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The circulation of fat

Sustainability and morality in subarctic Sakha horse and cattle economy

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1. Anthropological insight is crucial in understanding the challenges of the Anthropocene Era and climate change. Anthropological inquiry usually focuses on the detailed description of local responses to rapid and shocking environmental or climatic transformations (Crate–Nuttall 2009; Sillitoe 2021; Hoffmann–Eriksen–Mendes 2022). Therefore, it can provide us with valuable soft data, and an inner perspective of the affected communities about climate anomalies, ecological transformations, and environmental degradation by giving voice to local perspectives and strategies of harm mitigation. This article delves into three interconnected issues regarding sustainable land management and circular farming systems by thoroughly examining the Sakha cattle economy in subarctic regions and fat consumption in Yakutia, Northeastern Siberia. In this study I will argue that the substance of fat is central to understanding the land-focused Sakha cattle and horse economy and environmental perception.

2. 1. The first issue that the article aims to address is a methodological one. Namely, *the lack of anthropological ecumene*. This term refers to the isolation of local voices and gray literature from academic analysis (Pina-Cabral 2018; Ramos 2023). Today, instead of focusing on the conceptual construction of "Otherness" and a research endeavor that emphasizes alterity, there is an increasing interest in giving voices to local opinions, languages, and lifeworlds not against but in interplay with the episteme of anthropological understanding (Latour 1993: 97; Graeber 2015). Anthropological ecumene may provide a shared domain for discourse, with equal space for the collectivity of non-indigenous and indigenous anthropologists, the observed and the observers, and many others, who may find it uncomfortable to locate themselves between these two opposing categories. This ecumenical discursive space should not restrict local ideas into the ghetto of indigenous or emic knowledge or worldview as contrasted to the findings of analytical research.

3. It is admittedly difficult to bridge the gap between local and academic epistemic horizons without encountering significant epistemological and methodological difficulties. The present article intends to follow an ethnographic approach, where during fieldwork, the researcher has to enter intersubjective lifeworlds that give voice to many (and often incongruent) opinions and ideas. Therefore, the article first offers a short critique of the separation of academic and non-academic categories and then turns to the problematic dichotomy of indigenous and non-indigenous knowledge and practices in the sections that follow.

4.

2. The second problem arises from an anthropological research legacy that was inspired by ideas on primitive or oriental otherness and nature-culture dichotomies. This dichotomization (often labeled as the 'Great Divide') of non-European others and Europeans permeated the study of environmental studies and ethnoecology in anthropological scholarship (Goody 1990; Latour 1993; Dijksterhuis 2012; Descola 2013). Social sciences and humanities had been isolated from sciences, and non-human animate and inanimate beings were referred to as part of Nature. Consequently, Nature became a backdrop for studying society and culture; therefore, anthropology conceptualized local practices, skills, and knowledge according to ethnosciences (meaning *not real* sciences). In the epistemology of Western academia, the methodology of researching natural forces and human agencies was strictly separated, and therefore, a similar differentiation was artificially created for understanding how non-European peoples dwelt in specific environments and created their lifeworlds.

5.

In my article, I argue that overcoming this epistemological gap between the social and the natural, and avoiding the traps of imagining non-European others as "native scientists" and local "researchers" of ethnobiology or ethnobotany contributes to a better understanding of how humans and non-humans, animate and inanimate beings share common spaces and create places together. Therefore, instead of essentializing cultural/ontological alterity and turning to ethnographic paradigms focusing on otherness (Harvey 2012), I intend to eliminate the opposition between more civilized and more natural peoples. Ideas of natural (primitive) others have permeated representational schemes describing non-European communities in anthropology for a long time (Ellingson 2001; Brown 2012). An early underlying feature of this representation was that non-European others were in more direct contact with their natural environment than Western people (Graeber–Wengrow 2021). According to this schema, direct contact prevents non-Europeans from perceiving the environment as an abstract image: a landscape. This view has been most prominent in the anthropological discourses that have been organized around the notion of 'Naturvölker' since the late Enlightenment.

6.

3. In my paper, I will argue that this above-mentioned dichotomization results from the epistemic horizon provided by the modernist ontological division of nature and culture. Based on these two aforementioned vantage points, that is, the intention to overcome the epistemological gap created by the "Great Divide" and relying on the discursive space opened up by anthropological ecumene, I argue that basic concepts in community studies and ecological anthropology, such as resilience, circular economy, and sustainability, can be further enriched and reevaluated by local examples relying more on local epistemologies and ontologies. Presenting an indigenous-focused perspective on these issues may contribute to a better understanding of climate change, ecological transformations, and community adaptations.

7.

Indigenous perspectives on climate and ecological changes have been mostly unnoticed in major climate and ecological discourse and policy-making. Although one can detect an increasing recognition of indigenous perspective in mitigating the harms caused by industrialized countries in climate and environment (Ratima–Martin–Castleden–Delormier 2019), this perspective has played a minor role in decision-making and legislation (Nalau et al. 2018). I argue that in climate

discourse, indigenous ideas are often obscured and transformed by Western analytical concepts, and their voice is suppressed by scientific argumentation based on empirical evidence.

8. There are two traps in presenting indigenous voices in anthropological scholarship and in climate discourse that I intend to avoid in this article. First, these voices are often contrasted rather than juxtaposed to Western ideas. This argumentation can often be detrimental to local communities as their opinion may appear incommensurate and incomprehensible for decision-makers. At the same time, it isolates and essentializes indigeneity. However, local lifeworlds are not monolithic entities; they are often ontologically diverse, and polyphonic opinions are equally voiced within indigenous communities. Second, interpreting indigenous knowledge and practices is particularly difficult as they are not ordered according to Western understanding. They are highly contextual and are embedded in a fabric of various practices that may seem unrelated to an outsider at first. Therefore, indigenous land-informed knowledge does not lend itself easily to transformations and analytical use. As a result, it is important to provide all necessary contexts for understanding the varieties of (and not a single or dominant) local knowledge and finding ways to provide a fertile discursive space where it can mingle with and influence scientific research.

9. In the next part of this paper, I will explore how local moralities influence the consumption and use of fat in Yakutia and contribute to the area's economic strategies. I will argue that local cuisine, especially the use of fat, plays a crucial role in the local economy, and it is a crucial substance which is present in most embodied living entities. Fat is not only used as a means of communication between different living beings but also as an essential component of their lives, as many living beings contain and/or consume fat.

10. The article will argue the conceptualization of anthropological ideas, focusing on the problem of othering and contrasting emic and etic, as well as local and scientific ideas and concepts. The nature-culture dichotomy defies the realities of local lifeworlds in Siberia. The article provides insight into the affordances of permafrost lifeworlds and how humans and non-humans co-reside in this land. A chapter on the use and consumption of fat precedes the conclusion, which will address the problems of sustainability and community resilience in Yakutia, as well as the commensurability of ideas across socionatural contingencies.

Epistemological gaps, the Great Divide and the Naturvölker

11. The dichotomy between etic and emic concepts and the “translation” of fieldwork experiences are widespread practices that have defined the epistemological framework of anthropological research for a long time. However, regardless of the methodology used by anthropologists to approach a community or an individual, one of the most crucial prerequisites for understanding is for the researchers to partially suspend their own conceptual framework during fieldwork and be ready to enter lifeworlds that operate according to different frameworks and rules. The conceptual framework of scientific cognition is formed against a background of researchers and their institutions. Scientific and logical concepts are developed within this framework (Schutz 1954: 265). Therefore, in anthropological field-

work, the value of concepts that seem to be the fundamental building blocks of scientific cognition may hinder contact with local lifeworlds and are better questioned or bracketed (Jackson 2012).

12. The suspension of analytical concepts in anthropology provides a new perspective for conceptualization. It obliterates the separation between the community of observers (We) and that of the observed (Other) (Chua–Mathur, 2018). This approach values the importance of field experiences and allows for critically reassessing anthropological concepts. Researchers have pointed out that anthropological knowledge production and conceptualization are determined by hegemonic conditions based on the use of our domestic, Western concepts (Clifford–Marcus 1986; Biczó 2018). The reflexive turn in anthropology emerged from the framework provided by European thought but aimed to deconstruct its analytical value and set the aims and tools of anthropological research within the web of global power relations. The phenomenological approaches, followed by an ontological turn in anthropology, brought a radical step forward as these approaches offered the possibility of reconstructing analytical concepts after deconstruction (Holbraad–Pedersen 2017).

