

Remote connections

Human entanglements with built and natural environments in the Arctic and elsewhere

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Remote areas are in constant contact with the world.

(Ardener 2012:528)

Introduction

It can be argued that anthropology's initial enchantment with the remote was a form of colonial othering. However, while criticizing the practices of putting certain groups and regions outside global history (see e.g. Fabian 1983), neglecting the role of the anthropologist in producing culture (see e.g. Clifford and Marcus 1986) and assuming an isomorphism of space, place and culture (see e.g. Gupta and Ferguson 1997) have become part of the anthropological mainstream in recent decades, remoteness has never received similar critical attention. Instead, anthropological locations gradually moved to sites that seemed to better capture processes of globalization and aspects of transnationalism (see e.g. Appadurai 1996; Hannerz 1996; Kearney 1995) than the proverbial Trobriands.

Of course, anthropologists never ceased to work in faraway places, although they did not necessarily call them remote. If you take Anna Tsing's *In the Realm of the Diamond Queen*, for example, you will look in vain for 'remoteness', but instead meet 'marginality'. As the author herself puts it:

this book is about the cultural and political construction of marginality. It is about the process in which people are marginalized as their perspectives are cast to the side or excluded. It is also about the ways in which people

actively engage their marginality by protesting, reinterpreting, and embellishing their exclusion.

(Tsing 1993:5)

Tsing worked in the 'out-of-the-way place' of Borneo, which was not only characterized as marginal but also defined as a 'periphery'. Likewise, her later book *Friction* (2005) deals with globalization and global connections under conditions of marginality, that is, of structural inequality.

The work of Anna Tsing serves here as one positive example of continued engagement with remote areas at times when the anthropological mainstream has turned increasingly to sites where urban, global and transnational situations and flows could be emphasized. The work of Tsing and others (see e.g. Li 2007), however, focuses on remote areas of the Global South, places where physical remoteness and economic disadvantage typically coincide. This one-sidedness started to change with the republication of Edwin Ardener's seminal article on 'remote areas' (Ardener 2012), in which the author highlights the positive and negative aspects of remoteness using examples from the Western Isles of Scotland. Ardener's article – and even more so a forum in the journal *HAU* entitled 'remote and edgy' (Harms *et al.* 2014) – make it clear that an anthropological engagement with the notion of 'remoteness' cannot be limited to spatial dimensions. Ardener had pointed out the event-richness or event-density of remote areas, which basically enabled individuality, singularity or even eccentricity (Ardener 2012:531–32), thereby highlighting certain social dynamics of remoteness, while the authors united in the *HAU* forum understood 'remoteness not so much as a place, but as a way of being' (Harms *et al.* 2014:361).

While some of the authors of the *HAU* forum went as far as to state that 'the remote can be detached from its geographical moorings' (Harms and Hussain 2014:362), I do not argue for detaching remoteness completely from its spatial determinants. It seems to me that spatial distance (from political and administrative centres) and difficult access have been important to individuals and groups throughout history, either to protect 'unlicensed' faith, hide activities that are prohibited by the centre, or to avoid higher property taxes, to name just a few possible reasons. On the other hand, the statement that 'remoteness is a relational category' (Shneiderman 2014:373) is both obvious and productive in trying to use the notion analytically.

The argument of this chapter begins with the observation that (spatially and socially) remote locations initially have been under-theorized as the unquestioned sites of anthropological endeavours, while recent attempts to bring anthropology into conversations about globalized and translocal situations and locations have left the supposedly remote by the wayside. It

proceeds by exploring the relevance of remote locations for the anthropological endeavour. In order to do so, I will introduce elements of my own research together with older and younger research traditions in Vienna and elsewhere in Austria. I will begin by situating my research regionally (the Arctic) and topically (hunter-gatherer studies), before presenting two case studies of 'remote connections': one from the field of environmental anthropology, dealing with climate change; and one from infrastructure studies, dealing with a railway in eastern Siberia. Together, these two case studies will enable us to address the question of what the benefits of studying remote regions are.

