual space and challenge to find meaningful ways of using archaeological and ethnographic data to understand what social inequality exactly is with regard to variously negotiated or enforced cultural norms or ethoses of individual autonomy. This interdisciplinary edited volume gathers together researchers working in the fields of prehistoric archaeology and cultural and evolutionary anthropology. Spanning terminal Pleistocene to Holocene archaeological and ethnographic contexts from across the globe, the nineteen chapters in this volume cover a variety of topics organized around three major themes, which structure the book: 1) social inequality and egalitarianism in extant hunter-gatherer societies; 2) social inequality in Upper Palaeolithic Europe (*c.* 45,000–11,500 years ago); 3) social inequality in prehistoric Holocene hunter-gatherer-fisher societies globally. Most chapters in this volume provide empirical content with considerations of subsistence ecology, demography, mobility, social networks, technology, children's enculturation, ritual practice, rock art, dogs, warfare, lethal weaponry, and mortuary behaviour. In addition to providing new data from multiple contexts through space and time, and exploring social diversity and evolution from novel perspectives, the collection of essays in this volume will have a considerable impact on how archaeologists define and theorize pathways both towards and away from inequality within diverse social contexts.

**Editor:**

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