13. As a result, it is not only the local voices that emerged during the process of fieldwork which should be involved in the analytical work but also those that have emerged independently. It is important to consider all possible voices that emerge within and create an interplay between the field and the researcher. One may avoid the trap of essentializing indigeneity by showing that anthropological enterprise is *not* about contrasting local voices and the anthropological interpretation. Local voices and scholarly voices are obviously different, but they share common features. Including local academic writings and gray literature (written in Sakha in this case) in a study demonstrates that the polyphony of voices may create a mutually intelligible field of discourse. This is a field where anthropological interpretations and collaboration may be carried out. However, anthropological ecumenism relies on debunking major conceptual obstacles that hinder the interplay of ideas. One of them is the idea generally referred to as the “Great Divide”.

14. Indigenous peoples have been an integral part of nature; according to early anthropological work, they have not yet undergone the change (or development) that would separate them from the natural environment (Merchant 1980.). The scientific objectification of nature, alongside primitive societies, was based on the episteme of modernist scienticization of non-human entities (Goldman–Schurman 2000). The Enlightenment ontology referring to nature as an autonomous entity excludes the possibility (among Western societies) that it is deeply embedded in socionatural formations. As a result, the concept of landscape, as a truly European idea, based on the assumption that nature is isolated from the human sphere and therefore should be represented, did not surface in the study of non-European indigenous peoples (Tilley–Cameron-Daum 2017: 1–2).

15. A common presumption evident in anthropological studies is that primitive societies had a more direct relationship with their natural environment compared to European civilizations (Graeber–Wengrow 2021). According to this perspective, the direct relationship primitive people had with their environment prevented them from viewing nature as an abstract concept. This view has been most prominent in the (proto)anthropological discourses that have been organized around

the idea of ‘nature’ peoples, and it still significantly impacts anthropological research today. Therefore, it is essential to briefly explain how the concept of nature emerged in discourses of radical otherness.

16. For Herder, the term Naturvölker did not primarily refer to interconnectedness with the natural environment but appeared as a kind of critique, a counterpoint to civilized peoples. The notion of close relationship between nature and nature peoples deeply permeated early ethnographic thought after Herder (Kwa 2005). The term Naturvolk used to refer to non-European communities living in a natural, early state of human existence. This term also implied that their culture was determined by their natural environment, primarily by geographical factors. According to Ratzel, the members of such communities lived within the constraints of nature and were unable to remove themselves from its direct influence (Ratzel 1885: 5). This created a one-way relationship where the geographical, natural environment influenced the human community, but the human community did not influence the environment (Ratzel 1909: 41). Although Ratzel's student, Franz Boas had already criticized the idea of geographical determination and the mechanistic assumption of closeness to nature (Speth 1978), indigenous cultures as being closer to “nature” continued to permeate anthropology.

17. The need for interdependence of natural constraints and lifestyle regularities contributed to the emergence in the 1950s of ecological anthropology. Instead of assumptions of mechanistic determination and unilinear development, research has increasingly focused on adaptation and the variety of strategies by people living in different natural environments (Moore 2012). Ecological anthropology, which developed in the wake of Julian Steward's research, argued that environmental determination in a society affects the 'cultural core', with all other social and cultural phenomena taking the form of variation in individual communities. This cultural core is not only a characteristic of non-European peoples – each culture can be described by a duality of cultural core and secondary phenomena (Steward 2016). Through adaptation, human communities are not passive sufferers of the affordances and constraints of the natural environment but take possession of it through subsistence and economic arrangements.

18. However, this turn has not removed the image of non-European other as intimately connected to nature, but rather has reinforced it. Ethnobotanical research, which began in the 1950s, also supported the representation that the metaphors assumed by European epistemology in the relationship between landscape and man were not, or barely, present in the case of non-European communities. Rather, the notion of direct, goal-oriented ecological knowledge has become the basis for research on the relationship with the environment. Harold Conklin, an early proponent of ethnoecology, argued convincingly that it was only in the eyes of colonial officials that the slash-and-burn farming practiced by the Hanuoos in the Philippines was actually primitive and wasteful. Conklin pointed out that, on the contrary, the Hanuoo way of dwelling in their environment was based on thorough environmental knowledge. He argued that the Hanuoo chose their management strategies based on their knowledge of over 1,600 different plant species while growing over 430 crops in rotation (Conklin 1954). Similarly, Roy Rappaport (Rappaport 1967) demonstrated the underlying ecological rationality in his study of the management and ritual life of the Tsembagas of New Guinea.

19. Ethnoecologists have usually conducted fieldwork in areas where considerable community knowledge of plants or animals has been assumed to exist. The focus of research has, therefore, been on the horticultural, hunter-gatherer communities of South America and New Guinea. According to the ecological approach, farming, the environment, ecological knowledge, and social organization are maintained in a static equilibrium in which the non-European community is an integral contributor to the local ecosystem. Successful adaptation provides the basis for the survival of a community. One of the main conclusions of these studies in typically egalitarian communities was that, in the spaces they use, the European observer finds it difficult to distinguish between pristine natural environments and cultivated places, such as gardens shaped by human activity. There is no ontological separation between garden and wilderness (Balée 1994; Descola 1994; Dwyer 1996), and there is no strict separation between human and non-human entities – or at least this separation is articulated along different categories (Praet 2014). Therefore, the European perspective's distinction between foreground and background, or culture and nature, is hardly meaningful in these socio-natural constellations. The only meaningful separation is between the researcher, the Western gaze, and indigenous perception. As a result, the idea of the Great Divide is reproduced again, but now, the division lies between the Western and indigenous peoples. This ontological difference not only hinders mutual understanding and the creation of a joint discursive space but contributes to the hazy image of anthropologists as the lone Hermes, who can overcome boundaries and ontological systems.

20. Anthropological research has been criticized for its one-sidedness and lack of historical context (Fabian 1983; Wolf 2010). Some of the research assumes that non-European communities, the Other, view nature and landscape fundamentally differently than the European perspective. This notion has given rise to the view of the Other's landscape as a different kind of environment altogether.

21. It is imperative to consider their respective contributions to better understand the impact of these frameworks of anthropological discourses on the landscape. Instead of opposing the different approaches to landscape, they can be juxtaposed to provide a more comprehensive understanding of the Other's landscape. Such an understanding is crucial in bridging the gap between different communities and fostering mutual respect and appreciation.

The sentient permafrost landscape

22. I carried out subsequent anthropological field studies in Central Yakutia between 2002 and 2023. All village communities I visited during these years have maintained agricultural activity focusing mainly on cattle and horse breeding, haymaking, and fishing. All these activities depend greatly on the unique affordances of the permafrost landscape of Yakutia. One of the peculiarities of this landscape is the thermokarst depressions known in Sakha as alaas. Alaas meadows, located in the Central Yakutian lowlands at the confluence of the Aldan and Lena rivers, are estimated to cover 17 to 30 percent of the total surface area (Katamura et al. 2006; Telbisz–Nagy 2008). Today, there are approximately 16,000 alaases in central Yakutia (Bosikov 1991), forming an archipelago of meadows within the ocean of the woody vegetation of the boreal forest, the taiga.

23. It is important to note that the alaas meadow ecotope is not uniform. Usually, there are three types of vegetation zones observed in a basin: wetland, wet grassland, and dry grassland, forming concentric circles around the deepest part of the depression, the lake (Desyatkin 2008). The plants in each vegetation zone are differently suited for haymaking. In the wetland habitats, the most common species are sedge and cattail, with some species excellent for haymaking, such as reed canary grass (*Chyychakhsyt*; *Digraphis arundinacea*), and some less nutritious species, such as reed sweet-grass (*Ölöng*; *Glyceria maxima*) and smallweed (*Sökü*; *Calamagrostis*). Brown sedge (*Ikki eretteekh üker*; *Carex disticha*), which is considered to provide better quality fodder, and the lower quality water sedge (*Uu ükere*, *Carex aquatilis*) are also scarcely present in this vegetation zone. Most of the aforementioned plants are of little importance for fodder purposes, and are regarded by the local Sakha haymakers as "*sümehine agyjakh/kyra*", that is low nutrient. In some years, these plants at the deepest part of the meadow are not even mowed.

24. Wet grasslands are mainly dominated by salt-tolerant species of alkali or salt grass (*Bettiemeler*, *Puccinellia*), which provide hay with high nutritional value and high yields. Wet grasslands usually lie at a slightly higher elevation, and even in rainier years, it is possible to collect hay from these areas. They provide the most important and most reliable sources for haymaking.

25. Typical plants in dry grasslands include smooth meadow-grass (*Uukaryskaj/Bettieme*, *Poa pratensis*), crested hair-grass (*Otokhoon*, *Koeleria gracilis*), Turkestan barley (*Khalba Dabydala*, *Hordeum brevisubulatum*) and couch grass (*Acha/Silis ot*, *Elymus repens*). In dry years, the use of dry grasslands for fodder purposes may be complementary due to low yields, but the Sakha consider the hay harvested from this area to be the highest quality fodder. These grasses contain less water and are rich in nutrients. The boundaries of the three vegetation zones shift with the amount of precipitation and the cyclical rise and fall of the lake's water level in the alaas meadow, and the quantity and quality of the hay collected from the alaas also fluctuate from year to year (Usanova–Perfil'eva 1966).