The old and the 'new Arctic'

When I started to get interested in social and cultural configurations of Arctic and subarctic regions in the 1980s, the 'circumpolar North' – although then recently pronounced as a book title (Armstrong *et al.* 1978) – was far from being a political reality in a world dominated by dichotomous Cold War thinking. Austrian anthropology's treatment of the 'Arctic' before 1980 had been largely limited to non-fieldwork-based studies of Siberian ethnology. All of these studies addressed theoretical interests of the Vienna School of anthropology in one way or the other. For example, during the 1930s the then department chair Wilhelm Koppers supervised three doctoral dissertations about Siberia (Schweitzer 2001:189). One of these dissertations was written by Fritz Flor (1905–1939), an illegal National Socialist who lost his job in the department because of his political views in 1934, but who had excellent job prospects after the *Anschluss* – though these were cut short when he died in a traffic accident in 1939 (Linimayr 1994:45–47). Flor was interested in the origins of animal domestication, an interest clearly stimulated by the Vienna School in general and by Wilhelm Schmidt in particular. His dissertation (Flor 1930a) and subsequent publications (Flor 1930b, 1930c) concluded that (Siberian) reindeer domestication preceded the domestication of the horse and of other animals (except the dog). This view, which has been considered untenable for more than half a century now, fits well with Schmidt's own position, who till the end of his days believed in the primacy of reindeer herding over other forms of pastoralism (see e.g. Schmidt 1951).

Culture-historical interests and the absence of fieldwork continued to characterize Austrian anthropological studies of Siberia and the North after the Second World War as well. Among them was Karl Jettmar (1918–2002), an anthropologist educated in Vienna who later held academic positions in Mainz and Heidelberg. Unlike some of his predecessors, he critically evaluated and used Soviet sources and kept professional contacts with specialists in Moscow, Novosibirsk and elsewhere (Schweitzer 2001:248–49). Between the end of the Second World War and the dissolution of the Soviet Union in

1991, only two doctoral dissertations about Siberia were defended in Vienna, both based on literature studies and ethnohistorical research (Liebmann 1968; Schweitzer 1990). While the difficulty of getting field access during the Soviet era might explain this small number, it should be pointed out that other parts of the Arctic, such as Alaska, were even less part of an Austrian research tradition. For example, to my knowledge the first anthropological master's thesis about Alaska defended in Vienna was in 1992 (Neumann 1992). Siberia, with its culture-historical connections throughout Eurasia, thus held a certain prominence among Austrian anthropologists throughout the twentieth century, despite ideological differences and travel restrictions. The relatively high rate of Russian-language competence in Austria – especially after the Second World War – might have played a role in that.

Thus, the social science of the Arctic as we know it today, as a comparative study of social and cultural processes across all Arctic countries and regions, is a fairly young, post-Cold War phenomenon (see e.g. Krupnik and Hovelsrud 2011). Being based in Fairbanks, Alaska, at the time, gave me the opportunity to participate in a number of broad pan-Arctic assessments, such as the Arctic Human Development Reports and the Arctic Social Indicators initiatives, which were based on the notion of a more or less unified Arctic that can be treated as one study area (e.g. Csonka and Schweitzer 2004; Schweitzer, Barnhardt *et al.* 2014; Schweitzer *et al.* 2010; Schweitzer, Sköld *et al.* 2014).

The situation has changed even more radically during the last decade, a period of supposedly new structural conditions summarized under the label the 'new Arctic'. While journalists and other lobbyists had combined the words 'Arctic' and 'new' from time to time, the genealogy of recent usage of 'new Arctic' only seems to lead back to 2008, when the Canadian political-scientist and journalist Rob Huebert spoke of the 'new Arctic age' to describe new geopolitical and economic constellations in the Arctic, which he considered a threat to Canada.¹ In 2009, the science writer Alun Anderson published *After the Ice*, which focused on climate change, resource extraction and geopolitics, and painted a rather grim picture of things to come. Ever since, there has been a continuous stream of scientific and popular publications (see e.g. Banerjee 2012; Byers 2010; Emmerson 2010; Evengård *et al.* 2015; Sale and Potapov 2010; Tishkov 2016) that focus broadly on changing conditions in the circumpolar North. While many of us Arctic social scientists have enjoyed the sudden prominence of a world region that – at least until the end of the Cold War – was considered of no or little relevance to the rest of the globe, the fact remains that this prominence rests on outside (economic and political)

1 Rob Huebert, 'Canada must prepare for the New Arctic Age', *Edmonton Journal*, 4 August 2008.

interests, as well as on an (outside) preoccupation with climate change, for which the Arctic can provide stark examples and dark warnings.

Recent years have also seen a significant increase in scholarship about indigenous knowledge in the Arctic (see e.g. Krupnik *et al.* 2010; Magga *et al.* 2009; Roué and Molnár 2017). While this is important in many respects – for example, in overcoming the colonial heritage of (Arctic) science, involving study subjects more actively in scholarly production and in order to ensure that local knowledge is properly represented – many of these projects rest on the politically understandable but empirically problematic distinction between indigenous and non-indigenous people. At the same time, colonial and postcolonial processes in the Arctic have led to a situation of social and cultural entanglements between initially distinct groups of people, a process that is much older than the supposedly ‘new’ Arctic.