26. The Sakha hayworkers distinguish various types of hay collected from the three vegetation zones. Two types are recognized in particular. One is the so-called alaas grass (*alaas oto*), which is collected from the dry grasslands. According to the locals, the most excellent hay in the alaases is the flowering meadow grass (*sibekki oto*), which contains, among others, rosebay willowherb (*Kuchu*, *Chamaenérion angustifolium*) and veronica incana (*Borong lohuor*, *Pseudolysimachion incanum*). The fodder from flowering meadow grass has superior nutritional and medicinal properties, just as the milk from cows reared on fodder from flowering meadows is considered sweeter and the butter more nutritious.

27. However, the dry alaas grass does not grow reliably. In droughty years, only very small amounts of hay can be harvested, and according to the locals, it is mainly the drier alaas grasses that are damaged by locusts (*kötör ahyngka*). Unlike alaas grass, the grasses in the wetland areas, known as *uu oto* in Sakha, grow in large quantities reliably every year. However, they are lower in nutrients and vitamins, as stated in Abramov's book (Abramov 2000: 20–22). They also taste more acidic and salty, making the milk from cows fed on them less palatable. In summary, the

quality of hay given to dairy cattle influences their milk's fat content and taste. Therefore, it is advisable to feed dairy cattle hay harvested from flowering alaas fields where possible. All other stock can be fed less nutritious hay.

28. The alaas meadows have a great importance in hay management and cattle farming, and the Sakha people have been actively involved in shaping the landscape following their settlement in northeast Siberia in the 12th–13th centuries. Their primary goal was to increase the extent of wet and dry grasslands, which was achieved by three main methods: deforestation (*soloohun sir*), drainage (*khoruu*), and the flooding of lowlands, thereby creating artificial lakes (*kupput küöl*). These methods influenced the amount of hay that could be harvested from the meadows and the possibilities of fishing and water extraction (Petrov–Petrov 2002: 4–6).

29. The subarctic permafrost landscape offers various types of sceneries that create a mosaic-like pattern. Among these landscapes, the alaas meadows are the most crucial ones for the Sakha hay and cattle economy. However, these meadows also contain parts that mainly depend on the elevation and water regime. The co-adaptation of the Sakha to alaas meadows and vice versa has transformed the lowlands of Central Yakutia and the Turco-Mongolic cattle and horse economy of South Siberia. In the early stages of settlement in Northeast Siberia, the Sakha began to occupy more and more reindeer pastures used by the reindeer herder Evenki, the previous inhabitants of the area, which resulted in the gradual displacement of the Evenki. This expansionary trend is also documented in Sakha historical legends. The Sakha did not consider the emergence of alaas meadows as a purely natural occurrence but rather as the outcome of a process that involved the Sakha settling in the area. According to historical legends from various sources, when the Sakha arrived in Yakutia, they burned down the forests, which led to the formation of alaas meadows (Sehen Bolo 1994: 85). A Sakha legend collected in the early 20th century provides a good example for this view.

30. “When the Sakha first arrived in their current place of settlement, the riverbanks and forest were abundant with wild game. It is believed that the Evenki people did not have any cattle or horses but only relied on reindeer for their sustenance. Therefore, they would wander around areas that had plenty of game and reindeer to hunt. When the Sakha arrived, who kept horses and cattle, they chose to settle in areas where there were pastures. To enlarge grasslands, the areas that were previously covered by dark forests, swamps, and places that only provided food for reindeer were burned.” (Sehen Bolo 1994: 41–42)

31. Therefore, the relationship between the Sakha and the alaases cannot be described as a dynamic sociocultural process evolving in a stable natural environment. On the contrary, they form an inseparable relationship, where alaas means a lot more than a sheer economic resource. In the following chapter, I will examine this intimate relationship between thermokarst depressions and humans.

Alaas meadows and the Sakha

32. The grasslands and the lakes of the alaas meadows are crucial for the rural Sakha horse and cattle economy. They serve various purposes, such as harvesting hay, grazing, obtaining water, fishing, and hunting migratory birds. Therefore, they

hold great significance. However, alaases are much more than just economic resources to the Sakha. They consider them living, sentient beings rather than mere inanimate objects in the environment.

33. Animate alaases and the lakes within are considered living beings with a firm body contour and a certain orientation. The alaas lakes and meadows have a physical presence, and it is common to refer to them in terms of body parts, such as the head or the leg of a lake. Sometimes, locals can even indicate the direction an alaas faces and its back. However, the physical structure of an alaas is not the same as that of a human body. Therefore, there are other ways to distinguish the various parts of the meadows. The northern side of an alaas, (*kuula öttö*), is typically reserved for the burial of ancestors, while the southern part, (*taala öttö*), offers a place for human habitation. These lentil-shaped ecotopes are viewed as being held in the same respect as humans or animals, and it is customary to avoid stepping on them unnecessarily. Traditionally, roads were built to avoid crossing the center of an alaas. Many travelers unfamiliar with the area would only cross the middle of an alaas if they had a specific reason to do so. Unlike the endless forests, an alaas has a definite contour, and its spirit is usually intrinsic to its physical embodiment. However, like the human soul, the spirit can temporarily leave the body.

34. Local people consider alaases as definitive and distinct entities when drawing or narrating mental maps. Therefore, alaases need to have names, because a meadow without a name cannot be considered a true living being. A Sakha proverb even states: '*Alaas aattaakh, dojdu surakhtaakh*', meaning: an alaas has a name, the land has fame. Alaases are sometimes even addressed as noble beings, as they are not external natural phenomena for the Sakha. Instead, they are living entities with whom they co-reside in the same physical space, seeking to build an amicable relationship. Every alaas has its own history of living with fishes, birds, herbs, and humans. Sakha toponyms reflect the richly interwoven fabric of interspecies relationships in which all local living beings are involved.

35. The concept of space carries a lot of social significance. The Sakha language does not have an exact translation for the concept of space that conveys the neutral meaning of the extent to which objects and events are positioned. Instead, the Sakha people view their environment as a number of interconnected places with unique traits, and roads and waterways connecting the individual entities. The structure of these maps is based on complex, diverse, and historically embedded socio-natural relations. Some parallel place names may refer to the same site, but they point to different aspects and events of the human-meadow co-existence. Overall, the Sakha people's perception and representation of their environment are intersubjectively oriented, where human and non-human agencies and histories crisscross each other.

36. Sakha mental maps, therefore, are not formed by finding paths or walking but by social relationships. Just as the “space” of social actions is the society, consisting of more or less discrete entities (individuals), Sakha mental maps are similar to sociograms that list the encountered living entities. Therefore, moving through the boreal forest is not a continuous motion in space but a series of encounters, leaping from one island/place to another in the ocean of the boreal forest. In Sakha language, there is no direct equivalent for the word “society”. However,

the term most commonly used to represent a similar idea is *d'on-serge*. This term refers to a group of people who live in the same area, surrounded by adjacent alaas meadows. This community of humans and alaas, along with other living entities, forms the foundation of local society, and the local environmental perception and cognitive maps Sakha hayworkers and local historians drew on my request in the course of my fieldwork demonstrate exactly that.

37. The Sakha perceive and represent their environment as a set of discrete entities connected with roads and waterways. If one argues that egocentric navigation is subjectively oriented, then allocentric navigation represented in these maps is intersubjectively oriented. They are based on complex, varied, and historically embedded socio-natural relations. Therefore, some place names (denoting alaas meadows) refer to the same site, pointing at different aspects of the same entity. Cognitive maps show an archipelago of living entities with more or less definite contours coexisting in the boreal forest; therefore, these Sakha mental maps are not created through path-finding and walking but by social relations. Therefore, it is hard to argue that, unlike Europeans, the Sakha do not perceive their environment as an abstract image. In fact, they do, but it is not a frozen, rigid landscape image for them, but a rather dynamic web of relations with individuals – similar to genealogies. Just as the "space" for social actions is the society, consisting of more or less discrete entities (individuals), Sakha mental maps are similar to sociograms enumerating the encountered living entities. Therefore, movement in the boreal forest is not a continuous motion in space for the Sakha, but a series of meetings: leaping from one island/place to another in the nameless ocean of the boreal forest.

38. Due to this intimate relationship and shared societal life, the relationship between the Sakha and the meadows and lakes is often described as a religious phenomenon (Iromoto and Yamada 1994, Yamada 1999, Alekseev–Romanova–Sokolova 2012). According to this perspective, the Sakha have an elaborate belief system in which all earthly entities, animate or inanimate, have an *ichchi*, or protector spirit, who mediates between humans and non-humans. In Sakha, big lakes and rivers are called *ebe*, which means grandma. The are many moral obligations to regulate Sakha behavior on and around these bodies of water. It is strictly forbidden to make any unnecessary noise around the lakes or to throw anything into the water. When the Sakha arrive at the shores of a lake, they usually stop their car, smoke a cigarette, and greet the lake, providing it with small gifts. In wintertime, when cars cross the frozen surface of a lake, the radio is switched off, or the volume is turned down. The most immediate connection between the locals and the lakes occurs during dragnet ice fishing. During the fishing season, people spend entire days on the icy lake surface, working, eating, and drinking. They share their food with the lakes and never eat or drink alone. In essence, people must behave respectfully toward a meadow or a lake, treating it like a noble person.

Multiple bodies, souls, and ontologies

39. The concept of local society, both human and non-human, is based on the idea that the relationship between body and soul is not abstract but rather complementary. The body and the soul are not in opposition but they work together. According to the Sakha, three interrelated souls construct the world and create the bodies

that belong to each living being. Humans have all three souls, while other beings usually have fewer. These three souls are the mother soul (*ije kut*), the earth soul (*buor kut*), and the air soul (*salgyn kut*) (Tumusov 2001).

40. The mother soul is eternal and perpetuated, enriched, and more fulfilled with each life. It gives life to the earth's soul (*buor kut*) at conception and is present in every particle of every living being with a body. It cannot be separated from it; with its death, it becomes earth. The air soul (*salgyn kut*) generates the spiritual power of living beings and is the soul that gives humans the ability to think and desire (Bravina 1996). This soul is free to leave the body during its life (for example, during sleep) and it takes the form of a small beetle or spider. When a person dies, this soul is not destroyed, but either moves to the afterlife or remains in the body of the deceased.

41. A female spirit being, *Ajyhyt* in Sakha, controls and supports the formation of the three souls before and after birth. Like other living beings, every lake must have a body and a soul. Neither disembodied nor soulless beings can be classified as entities with the same attributes as humans. Therefore, a lake or meadow is alive not only because it has a soul but also because it has a body. Ponds and meadows are finite and have a body perceptible to the human being who comes into contact with them. On the other hand, forests are not considered living beings by the Sakha because they do not have a delimitable, perceptible body.

42. The Sakha imagine the relationship between body and soul in a dynamic way. The soul can take on a body of its own and thus leave the body. In this case, a small man or some kind of insect (mainly in the form of a fly or a spider) becomes visible. In the case of horses and cattle, an insect is also a creature that can enter and leave the body. In other words, the body also has an immaterial component, and the soul also has a physical appearance. Each contains a part of the other.

43. The body of an alaas meadow is the thermokarst depression in which the meadow rests, along with its herbaceous vegetation and the water of the lake. The soul of the lake can only be seen or encountered when it leaves the lake, usually in a dream vision. However, the lake can also be perceived spiritually by a Sakha approaching it. One of my interviewees, who had been a fisherman and trapper in the area since the 1970s, told me that he had met the soul of Lake N'id'ili, described as an old woman with a braid of seaweed. In other words, the body of the lake does not contain the soul of the lake, but it is free to interact with people in its own physicality. The concept of local human and non-human society is based on the idea that the relationship between body and soul is far from abstract. The body and the soul complement each other and are not dichotomous or opposed to each other.

44. These alaas meadows (while being animate entities in their own right) provide the medium for human-to-human and non-human-to-human relationships. The souls and the bodies of animals, humans, and plants live and die in this relatively closed realm. Some living entities are almost entirely sedentary, such as herbaceous vegetation, the crucian carp that live in the lake ponds, or the blood-sucking parasites. Some animals are tied not to one but to a few surrounding ponds, such as cattle, who roam the nearby pastures. Some species are partially alaas specific, such as bears or even migratory birds. In the case of bears, the Sakha distinguish

between local and migratory bears, just as in the case of migratory birds; they distinguish between those who nest permanently in a meadow and those who just rest there for a while.

45. The cattle and the horses raised in the alaas of a region are usually slaughtered there. That is, both the body, and corollary, the earth soul also, are preserved in the alaas meadow. In other words, the souls of the slaughtered, hunted and consumed animals do not leave the local system, and in one way or another, they return or are reborn. The soil and the water of the alaas, therefore, contain the souls of all the living creatures that have died in its territory in the form of soil. This material later becomes the breeding ground for the living organisms that live in the alaas. The Sakha also clearly distinguish between the types of soil that create ponds with drinkable and good-tasting water and conditions favorable or unfavorable to certain plants. The taste of the soil or the water of a specific alaas is found in all living entities that reside in it. Indeed, this specific taste is what the Sakha look for in good food.

46. In a previous paper examining fishing and trapping methods (Mészáros 2020), I argued that understanding local lifestyles based on onto-typological differences provides a perspective focusing on otherness and essentializing indigeneity. My fieldwork experiences suggest that local experts mediate and shift between incongruent ontologies and reflect on their differences. In Yakutia, the intermingling of different ontologies is a salient feature. Local experts and shamans are trying to create a bridge between ontologies, and anthropologists and ethnographers are committed to transmitting scientific, environmental ideas to villagers while combining them with the experiences of the local subsistence economy (Crate 2013). Incongruities in local lifestyles demonstrate that ontologies should not be considered full-blown, well-ordered systems. In the next section, I will argue that this ontological polyphony was deeply embedded in Yakutia's history under Russia's colonial rule, and, therefore, without giving a short introduction to Sakha adaptive strategies, it is impossible to understand the issue of sustainability and community resilience.

Alaases, the Sakha and the Russian state

47. Traditional Sakha horse and cattle breeding took a unique form due to two effects. First, it was influenced by the environmental and ecological conditions of the subarctic environment, that is, by the long process of adaptation to the affordances of Central–Yakutia (Abramov–D'jakonov 1990; Vinokurov 2001; Granberg–Soini–Kantanen 2009). Second, it was the process of adapting to the ever changing socio-economic and political environment imposed on the Sakha by the Russian/Soviet administration.

48. Contrary to classical ethnographic works (Ksenofontov 1992; Seroshevsky 1993), which tend to characterize the farming system of the Sakha as nomadic pastoralism, in fact, large-scale sedentary livestock farming was typical in Yakutia. Due to the short vegetation season in Yakutia, the Sakha herdsmen had to keep their cattle in stables for nearly nine months (from September to May). This meant they needed to provide a significant amount of fodder for their cattle and follow a rather sedentary lifestyle that relied on the intensive mowing of hayfields enclosed

by fences – hindering cattle and horses from grazing. This dependency on haymaking required the Sakha to strictly regulate the use of meadows, hayfields and pastures. With the population of the lowlands surrounded by the Aldan, Amma and Lena rivers, the freely accessible hayfields, pastures and grazing land gradually disappeared. In other words, fodder gradually became an increasingly scarce resource. This situation required a tight control of the use of meadows even before the Russian administration of alaas came into being.

49. Since 1632, when the Russian state annexed Yakutia, various external sources, such as the Yakutsk voivodes (administrative leaders), have produced Russian-language records that constitute important documentary material on the use of hayfields. These sources include reports (*otpiski*), petitions, lawsuits (*chelobitnie i sud'ebnye d'elo*), records of investigations (*syshchik*), and complaints (*zhaloby*). They shed light on the ownership of hayfields and meadows, as well as the internal tensions between the Sakha and the Evenki (Ivanov 1979). Russian and Soviet historians and ethnographers have repeatedly published these written sources, with the latter group (complaints) focusing on the interrelationship between the development of different social conditions and the issues of Sakha ethnogenesis. These records have been analyzed to determine whether the legal and social arrangements associated with Sakha landholdings can be considered feudal systems (Ivanov 1964, Safronov 1977; Ivanov1974). However, these sources provide rich and ethnographically relevant information on disputes between Sakha individuals.

50. These documents described in detail the kind of property relations that existed in the early 17th century. Based on these records, in the 1970s a scholarly debate emerged around the topic of Sakha land-use and landownership, with two opposing views. One suggested that hayfields, or at least some of them, were small family-owned properties that could be sold, while the other argued that the rules governing the use of meadows were organized along tribal lines and clan affiliations, following examples of pastoral shifting cultivation known elsewhere.

51. In Siberia and Central Asia, it is commonly postulated that large-scale pastoralism in its traditional form did encourage the development of private land ownership (Riasanovsky 1965). However, the specific ecological conditions in which Sakha horse and cattle breeding developed differ from the Eurasian steppe environment, making it difficult to apply the farming system and the principles of land use typical of grassland nomadism in Southern Siberia, from where the Sakha moved to Central Yakutia.