Today, it seems to be important to look beyond the rhetoric of the ‘new’ Arctic. This is not supposed to be a call for a return to older forms of representation but instead an appeal to create conceptual tools that enable us to comprehend the complexities of Arctic lifeways, indigenous and non-indigenous alike. These lifeways include negotiations with oil companies, the ‘patriotic’ mistrust of foreigners and the possession of electronic gadgets, but they also include subsistence practices, poverty and self-reliance. Investigating the ‘new’ Arctic means paying as much attention to the ‘old’ as to what seems novel. Life in the Arctic means facing the threats of climate change, but climate change is not the common denominator of what these lives look like; they are as much determined by outside social, cultural and technological trends as by local developments and ontologies. In recent years, a number of master’s and doctoral projects focused on a broad range of topics in Siberia and Alaska have been completed (e.g. Adams 2017; Elmecker 2019; Saxinger 2013, 2016; Zettl 2016), and many more – including ones dealing with Svalbard and northern Canada – are underway.

Hunter-gatherer studies

My initial interest in Siberia was not due to any kind of infatuation with Arctic studies but grew out of a theoretical interest in hunter-gatherer studies. My early graduate student years at the University of Vienna were dominated by a fascination with the ‘new’ hunter-gatherer studies that appeared during the 1970s and were inspired by the misleadingly entitled conference and edited volume *Man the Hunter* (Lee and DeVore 1968). *Man the Hunter* led to a reorientation of hunter-gatherer studies by using detailed and long-term fieldwork to overcome long-held assumptions such as the ‘patrilocal band’. This new approach focused on ecological adaptations, forms of reciprocity and sharing, flexible social organization and land-use patterns typically not

based on exclusive ownership concepts. After I had realized that Siberian groups were entirely absent from these new hunter-gatherer studies,² I focused my own doctoral project (Schweitzer 1990), combining the rich (Russian-language) ethnography on Siberia with approaches from Western hunter-gatherer research. One approach absent from the Soviet discourse was a feminist perspective on gender dimensions among hunters and gatherers, as practised by the US-based Marxist anthropologist Eleanor Leacock (e.g. Leacock 1978, 1981). These and other inspirations led a group of Vienna-based graduate students under the leadership of Andre Gingrich to a book project about gender relations in non-industrial societies (AEW 1989).

As I have argued elsewhere (Schweitzer 2004:69), a now forgotten chapter in the history of hunter-gatherer studies between the 1880s and the 1930s is defined by a number of German-language texts. Among the authors of these texts was Wilhelm Schmidt, a German priest and founder of the so-called Vienna School of anthropology. His particular brand of Catholic universal history was – notwithstanding its fiery anti-evolutionism – based on a cultural sequence, starting out with the so-called *Urkultur* (or ‘primeval culture’). Given that this supposed primeval cultural circle also included hunting-and-gathering societies, it is not a big surprise that some of Schmidt’s students and followers – such as Martin Gusinde and Paul Schebesta – carried out extensive fieldwork among foragers.

Given that it has been more than half a century since the Vienna School lost its scholarly credibility in Austria and beyond, it has not been easy to provide a neutral assessment of their contributions to hunter-gatherer studies. One of the few who have been able to do so is Helmut Lukas, a researcher at the Austrian Academy of Sciences and lecturer at the University of Vienna.³ Lukas has not only worked on the history of Austrian hunter-gatherer studies but also, together with his doctoral student Khaled Hakami, conducted fieldwork among the Maniq, nomadic hunter-gatherers in southern Thailand, and among the Anak Dalam, foragers and shifting cultivators in Indonesia. The Maniq are among the last fully nomadic non-horticultural hunter-gatherers, and the research by Lukas (Kricheff and Lukas 2015; Lukas 2004) confirms the egalitarian hunter-gatherer model proposed by James Woodburn (1980, 1982), Richard Lee (1990) and others.

The most recent major event related to hunter-gatherer studies on Austrian soil was the 11th Conference on Hunting and Gathering Societies (CHAGS 11) in Vienna in September 2015. Despite the fact that hunter-gatherer studies have not been at the centre of contemporary debates in

2 See Schweitzer (2000) for a retrospective discussion of this circumstance.

3 For his assessment of Schebesta, see Lukas (1998).

social anthropology for a number of years, the conference attracted 450 participants – anthropologists, as well as representatives from neighbouring disciplines – from all continents and thirty-six countries. The conference theme, ‘Refocusing Hunter-Gatherer Studies’, was a call to synthesize the results of fifty years of modern hunter-gatherer research, as well as an attempt to bring hunter-gatherer studies back to the centre of anthropology. While contemporary nomadic hunter-gatherers face even more outside pressures today than they have for millennia, there is a growing number of sedentary former hunter-gatherers and those in mixed economies with a significant cash income (see Seidl and Saxinger 2016). My own interest in hunter-gatherer studies is focused on such societies, for example in Alaska, where a continued significance of subsistence activities is paired with the presence of advanced technology and state-sponsored infrastructure, providing convenience and entrapments at the same time.