52. To shed more light on this topic, the paper provides examples of specific regulations from litigation documents dating from the 17th century. The records show that the Russian state representatives in Central Yakutia had to deal with a settled population of high density that was unusual for Siberia. It became apparent to the representatives of the Russian state that social relations in Sakha were complex and stratified, with an unequal distribution of cattle and meadows (Sehen Bolo 2002). As a result, a significant portion of conflicts between the Sakha was related to the ownership of meadows and the hay they cut. In 1634, the Cossack Ataman Galkin reported that the dukes of the Khangalas tribe and their men owned all the land, and neighboring dukes feared them. In 1644 and 1646, Öyük Nikin, one of the dukes of the Khangalas tribe, complained about landless people from other

territories arriving on his land and requested the tsarist administration to prohibit them from leaving their former settlements (Ivanov 1964: 220).

53. In 1644, some Sakha leaders turned to the Russian authorities over land ownership disputes. For example, the aforementioned Öyük Nikin complained to the Russian administration in Yakutsk that his and his two nephews' meadows had been mowed by servants of the Russian administration. The case was investigated, and the Russian state paid substantial compensation to the owners of the alaas meadows (Ivanov 1964: 221–222). There are several other documents from the 17th century in which the Russian state acknowledged ownership of the fields and paid compensation for the hay collected from them.

54. However, these cases do not necessarily imply private land ownership but rather land used and owned on a tribal or clan basis. In some cases, the hayfields were linked to a larger kinship group, on behalf of which the Sakha leaders acted. In 1678, a case was recorded in which Torok and Menik Toybokoev from the Nam tribe complained against Chögün Izhilov from the Böötün tribe, who had mowed their hayfields on the islands of the Lena River. The complainants argued that these areas were hayfields inherited from their father and grandfather. The case led to a detailed investigation, during which 12 of the 15 witnesses confirmed the complainants' claim that the land had been owned by the Toybokoev family for generations (Ivanov 1964: 226)

55. Interestingly, there were also cases reporting the sale of hayfields. In 1687, Tokhtohoí Kamrukov sold his hayfield to the Kainas, who lived within the same administrative unit and were members of the same clan, for two horses and a milk cow. However, the two meadows, which were called “Ikki Turagas”, were not transferred to the buyer until two years after the purchase in 1687. He, therefore, took the matter to court (Ivanov 1964: 228–229). The Sakha traded in meadows not only among themselves but also with local representatives of the Russian state. Dozens of records have survived, in which the Russian state (and its local representatives) acknowledge and consider the sale of hayfields to be legal (Ivanov 1964: 234–237).

56. Inheritance of alaas meadows as family property (and a possible commodity, which can be sold) was a common phenomenon in the 17th century (Basharin 1956: 30), until the point when the Russian state gradually gained control over the ownership of land in Yakutia. However, it is important to note that the ownership regulation only covered hayfields and pastures, as property owned by Sakha families does not appear in 17th century sources. Similarly, there is no information whatsoever about the ownership of lakes, rivers, and forests. The Russian state gradually changed this situation and abolished land ownership in Yakutia. This administrative and legal change imposed a new adaptation pressure on the Sakha horse and cattle economy and alaas meadow management.

57. During the 17th century, the collection of *yasak* or fur tribute significantly impacted the local farming practices of the Sakha. Additionally, administrative boundaries were drawn, and the state established and recognized new social groups. These changes brought about a major transformation in the social organization of the Sakha people. The joint taxpayer groups that had emerged with the introduction of the payment of fur tribute began to consolidate. Within these

groups, leaders emerged who both gained rights within their own communities and assumed obligations to the Russian state (Dolgih 1960: 354; Tokarev–Bahrushin 1953: 31–41).

58. During the collection of yasak in the 17th century, administrative boundaries were drawn to separate communities of joint taxpayers. It is obvious that the ruling Russian voivodes were responsible for interpreting the social structure, contacting those Sakha whom they identified as leaders. They were also responsible for collecting tax from the Sakha in line with the social and political structure they identified in the process of contacting the Sakha. Representatives of the Russian state (voivodes) in the Yakutsk Governorate then transmitted both collected taxes and information to the Siberian ministry, the Siberian prikaz. These reports included the size of the groups behind local leaders, how they could be managed, and how much fur tribute they could pay (Dolgih 1960: 11; Borisov 2002). In the Yakutsk Governorate, in the 17th century, socioeconomic units belonging to a united political entity whose members paid tax together were named volost' in Russian records. A volost' was a territorial unit consisting of a group of people paying fur tribute in one location, through one leader. In Siberia, this term was used to refer to taxpayer groups of settled or semi-settled peoples, as opposed to groups following a migratory or pastoral way of life, which were taxed according to rods, which means clans (Tokarev–Bahrushin 1953: 45; Dolgih 1960)

59. In recognizing and legitimizing the leaders of the volost's, the tsar and the head of the Yakutsk Governorate also enabled the emergence of new forms of land ownership and land use in Central Yakutian territories (Kivelson 2007: 37). This policy resulted in the state expropriating the tradable private and public lands of the Sakha families. After this change, the use of hayfields and pastures depended on the taxpaying ability of families (Pahomova–Maharova 1999: 10–15).

60. Starting from the 18th century, the tsarist authorities began to demand tribute in the form of money instead of furs. To ensure that taxation was money based, it was made land based simultaneously (Thomas 1984: 18-19; Istorija Jakutskoj ASSR 1957: 141). This happened at the same time that the hereditary succession of volost' leadership from father to son was abolished, and a new system based on leaders' electability was introduced (Gogolev 2005). This system favored the wealth-based legitimation of leaders within the new territorial administrative units, denoted as naslegs in Russian administrative sources. The ban on moving from one area to another was also introduced.

61. The consequences of the introduction of land-based taxation and the ban on moving were significant. The size of the hayfields associated with each household within a nasleg changed rapidly because the right to use them could not be inherited but had to be redeemed every year (Basharin 1956: 44). This redemption could only be done through the volost' and nasleg leaders, who mediated the flow of money from the state to the Sakha. The use of the hayfields and distribution of settlements came under the control of leaders who were legitimized by the tsarist administration. They transformed the pre-existing social formations of the Sakha, which were previously cohesive on kinship and territorial grounds, to suit their own needs. Consequently, by the 19th century, kinship-based cooperation and territorial use had ceased or become insignificant (Istorija Jakutskoj ASSR 1957: 163).

62. In 1822, Governor Mikhail Speransky (the Governor of Siberia) introduced a set of regulations that brought significant changes to the taxation system in Siberia. Under the new tax system, Sakha were categorized into four groups based on the amount of land they used: full taxpayers, half taxpayers, quarter taxpayers, and penniless individuals (Istorija Jakutskoj ASSR 1957: 163–168). The majority of the Sakha were classified as "nomads" and were subjected to a land tax instead of fur tribute.

63. The land tax, known as *ölbüge* in Sakha, was to be paid in cash and regulated the use of hayfields. This led to the further separation of hayfields from other land types (Tokarev–Bahrushin 1953: 104; Slepcov 1989: 16–17; Basharin 1956: 38), which caused a shortage of hayfields in Central Yakutia. As a result, poor-quality hayfields were allocated and taxed, leading to a scarcity of hayfields that continues to be a problem in Sakha farming today in Central Yakutia (Istorija Jakutskoj ASSR II 1957: 280).

64. Land tenure tax paid in cash, imposed on the Sakha had a significant impact on livestock composition. Before the 19th century, horses were the most important livestock. However, cattle farming gradually gained importance, and with it came new forms of land use (Basharin 1956: 19–20; Seroshevsky 1993: 257). Cattle were kept in stables for nine months, which led to an increase in hayfields at the expense of pasture. This process gradually led to a situation in which, by the middle of the 20th century, the share of hayfields and pastures within the agricultural area was the same (Basharin 1956: 45; Matveev 1989: 54). The average number of dairy cows per household before collectivization was 5–6 (Alekseev–Romanova–Sokolova 2012: 146), but the distribution of the herd varied considerably. For example, in the I. Bajagantaj nasleg (where the village of Tanda, in which I carried out extensive field studies between 2002 and 2013 is located), before collectivization, one-third of the households had only two or three milk cows. This can be seen from the distribution of hayfields. On average, a demand of one ton of fodder hay per dairy cow can be calculated.

	0–5 tonnes of hay	**5–10 tonnes of hay**	**10–20 tonnes of hay**
Number of households	44	81	20
Number of hayfield plots	298	740	259
Average number of hayfield plots	6.7	9.1	12.95
Total land area (ha)	171. 92	606.5	246
Average hayfield plot area (ha)	0.585	1.22	1.05

Annual amount of harvest in I. Bajagantaj nasleg, 1917

65. The Sakha breed of cows were known for their small size, weighing only 350–400 kg, and for their low-maintenance nature. They could survive on a relatively low feed intake of less than one tonne, even over long feeding periods. Similar to the Sakha horses, the cows could find grass under the snow, allowing some of them to graze even in winter. Although the milk yield from these cows was modest, not exceeding 800 kg per year, the fat content was notably high, ranging from 5% to 7%.

66.

One may conclude that encounters with the permafrost environment and the Russian state radically transformed the Sakha horse and cattle economy during the course of the last four centuries. Therefore, in Sakha, the relationship between the subarctic cattle and horse economy and the alaas meadows changed significantly during this time, under the influence of Russian state administration and taxation. In the late 19th and early 20th centuries, when the first ethnographic descriptions of Sakha farming saw daylight, unequal power relations, and the demands of Russia's colonial rule had already dramatically influenced local socio-natural constellations. The robust political and economic forces of the Russian and Soviet state fundamentally transformed the community of humans and non-humans. Therefore, it is difficult, if not impossible, to isolate the Sakha economy and ontology as a monolith and independent entity based solely on indigenous values and practices. Accordingly, in the following chapters discussing my fieldwork experiences on the use and consumption of fat, I will focus on this complex interplay of human and non-human agencies against a historical and socioeconomic background provided by the Russian and Soviet states.

Eating and celebrating fat

67.

I have conducted anthropological fieldwork in several villages in Yakutia including Tanda, Tiit-Aryy, Tyaja, Aryktaakh, Kylaajy, and Küp. These villages, with the exception of Küp, were located in areas spotted with alaas meadows providing a home for local farming and settlements. During my visits to these villages between 2002 and 2015, I had the opportunity to attend several events where local food and drink were served. These occasions were particularly informative as they showcased the specialties of the Sakha cuisine on festive and everyday occasions and provided insight into the local food culture and taste preferences.

68.

Attending these events taught me how the taste and texture of food can convey a message to consumers. Before discussing the diversity of food and drink, I would like to share two personal experiences to demonstrate that the meals served during these events were not just about eating.

69.

In 2002, I spent an extended period of time in Tanda. After a month in the village, I got invited to the house of Stepan Böötüröbis Gotovcev, who was the leader of a local agricultural collective. The invitation served a dual purpose – firstly, we discussed the farm he ran, and secondly (which I only found out later), he wanted to introduce me to Sakha cuisine. As we set off on a cold December evening to visit, N'ukkolai Taaaryskaj, who accompanied me on the trip, warned me to be prepared – there would be a big repast.

70.

When we arrived, our hosts and a large round-shaped Sakha table (*sandaly*) awaited us. A wide variety of locally produced food, and homemade dishes were lined up on the table. The repast started with *salamat*, which is a food of honor, and consists of flour fried in butter and has a pudding-like consistency. A variety of dairy products, meats, and fish followed this. Our host drew our attention to four dishes in particular.

71. First up, there was a plate full of minced and raw frozen foal liver served with raw (frozen) foal flank. Stepan explained that all meats taste best when raw, without any spice added. He said that the most characteristic flavor of a particular area is accumulated in the internal organs and fat. Spices should not be added, because they overshadow the true taste of the food. Maybe a little salt might be used. The meat and the liver, eaten raw, are full of vitamins (*sümehin*), which are only transferred to you if you do not cook or bake the meat.

72. Second, he recommended locally caught crucian carp. These fish live in the lakes of the alaas as the only type of fish existing there. That is why you do not prepare this carp like any other fish – because it is not a fish. A carp is almost like a horse or a cow: it is a living creature of the alaas. It carries a flavor that is peculiar to the land and the water of the alaas. Nothing is put into it that is not part of the alaas. It eats the plants and insects of the alaas pond; that is why this carp is not prepared in the same way as any other fish. Unlike with other types, whose offal is removed during cleaning, in this case all the offal (except the bile) remains inside the carp: the intestines, internal organs, and eggs are cooked together with the fish. Stepan said, "*Don't be surprised, because the real taste of the carp is found in its guts. If you threw them away, you would only have the flesh, which isn't worth much.*"

73. Stepan served a soup made from beef tripe and belly fat at the end of the meal. Although the soup was very fatty and had a strong smell, Stepan claimed that it was one of the most important Sakha dishes, and it was even better than meat. "We don't add any spices, just a little salt to the soup so it can give you strength and fill you up." Stepan explained that the taste of the soup comes from the alaas herbs and while it has a strong smell, it is very good for consuming.

74. Stepan also offered us kumis, which is rarely made at home any more. The quality of the kumis, he explained, depends on the mare's diet, and where she lived. The better the grass the mare eats, the more nutritious her milk is, and the better the kumis tastes. Good kumis, just as a good soup, gives you strength.

75. After all these meals, N'ukkolaj warned that the local food could have a strong effect on my body and might cause some discomfort. It turned out that he was right, as I experienced diarrhea that night. On the next day, N'ukkolaj assured me that this was of no surprise because these foods, i.e. fat, offal, and kumis, purify everyone who is new to this territory. One has to get used to the local materials, the local spirits.

76. Next year, one evening in late spring with Böötür, we enjoyed a delectable dinner of fatty crucian carp soup. The soup was cooked to perfection, with tender chunks of fish and a rich, savory broth that was bursting with flavor. It was the perfect meal to warm us up on a chilly evening. He caught those crucian carp fresh on the same day. He said the best thing is to have the crucian carp soup before bedtime. After drinking the fatty soup, you won't have to worry about anything else. To make the soup, he added some locally picked wild garlic and a bit of milk at the end, which gave it its unique flavor. He carefully removed the cooked crucian carp from the pot, making sure they were all in one piece and poured the juice into metal mugs. According to him, the fattier the juice, the better it tastes.

77. Then we started eating the fish itself. As was the custom among the Sakha, the giblets, the intestines, and the eggs were cooked inside the crucian carp. As I began eating the fish, I picked the meat off the back, near the backbone. Then Böötür called to me: “Hey, you are not a raven picking the meat off the back of the carcass of a dead cow. Eat it like we open up a real cattle!” I turned the carp over and started eating it from the belly. That way, you get to the internal organs quicker; just like the carcass is cut up at a cattle or horse slaughter.

78. We woke up late the next day and found Böötür already awake. He explained that a good crucian carp soup nourishes both the body and the soul, as everything we eat becomes a part of our being. He praised the thick soup we had eaten the previous evening, saying it was delicious because every ingredient was sourced from the nearby alaas meadow. He further explained that the water used in the soup came from the same pond where we had caught the fish, the hay given to the cow that provided the milk, added to the soup, came from the same field, and even the wild garlic grew in the vicinity. Böötür believed that local food, like the crucian carp soup, strengthens the body and the soul the most. He also shared that the older generations used to drink kumis while making hay in the summer, but nowadays, people don't know how to make it any more. Therefore, they drink crucian carp soup instead. Böötür added that the elders used to drink 2–3 liters of kumis daily, whereas for young hayworkers less is enough for the soup. Similarly to kumis, you can tell from the taste of the soup where the fish comes from. “In our lakes, the bones are softer and the flesh more tender, making the soup even more flavorful” Böötür added.

79. Through many similar shared dining experiences, I have discovered that certain local foods provide nutritional value, and some kind of intangible nourishment, that feeds more than just the body. The body and the soul are interconnected, and when it comes to food, the material components (flesh, fat) cannot be separated from the other dimensions of food. While some foods (especially those that contain much fat) have robust additional value beyond nutrition, this is not true for berries, river fish, or grocery store food. In the following section, I will focus on two food groups that emphasize the importance of fat in the Sakha dietary culture: dairy food and fatty meats.