My own fieldwork in Siberia and Alaska has been predominantly with hunter-gatherers or groups that until recently sustained themselves primarily through subsistence activities based on hunting, fishing and gathering. One such group are the residents of Shishmaref, Alaska, who consider themselves to be part of the Inupiaq nation within the larger Inuit world. This community faces a specific environmental threat, namely coastal erosion that endangers the physical existence of the community. This and other communities will be the subject of the next two sections of this chapter.

Environmental anthropology and climate change

Receiving my anthropological education in Vienna during the 1980s meant that neither ecological nor environmental anthropology approaches were particularly prominent in how I positioned myself within the discipline. This is despite the fact that my supervisor, Walter Dostal, had incorporated elements of cultural ecology – in the form of a so-called socio-ecological interaction system (e.g. Dostal 1974) – into his understanding of social evolution. While the anthropological mainstream in Europe seemed to move towards materialist and Marxist approaches during the 1970s and 1980s, ecological dimensions of social and cultural constellations were rarely central features. When I became an assistant professor at the University of Alaska–Fairbanks in the early 1990s – and thus part of US American anthropology – I quickly acquired the reputation of being a typical European anthropologist, largely ignorant of human–environmental relations, while many of my American colleagues practised various forms of what I considered ecological reductionism. At the same time, European anthropologists – ranging from Tim Ingold and Gísli Pálsson to Philippe Descola and Alf Hornborg (see e.g. Descola and Pálsson 1996; Hornborg and Pálsson 2000; Ingold 1986)

– started incorporating human–environmental relations as well as nature ideologies into their research agendas. In Austria, similar developments led to the publication of an edited volume investigating the relationships between world views and the natural environment (see Gingrich and Mader 2002), an ontological perspective in today's vocabulary.

In the meantime, I had started to collaborate with natural scientists in Alaska. This was not so much driven by an attempt to placate my anthropology colleagues but by an intellectual curiosity towards interdisciplinarity and the recognition that such research was well funded. One of the results of these collaborations and interactions was an interdisciplinary grant concerned with the intersection between climate change, water resources and humans in the Arctic, which ran from 2003 to 2007. An environmental engineer served as the principal investigator, while a hydrologist, a biologist and an anthropologist (myself) were co-principal investigators. The project was located on the Seward Peninsula, Alaska, and focused on climate-induced changes in the freshwater cycle of the region. The anthropological part of the project attempted to create 'ethnographies of freshwater use' without pre-empting any attribution of processes to climate change (Marino and Schweitzer 2009, 2016).

The emphasis of our studies was on the effects of changing freshwater regimes on resource use and access to resources. It was obvious that subsistence activities were highly dependent on seasonal precipitation, among other factors. Given the high dependency on river levels (summer) and the amount of snow cover (winter) for travel purposes in pursuit of subsistence activities, freshwater not only influenced resource availability but also access to resources. We learned about the specific local and regional phenomenon of expanding beaver populations (moving north) contaminating traditional water sources.

Elizabeth Marino – with whom I had worked on the 'freshwater grant' mentioned above, and subsequently on a collocation cultural impact assessment of what it would mean to relocate the residents of Shishmaref to Nome or Kotzebue (Schweitzer and Marino 2005) – has devoted her doctoral research to studying a relocation that is yet to happen. After completing her dissertation (see Marino 2012), she has gone on to publish a 'climate ethnography' on Shishmaref (based on her dissertation) more recently (Marino 2015). This climate ethnography contains a short chapter on the colonial history of Shishmaref (ibid.:45–60), which contains the information relevant for us here. The barrier island on which the community is located today has been used as a seasonal settlement during the spring hunt for centuries, and contemporary elders maintain that their predecessors always knew that the island was not appropriate for permanent residence. It was only in the early

twentieth century, when the US government established a post office (in 1901) and Bureau of Indian Affairs school (in 1906) that the infrastructural roots of today's vulnerabilities were established. By 1930, a Lutheran mission had been founded, and by 1950 the process of making migratory family groups sedentary – which was started in 1901 – was completed. While the first shoreline stabilization project dates back to the 1940s, major flooding and erosion in 1973 led to the first discussions about a possible relocation to the mainland. By 2011, over US\$10 million had been spent on building sea walls and other erosion control measures, with a projected total (lifetime) cost of erosion control estimated at US\$260 million.