The fat and *ürüng as*

80. Dairy food (*ürüng as* or sometimes *üüt as*, and even *ynax/anax as*) occupies a central place in Sakha cuisine. In Sakha there are two, more respectful terms for dairy food: *sölögöj* and *tunakh*. Both could be translated as dairy food. However, there is a slight difference in the usage of these terms. Sakha ethnographers and folklorists agree that milk and dairy products serve as a mediator between humans and non-humans (Alekseev 1975; Kolodeznikov 1994: 220–221; Sehen Bolo 1994: 185–186; Sehen Bolo 2002: 61; Zakharova 2004: 11). Dairy food can represent both humans and non-humans. Thus kumis, *salamat* (flour fried in a copious amount of butter) and butter are present in the upper world as well as the middle world. In a benediction text, for example, at an offering to a tree, the spirit appearing to the performer is characterized in the following way: “*…My grandma, lady undressed, appeared/ And I inspected her by staring at her/ She got milky white*

head/ She looked being grown old…" (Alekseev–Efremov–Illarionov 2003: 118). A similar set of attributes describes Kürüö D'öhögöj Ajyy, the horse-shaped son of Ürüng Ajyy Toyon (the creator deity of the World): /… "*High Kürüö D'öhögöj/ You, on a milky throne/ With eagle like forehead…*" (Alekseev–Efremov–Illarionov 2003: 124)

81. On the other hand, humans (the Sakha) and their habitat (the alaas meadows) are also characterized by the permanent presence of dairy products. There is a surprising number of toponyms for former and current settlements and alaas meadows in Yakutia derived from dairy products names: *aryy* (butter), *üüt* (milk) or *kymys* (kumis), or from objects closely related to dairy products: *choroon* (wooden goblet for kumis), *chabychakh* (a medium-sized milk bowl), *khamyjakh* (ladle), etc. (Bagdaryyn Syulbe 2004). Generally, in benediction texts humans communicate with dairy food, with non-humans; the act of offering milk and the ability to make dairy food is the main characteristic of Sakha meadow, cattle and horse management. Milk, as a substance, defines the immolator's place and role in the ritual's communicative situation. Sometimes the entire process of acquiring and preparing dairy food is described in the benediction text to thoroughly define the cattle and horse breeder Sakha connecting with the gods: "*At the beginning of the new year/ When the time of broad and bounteous fries come/ By well-fermented kumis/ Which is the gift of my white mare/ By the yellowish butter/ From the butter, which is made of the beestings of my old cow/ By the not-clotted, still thick sour cream/ From the milk of my first calved cow/ Let me present/ To my mother Earth!*" (Alekseev–Efremov–Illarionov 2003: 182) Livestock, such as horses and cows may be characterized by dairy food (Zverev 2000: 28), especially in benedictions also addressed to Kürüö D'öhögöj Ajyy.

82. Thus, dairy products are usually present when humans seek to communicate with non-human beings. It transmits power and fertility, therefore the bride and bridegroom receive kumis from their parents at their wedding (Slepcov 1989: 32–33). Dairy food is a typical offering to fire and holy trees. It is offered at the laying of the foundation of a new house, and when one moves into a newly built home, or it is put on top of the oven of the winter settlement, before moving back from the summer settlement. On the other hand, blessings from the gods and spirits are understood as a kind of harvest of milking. In a benediction text, the spirit of water is asked to help fishermen in the following way: "*With your ritual ladle/ That of the main and tail of the horse/ After milking the milk of the udder/ And sprinkling it with your ritual ladle/ Arranging a copious yhyakh/ Feed us, grandma!*" (Alekseev–Efremov–Illarionov 2003: 190).

83. The significance of dairy food is reflected in Sakha oral literature in various ways. A typical scene in Sakha epic songs, the *olongkhos*, involves female shamans or goddesses giving the hero dairy food to regain his power. Dairy food can also set the seal on friendship and alliance. In some cases, the hero of the *olongkhos* is nursed by a goddess to rejuvenate him before a long and exhausting journey. In benedictions, it is often mentioned either as a distinguishing attribute of a spirit or as an offering to a spirit. Yet, one can see the semantic difference between *sölögöj* – a substance, a blessing, an independently existing phenomenon - and *tunakh* – the outcome of a process of work, the harvest of human activity. *Sölögöj* is given to the hero, while *tunakh* is offered to the spirits. *Sölögöj*, therefore, has another meaning too: it is a nutritious substance given to living entities in the form of milk.

84.

Dairy food plays a unique role in the traditional Sakha nutrition system. Václáv Seroshevsky and Adam Shimansky wrote about Sakha nutrition in the late 19th century (Seroshevsky 1885; Shimansky 1885). Unlike the South-Siberian nomads, the sedentary Sakha have two milking seasons, one in summer and one in winter. Although less is milked in wintertime, dairy food plays an important role in nutrition throughout the whole year. The real difference between summer and winter lies in the kind of dairy product consumed.

85.

Being typically Sakha, the preparation of crucian carp differs from that of any other fish. The Sakha consider crucian carp more like beef than real fish, and there are many parallels in the preparation and killing of carp and horses (Maj 2006: 317–318). Another similarity between crucian carp and dairy food is that both are regarded as the secret of a long and healthy life (Everstov 1996: 22–24). A Sakha legend demonstrating the superiority of dairy food to venison exemplifies this very well:

86.

"It is described in a legend that an Evenki tasting Sakha yoghurt for the first time found it better than his own meals, like the brain of sable or the marrow of moose. He was astonished at first, and told the whole thing to his people. Thus, the Evenki of the river Aldan came riding on forty reindeers, and attacked the Sakha living by the river Amma. Near Khatyly, they entered Sakha territory and engaged in a battle. They were defeated and fled. This means that the Evenki attacked the Sakha, who have such good yoghurt, in order to defeat them, to learn their lifestyle, and to be able to make yoghurt." (Sehen Bolo 1994: 85).

87.

As I have argued so far, the consumption of dairy products by the Sakha is associated not only with their nutritional value but also with a sense of place. In fact, there is a close link between the taste and quality of dairy products and the grass of the alaas. The more nutritious the alaas grass, the slower it grows, and the more nutrients it accumulates. It is the high nutrient content of hay that makes the milk of a cow or mare truly nutritious, even healing.

88.

In Yakutia, dairy products from certain areas have their own specific tastes. For instance, the unique flavor of mare's milk and kumis from the Verhojansk region, and the taste of butter from the Churaphcy region are widely known throughout Yakutia. However, in almost every village where fieldwork is done, the local milk and dairy products are thought to taste significantly different from any other dairy products. For example, when drinking butugas, a yogurt-like drink mixed with herbs from a hayfield near Tanda, a friend of mine remarked that it was the taste of this alaas that was identifiable in that drink. He also added that drinking local *butugas* gives extra strength for the day's work.

89.

It is apparent that the nutritional power that is transmitted to the cattle through the alaas grass enters humans through the milk. Humans may further transmit or share this power by offering dairy products to non-human entities. In fact, they can give it back straight to the alaas meadow, offering it to the alaas lake when starting fishing or to the alaas when starting haywork in July. Animal fat also collects and stores the life force and nutrients contained in the alaas meadows. In the following pages, I will take a closer look at the role of meat and fat in the Sakha nutrition system.

Fat in meat

90. Besides dairy food and crucian carp, beef and horse meat occupy a central role in the Sakha nutrition system. There are significant differences in the proportion of people consuming meat, dairy products, and fish. In Yakutia, free-caught crucian carp was primarily associated with low-income people. The term *balyksyt*, meaning fishermen in Sakha, also means poor. Some fish dishes were explicit indicators of poverty. The everyday consumption of dairy products was common, contrary to meat dishes. As a rule, only the richer Sakha could afford to eat large quantities of beef and horse meat on a daily basis.

91. The Sakha distinguish between years of meat-eating (*et d'yl*) and years of dairy consumption (*üüt d'yl*). For the poorer Sakha, the former amounted to food scarcity, because if animals had to be slaughtered, they no longer gave milk. Slaughtering a cow caused a significant milk shortage for those with only few cattle. In Yakutia, poorer people slaughtered their cows in those years when they were unable to gather enough hay to feed them in winter; that is, when the alaas meadow did not produce enough grass, and the nutrients stored in the grass could not be accessed. The winters during which the poorer families ate meat meant deprivation later on; in contrast, the years when they could eat more dairy products in winter meant abundance and health.

92. Dairy food is highly valued in Sakha food culture, whereas horsemeat and beef have a more complex and polyphonic assessment. Obtaining meat involves the sacrifice of life, and as such, slaughter has immense importance in Sakha culture. Meat is less precious than dairy food, and it is usually not offered as food for local spirits when hayworkers, hunters or fishermen accomplish sacrificial rituals and feed the fire.

93. Due to unpredictable weather conditions in Yakutia, it is difficult to set a specific date for the slaughter of cattle and horses. In the villages where I spent the autumn, there are customary signs guiding locals about when to set a date for animal slaughter, known as the *idehe*. The slaughtering usually begins when the weather turns sufficiently cold and stable not to thaw, allowing the meat to be frozen in underground ice pits called *buluus*. There are another two signs to indicate the time for slaughter. First, the scarcity of winter fodder, and second, when the cattle start losing their fat after spending the summer grazing on rich pastures with nutritious grass.

94. In addition to the aforementioned reasons for starting a slaughter, there is a third factor that comes into play. During the summer months, Sakha people traditionally consume very little meat. However, as autumn approaches, they begin to crave the taste of it. Similarly, at the start of winter, when under-ice dragnet fishing begins, the Sakha long for the taste of fresh crucian carp. The families eagerly anticipate the day of the slaughter as it symbolizes the beginning of a period of enjoying meat. Slaughtering is closely tied to the idea of sharing, as the meat from the slaughtered animal is often shared among family and friends. Moreover, the spirits are also given their share, as nutritious food is offered at the location where the animals are slaughtered.

95. The place of slaughter is usually a bit further away from the stables. The horses and cattle are hit in the forehead with an axe. After that, they cut open the belly, severe the main artery next to the heart, and collect the flow of blood. Although an older man told me that it is not respectful to drink the blood immediately, many younger horsemen taste it right after the killing. They scoop it out with a metal mug from the abdominal cavity. Without going into detail about the different cuts, it is important to mention that a fatty part at once is given to the fire as an offering.

96. The fat from the slaughtered cattle can be collected and used as a substitute for butter. In the past, the collected fat was traditionally weighed, and when neighbors slaughtered their livestock together, the amount of fat was compared to determine which family was more blessed. In the Sakha language, there is an elaborate nomenclature for measuring and comparing the fat content of the meat. The inner fat, known as *khaha*, is an especially precious part of the slaughtered animal. It can be added to various products and foods to increase their nutritional value (Nikolaev 2010).

97. The Sakha highly prized marbled beef due to its exquisite juiciness and greasiness, which provides a superior taste (Gorokhov 2001: 15). This juiciness is often denoted with the word "*sümehin*." That is, the same word describes the grass's vitamin content and the meat's juiciness. The Sakha prefer fatty meat, which is called "*emis et*" over lean meat, which is known as "*kötökh et*." The meat from lean and sick animals has the least nutritional value and is not preferred. The soup made from it may even be unhealthy to consume. An animal's fatness determines its quality, with fat and healthy animals being the best and thin, lean ones being the worst. Fatty meat is easier to digest and is regarded as more nutritious than lean meat (cf. N. A. 1913: 11). I was once out with my friends hunting, and we ate a fatty beef soup in a hunter's hut. Giving me a huge portion, Anatolij said that I should eat it because a man without soup is like a stallion without testicles.

98. Moreover, fat and butter are believed to boost fertility, which is why they are given to mothers during childbirth (Savvin 2005: 142). They are also offered to the alaas meadows during ritual events, just as arriving at the abandoned settlement of one's ancestors. Respecting meadows and giving highly valued food (dairy products with high fat content) is a way of communicating with them and expressing respect and high esteem. Offering food for alaas meadows, however, has a more general effect on the relation between humans and non-humans. Namely, alaas meadows are considered to be connected by an invisible web, similar to a vascular system. If one has a good relationship with a specific alaas, it may improve his/her relation with other nearby alaas meadows also.

99. Taking care of the meadows and not exploiting them is essential since they provide many blessings to the Sakha. The alaas meadows should be fed frequently, just like humans, and the humans should give back something in return. The Sakha believe that the meadows and humans are closely connected, and it is their duty to maintain the balance between the two (Alekseeva 1999: 20). Therefore, they treat the meadows with high regard and respect them just like any other living being (Protopopova 2002).

100.
To summarize the above, I argue that the fat in meat has a significance in the local food culture comparable to that of dairy products. The fat that comes from the cattle and horses gathers the nutrients of the alaas meadows and carries them in a highly concentrated form. When one indulges in fatty meat, they receive not only nourishment but also benefits for their overall well-being and fertility. Thus, fat is beneficial not only for physical health but also contributes to mental and emotional wellness.

Fat, soul, and immortality

101.
As I have presented before, body and soul are not opposing entities for the Sakha. Therefore, the animate alaas meadows encompass the souls of all living beings that have died in their territory in the form of earth or soil. This substance eventually becomes the breeding ground for the grasses that live in the alaas. The Sakha recognize different types of soil that create ponds with drinkable and good-tasting water, and favorable or less favorable conditions for certain plants. The taste of the soil of the alaas meadow can be found in all living things and is sought after in good food. The absence of spices in rural Sakha cuisine and the consumption of raw meat and fat from slaughtered or hunted animals allow people to come into direct contact with the alaas meadows' substance as a source of nourishment.

102.
The appreciation of fat in meat and how it acquires its distinctive flavor and color when consumed is an important question for Sakha consumers. A specific type of field horsetail (*Chybaghy ot*), found in the alaas meadows around Verkhoyansk, is famous for enhancing the nutritional value and taste of horse fat in Yakutia. The fat content in beef and horsemeat is desirable and indicates the nature of the owner’s relationship with its horse or cattle. For instance, the cattle that are slaughtered in autumn or early winter are not milked in the summer and are fed high-quality, nutrient-rich hay in the autumn. There is a direct link between the amount of fat the cattle provide and the quality of the relationship developed with the cattle over their lifetime. The more valued the horse or cattle, the more fat its meat contains, and the tastier its fat is. The act of killing animals ensures that the circulation of fat and nutrients is not disrupted. When cattle or horses are slaughtered, it is said that they are not simply killed, but rather the grass, hay, and labor that the animals and humans have created together during their coexistence are being reclaimed. The slaughtered animal is asked not to hinder the rebirth of its species, even though its fat has been taken away.

103.
Digestive organs, along with the fat, play an important role in creating the exact taste that the Sakha seek when consuming the meat of cattle or horse raised in the alaas meadows. The connection with the hay and soil of the animal's habitat is significant. The animal's raw liver and abdominal fat contain the essence of the alaas and are consumed for its distinctive flavor. In fact, foal liver is consumed almost exclusively raw and frozen.

104.
The Sakha maintain a complex and intimate relationship with their environment, as evidenced by their use of milk, fat and offal, and the rituals surrounding the killing and exchange of animals. During these rituals, the Sakha give back to their environment and offer an invaluable life substance that is connected to the earth

and functions as a kind of soul. This exchange continues even after the animal has been killed. The body and soul of the animal are incorporated into the Sakha community, allowing a continuation of their previous coexistence in a different form.

105. It could also be said that the Sakha are not the privileged owners or masters of the subarctic cattle and horse economy but rather a part of it. Humans form an organic part of this circular system. Without humans, this cycle (where the alaas meadows gather life substances and then spread them out) would not exist, and it would be much more difficult to connect the various beings of the alaas, since only humans can maintain effective communication, with the help of fat and dairy food, with other animate entities. So the Sakha are not only the beneficiaries of subarctic adaptation but also an essential cog in the wheel. They (alongside all other living entities) inhabit an archipelago of livable realms (the alaas meadows), and consequently, the morality that governs human relationships extends in many ways to the non-human community. Long-term belief in ecological sustainability supports not the morality of farming but the morality of everyday life. This Sakha example, which presupposes a circular flow of fatty substances, soul-infused bodies, and embodied souls, cannot be considered a sheer farming system or an example of subarctic adaptation. Rather, it is a system of moral rules based on the idea that there is a communion of substances between man and his environment. These substances are not exclusively material, and the souls and spirits cannot be detached from them.

106. Several field studies focusing on kinship relations have pointed out similar systems of circular substance flow. A human being is created and maintained by permanently transmitted living substances. Substance is transmitted not only via procreation, as it can be obtained by being part of a circular flow, with humans being mere contributors to a highly elaborate system of exchanges. The transmission of *kopong*, for example, that can be translated as fat or grease among the Ku Waru in New Guinea, and which was described by Francesca Merlan and Alan Rumsey (Merlan–Rumsey 1991), provides a similar system; just like a flow of grease among the Maring in Edward LiPuma's study (LiPuma 1988). Many other examples have been mentioned in kinship studies examining the role of substance (Strathern 1988; Carsten 2004; Godelier 2011; Sahlins 2013).

107. This flow, and the circulation of fatty substance, can be maintained in many different forms, and through various channels. The socioeconomic changes inflicted on this system by the Russian and Soviet powers have caused radical alterations. Some of the animals (sables) became extinct for a while, some artificially introduced species have spread (muskrat), new European cattle breeds have been introduced (Holmogor, Simmentaler), and now climate change is causing rapid ecological transformation. If we understand the Sakha system to be an isolated indigenous system as opposed to the Western ideas, we miss one of the major points. Namely, the flow of substances in the subarctic archipelago of alaas meadows, which can be described as a deeply moral circular economy, has already proven its resilience and adaptability over the past almost four centuries, coexisting with different ontologies and legislative systems.

108. Anthropologists can provide a better understanding of how indigenous communities adapted to colonial aspirations while maintaining a moral and caring relationship with their land. Although it is possible to contrast indigenous land-based eco-

logy as a separate entity (Ksenofontov–Petrov 2024), it is essential to provide historically embedded local contexts. In Yakutia, the circulation of fat, as a vital substance of life, and Sakha moral economy is based on the cooperation of various living entities in an archipelago of alaas meadows in the limitless boreal forest. For sustainability, the land needs to heal humans, and humans need to heal the land in Yakutia (cf. Redvers 2020).

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