At this point, it seems relevant to look at how the vulnerability (to erosion) that Shishmaref is facing today came about. This means taking a critical look at colonial settlement history. The timeline presented above makes it clear that the state made people sedentary in a vulnerable place, the same people who are now being criticized for living there. This brings to the fore general questions of equity and justice regarding climate change. It is generally known that environmental disasters do not affect everyone in the same way: there are pronounced inequalities depending on which part of the world you live in, your socio-economic status and your gender, race and ethnic identity. Typically, the poorest suffer most from disasters.

It was thus both surprising and understandable when, in December 2005, Sheila Watt-Cloutier, the then international chair of the Inuit Circumpolar Council, together with elders from Inuit communities in Canada and Alaska, filed a petition with the Inter-American Commission on Human Rights alleging that the emission of greenhouse gases from the United States violated the cultural and environmental rights of the Inuit. While the petition did not result in a formal decision by the commission, it led to a broader hearing on the linkages between climate change and human rights (Osofsky 2006). Even more importantly, it brought much scholarly and media attention to the 'Inuit case' (Borràs 2012) regarding climate change.

In 2008, the Alaskan Inuit community of Kivalina (north of Shishmaref) filed a legal claim in the United States District Court for the Northern District of California against twenty-four oil, electricity and coal companies, alleging that the defendants are significant contributors of greenhouse gas emissions, exacerbating global warming and the erosion in Kivalina, constituting a public nuisance under federal and state common law. The suit is seeking damages of up to \$400 million, the estimated cost of relocating the village. The case was dismissed by the district court in 2009, but is expected to go all the way to the US Supreme Court (Borràs 2012). If nothing else, the symbolic value of the court case has been tremendous.

At this point, let me provide a brief overview of the trajectory of historical and anthropological interest in climate change.⁴ The idea is not to provide a full-fledged intellectual history here but to sketch some of the paths leading to the current high level of anthropological activity and engagement with climate-related phenomena.

Neighbouring disciplines, such as environmental history and archaeology, have a long track record of looking at the relationship between climate dynamics and social dynamics. For example, the American archaeologist Brian Fagan, a gifted author of best-selling books, has produced a number of publications addressing climate change in one way or the other (Fagan 2000, 2008). One of the most relevant contributors in that respect certainly has been the French historian Emmanuel Le Roy Ladurie (1967, 1971, 1988). Le Roy Ladurie looks at European history during the second millennium AD, and poses the fundamental question of what is due to climate change and what is due to economic (or other) change. He concludes that two distinct histories are needed: a history of climate and a history of human–environment interactions.

The latter could easily be connected to climate-change processes. Other local observations of environmental changes included statements that weather patterns and seasonal changes had become less predictable. Increasing precipitation during the summer posed problems for drying fish, the predominant method of preserving the harvested resource. The lack of snow in winter, on the other hand, not only made it more difficult to travel but also affected the growth of berries and other gatherable resources. The draining of tundra ponds had effects on the availability of migratory birds, an important hunting resource. While some of these changes were perceived positively, the majority of people complained about them because they ran afoul of personal preferences and altered the seasonal cycle of environmental change. During these investigations, we also began to understand that the notion of ‘climate change’ had a powerful presence in conversations, even without being spelled out. That is, it became clear that ‘climate change’ was as much a powerful social phenomenon as a ‘natural’ one.

Back in Vienna, in 2014 we initiated EnMoTe (Environments, Mobilities, Technologies), a loosely organized interest group focused on a wide range of human–environment relations, including built environments and infrastructure, as well as on the flows and movements of human and non-human beings, things and ideas. It has become evident that there is growing interest in the environmental aspect of this agenda, ranging from a variety of

4 See e.g. Baer and Singer (2014: 23–38) and Hastrup (2016) for alternative and/or complementary genealogies of these developments.

master's theses on climate change (e.g. Neulinger 2015; van der Staak 2019) to critical studies on the notion of sustainability (e.g. Petrov *et al.* 2016, 2017; Ringel 2014) to environmental change in the mountain ranges of Europe (e.g. Meyer 2015).

Infrastructure studies and the built environment

The climate-change studies mentioned above, especially those related to relocation issues, make it amply clear that (modern) infrastructure had become a defining element in many small-scale hunter-gatherer societies of the Global North. In a way, state-sponsored infrastructure projects have become 'soft tools' of assimilation policies. At the same time, we have started to realize that 'remoteness' has created special conditions for infrastructure studies. For example, transportation infrastructure to and from 'remote areas' is by definition limited, and thus enables more focused investigations than in other parts of the world.

In 2015, we started a new project funded by the Austrian Science Fund and entitled 'Configurations of Remoteness: Entanglements of Humans and Transportation Infrastructure in the Baykal–Amur Mainline (BAM) Region'. Transportation to, through and from the circumpolar North has received a lot of attention in recent years. This is primarily due to climate change and increased demand for northern resources. There are many other forms of Arctic transportation networks – from rivers to roads to aviation corridors – but we focus on railway lines as our primary interest. Railway transportation is physically tied to the land (and its residents), and trains can carry goods and/or people. In contrast, Arctic marine transport, which is increasing due to shrinking sea-ice coverage, has more limited impacts, typically concentrated in port locations. The BAM and its branch lines are most attractive for us because of their fairly recent construction (parts are still being completed) and the crucial role they were supposed to play in Soviet futures (and – to a lesser extent – in post-Soviet ones). The case of the BAM clearly shows the social efficacy of (transportation) infrastructure in remote northern regions with sparse population and 'traditional' mobility regimes. The results published to date point to the specifics of how individuals and communities deal with the ebb and flow of public interest and state investment, especially if these actors' place-making efforts cannot be seen independently from the state's role (e.g. Kuklina *et al.* 2019; Povoroznyuk 2019, 2020; Schweitzer *et al.* 2017; Schweitzer and Povoroznyuk 2019, 2020; Wentzel 2020).⁵

⁵ The project 'Configurations of Remoteness: Entanglements of Humans and Transportation Infrastructure in the Region of Baikal Amur Mainline' (CoRe) was funded by the Austrian Science Fund (FWF), P27625 Einzelprojekte, and was active

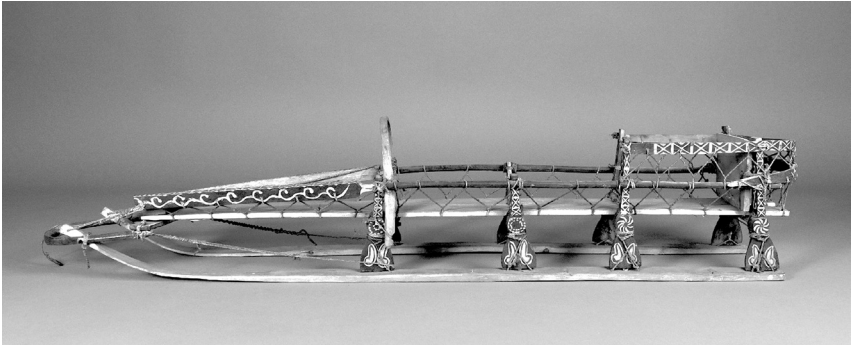


Figure 1 Model of a dog sled acquired by the predecessor organization of the Weltmuseum Wien in 1894 from Julius Iwanowitsch Bryner (1849–1920), the grandfather of actor Yul Brynner. Julius Bryner was a merchant originally from Savoy, who settled in the Russian Far East in the 1870s after spending some years in Japan (Bauer 2013). The object reminds us of ingenious local transportation technologies that have played and continue to play an important role for mobility in the subarctic landscapes of eastern Siberia and the Russian Far East. The collection history of the object points to colonial connections that have linked remote regions and economic/political centers for centuries. The sled model is made of wood and was collected in the settlement Okhotsk on the Pacific Ocean coast. L: 81 cm, W: 15 cm, H: 14 cm; Bryner collection, Weltmuseum Wien, VO_52160 (Weltmuseum Wien @ KHM).

It took the social sciences quite a while before they started to engage with infrastructure in a serious way (Edwards 2003; Star 1999; Star and Ruhleder 1996). While anthropology was a latecomer even among social science disciplines, there has practically been an explosion of literature of the anthropological kind on infrastructure in recent years (see e.g. Anand 2015, 2017; Harvey and Knox 2012; Harvey *et al.* 2016; Howe *et al.* 2016; Humphrey 2005; Larkin 2013; von Schnitzler 2013, 2015, 2016). Following Thomas Hughes, we use the inclusive notion of ‘sociotechnical systems’ (Hughes 1983:465), and thereby reject any form of technological (or infrastructural) determinism. At the same time, we acknowledge the relevance of what Mizuko Ito and Daisuke Okabe have called a ‘technosocial situation’ (Ito and Okabe 2005:259) as a

from July 2015 to January 2021. During the final stages of completing this chapter, additional support came from ‘Building Arctic Futures: Transport Infrastructures and Sustainable Northern Communities’ (INFRANORTH), a research project funded by the European Research Council (PROJECT-ID: 885646) and active from January 2021 to December 2025.

means of extending Goffman's situational analysis to cases in which physical space and social interaction are decoupled. Michael Fisch speaks of the 'techno-social environment of the everyday' (Fisch 2018:5) and argues that the production of the social is inseparable from technological conditions.

Different kinds of infrastructure, such as transportation infrastructure, information infrastructure or energy and water supply, have a lot in common – for example, they might at first seem 'boring' or 'unexciting' (Star 1999:380) – but they are intrinsically interesting since they are 'support-systems that make it possible (or impossible) for other things to exist and they are a way of making up a particular social world' (Ferguson 2012:559). Infrastructure is embedded in 'other structures, social arrangements, and technologies' (Star 1999:381). It consists of 'built networks that facilitate the flow of goods, people, or ideas and allow for their exchange over space' (Larkin 2013:328).

For us, transportation infrastructure is particularly important. It has the potential to 'connect places and ... to draw together otherwise disparate spaces and populations' (Harvey 2012:79). Roads are not just potential physical connections, but also 'represent a web of social relations, making remote places close and familiar' (Argounova-Low 2012:203). At the same time, roads can disconnect and 'too often they entrench the violent exclusions of established political and material orders' (Dalakoglou and Harvey 2012:460). Overall, the anthropological discussion of transportation infrastructure seems to have been dominated by the 'road' (see e.g. Beck *et al.* 2017; Dalakoglou 2017; Harvey and Knox 2015). This is understandable, as road building, maintenance and repair are fairly easy to capture ethnographically, and seldom subject to heightened security or secrecy.

The imagination of infrastructure has been recently debated by several authors (Dalakoglou and Harvey 2012; Harvey and Knox 2012; Larkin 2013), who have addressed such questions as how infrastructure 'operates on the level of fantasy and desire' (Larkin 2013:333), how roads 'manage to promise social transformation' (Harvey and Knox 2012:522) and how they 'dazzle with the possibilities they hold' (*ibid.*:534).

The nexus between modernization, future policies and infrastructures has lately been investigated by several authors (Çelik 2016; Larkin 2013; Masquelier 2002). Brian Larkin, for example, argues that infrastructure is strongly politically instrumentalized to 'represent the possibility of being modern, of having a future, or the foreclosing of that possibility' (Larkin 2013:333). Stephen Collier (2011) draws on an extensive analysis of the political and governmental structures behind infrastructure per se, its planning and conceptualization. In several works, Penelope Harvey investigates how infrastructure operates as materialized aspects of states, of their politics, designs for planning and the future that is present in people's lives (Harvey

2005, 2012), and what role roads play in the question of 'how state-space is imagined and produced' (Harvey 2012:78). Larkin states that infrastructure is the 'means by which a state proffers these representations to its citizens and asks them to take those representations as social facts' (Larkin 2013:335).

Despite the recent increase in infrastructure studies, we believe that there is room for further development in the field, namely by exploring the subject matter through a processual approach that acknowledges both its affective and material dimensions. Likewise, while there has been an increasing emphasis on the 'politics of infrastructure', an 'ecology of (infrastructure) things' (Bennett 2010) remains a desideratum.

In September 2016 we organized and held the so-called Vienna Arctic Summer School (VASS). The basic idea of VASS was to bring together doctoral students in the social science working on the Arctic – from a variety of disciplinary backgrounds and from all over the world – to Vienna in order to confront them with international state-of-the-art social science approaches and methods applied outside the Arctic. VASS also made use of the fact that parts of Austria are located in Alpine environments, which demonstrate structural similarities with the Arctic. This opportunity was realized through a fieldtrip to Salzburg and Tyrol, showcasing a region that has many similarities with the Arctic in terms of environmental, infrastructural and mobility challenges, but is also embedded in a quite different geographic and socio-cultural setting. Climate change and the environmental, social, cultural and economic impacts of tourism as well as of mining and resource extraction were some of the themes that were explored. At the same time, we looked at structural similarities between Alpine and Arctic environments regarding 'remoteness', such as low population density, outmigration, closeness to nature and tourist interest. Likewise, climate change emerged as another process that invited comparisons between Arctic and Alpine settings, both of which are heavily impacted by the overheating of our planet (Eriksen 2016).

One of the stops during VASS was in Mandarfen in the Tyrolean Pitztal, where my colleague Herta Nöbauer has been conducting research for several years (Nöbauer 2017, 2018, in press). She has been engaged in an 'ethnography of snow', detailing vertical globalization in the Austrian Alps. A particular interest of hers is concerns the practice of artificial snow-making, which is becoming more and more a necessity for maintaining skiing activities under conditions of climate change. While the first technical steps towards artificial snow-making in the Austrian Alps reach back into the 1930s, its current pinnacle was reached with the installation of a so-called 'all-weather snowmaker' in 2009 (Nöbauer 2018, in press). Produced in Israel, and used during the Winter Olympics in Sochi, it is a symbol of the global socio-

technical systems that guarantee that we can experience ‘nature’ in a form close to our expectations, namely that of wintery white mountain slopes.

Remote connections: summary and conclusions

The ‘all-weather snowmaker’ is a classic example of how the ‘cultural biography of things’ (Kopytoff 1986) connects distant regions of the globe, whether remote or not (one of the inventors of the snowmaker spent several years in a north Siberian gulag before emigrating to Israel). Our ongoing studies along the BAM, the railroad project in eastern Siberia discussed earlier, point towards temporal variability regarding these remote connections: while the railroad initially planned to access a remote resource periphery, its realization was incomplete and has created a ‘shattered network’ of communities either still hoping to become less remote or self-consciously insisting on its benefits. After all, ‘remote connections’ are as much about connections within and beyond locations designated as remote, as well as about disconnections.⁶ A good example of this are so-called ‘infrastructure failures,’ such as the frozen water and heating pipes in Magadan in 1993 (Karaseva 2016), which continue to be marks of state failure *and* of remoteness in the emotionally charged memory-scapes of the region. In the end, ‘remote connections’ remain a programmatic set of questions, thereby providing one line of enquiry that EnMoTe and other Austrian anthropologists might pursue over years to come.

What might an anthropology engaged with climate change contribute to a perspective that goes beyond a human-centred one? First of all, by conceptualizing climate change as a ‘meshwork’ (Ingold 2011:xi) of the social and natural, we need to go beyond (seemingly) comfortable notions of social constructedness. No matter whether we engage Ingoldian notions or actor–network theory approaches, a multitude of actants or lines needs to be acknowledged. Climate-change discourses display a pronounced agency of large, iconic animal species. Using an Arctic example, in line with the regional orientation of this chapter, images and stories about drowning polar bears come to mind. The built environment, including infrastructure, provides another example of non-human agency in this respect. Thawing permafrost in northern latitudes is one of the triggers enabling elements of the built environment – such as buildings and roads – to play a critical role in determining human futures in the Arctic. The currently much-used notion of the Anthropocene (Crutzen and Stoermer 2000), which – at first glance – seems antithetical to going beyond human-centredness, is also relevant in this

6 It might be useful here to recall Strathern’s arguments about the necessary partiality of connections (Strathern 2004).

context, namely by putting human agency in the context of planetary history, thereby making *anthropos* merely one player among many.

So, in the end, what could anthropology 'gain' from climate change? On the one hand, the attention commanded by climate change enables the emergence of a renewed environmental anthropology (Kopnina and Shoreman-Ouimet 2011, 2013) that addresses the all-encompassing entanglements between an overheating planet and its human inhabitants, while avoiding the kind of 'climate reductionism' that has been rampant lately (Hulme 2011). On the other hand, anthropology offers a window on what people 'do' with climate change, how they position themselves vis-à-vis 'climate facts', or choose to ignore them.

Finally, what about the 'human entanglements with built and natural environments' alluded to in the title? We have heard about several empirical examples but our vision is to move beyond that division – the built versus the natural – on several levels. First, where Thomas Hughes (2004) was still arguing for the primacy of what he calls the 'human-built world', we have come to understand that behind the façade of 'human-built' are many non-human dimensions, which call for the incorporation of more-than-human and actor–network theory approaches. Second, if we understand the environments in which we dwell (natural, built, social and so on) as co-created by a variety of actors and forces, we also need to go beyond the limits of social constructivism (and, of course, of positivism) to fully comprehend a world which is only partially under human control.⁷ Finally, the Arctic and other remote areas of the globe are ideal – but in no way the only – testing grounds for such integrated approaches. We do not want to propose 'remoteness' as a privileged or mandatory site of anthropological reasoning. Instead, the time seems ripe for a critical assessment of the 'affordances' (Gibson 1979) of remote areas near and afar for thinking through certain entanglements of humans with their built and natural environments. While the remote is undoubtedly connected to the world, as Ardener suggested, the paucity and singularity of its human and non-human connections enables unique opportunities for novel theoretical and empirical investigations.

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7 See e.g. Roy Bhaskar's critical realism as one potential way forward (Bhaskar 2008).

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