

Social Science Perspectives on Arctic Infrastructure

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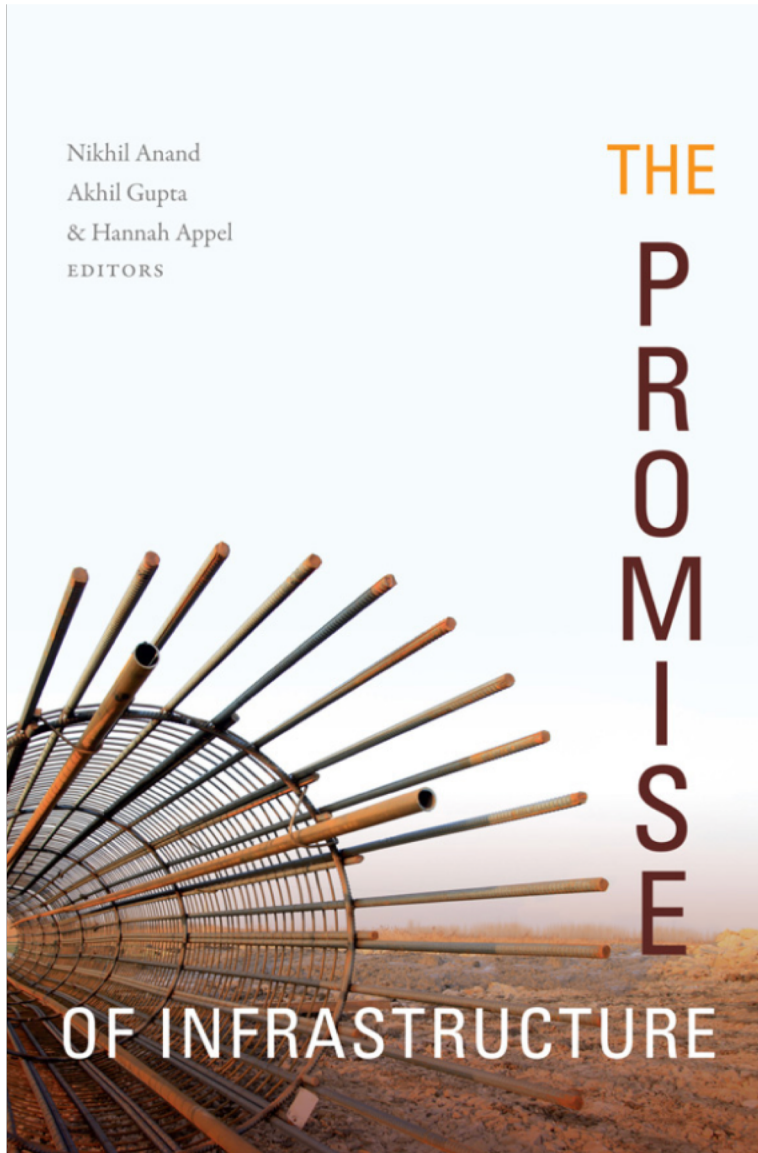
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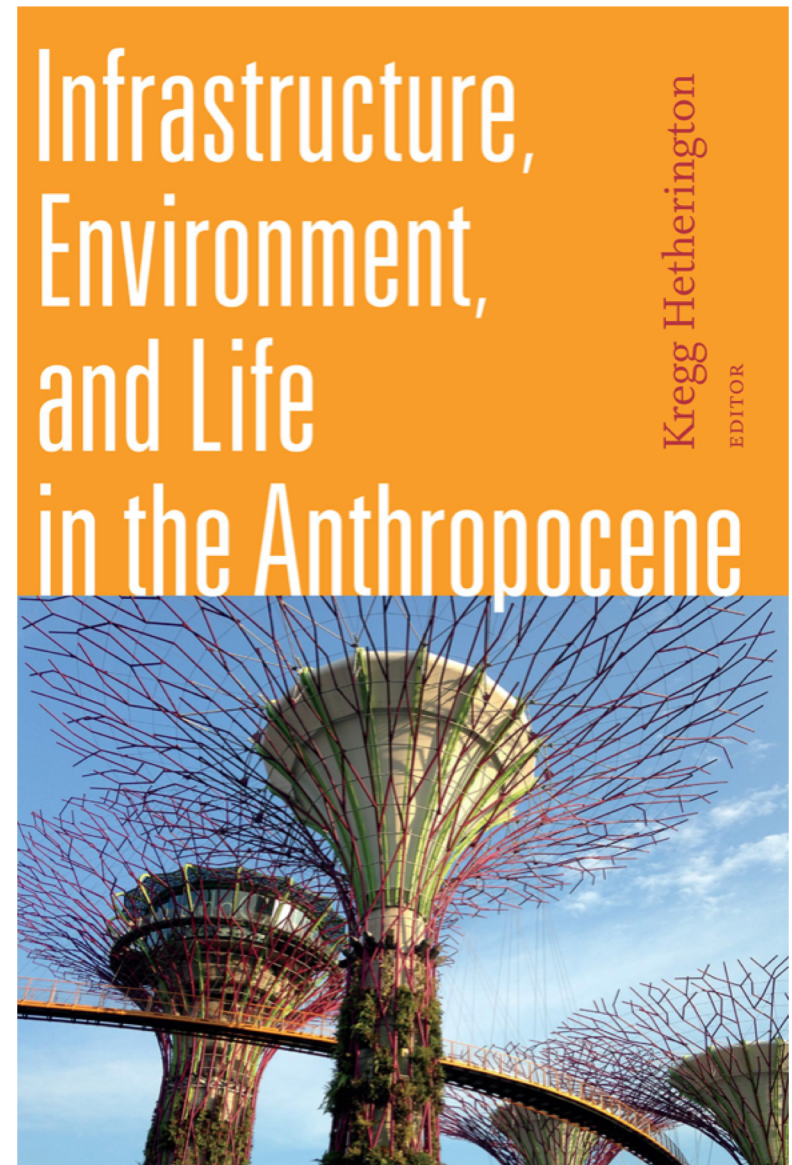
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The Next 15 Minutes

- The Recent Boom in Social Science Studies of Infrastructure
- Some Empirical Examples of Infrastructure Studies from Our Team
- Where Can RATIC and (Qualitative) Social Science Studies of Infrastructure Meet?



Anand, Nikhil, Akhil Gupta, and Hannah Appel, eds.
2018 *The Promise of Infrastructure*. Durham,
NC: Duke University Press.



Hetherington, Kregg, ed.
2019 *Infrastructure, Environment, and Life in the
Anthropocene*. Durham: Duke University Press.

Nature as infrastructure: Making and managing the Panama Canal watershed

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Abstract

The Panama Canal requires an enormous volume of fresh water to function. A staggering 52 million gallons are released into the Atlantic and Pacific oceans with each of the 35–45 ships that transit the canal daily. The water that facilitates interoceanic transportation and global connection falls as rain across the watershed surrounding the canal and is managed by an extensive system of locks, dams, and hydrographic stations. These technologies – which correspond with the popular understanding of infrastructure as hardware – were largely constructed during the early 20th century. Since the late 1970s, however, administrators and other concerned actors have responded to actual and potential water scarcity within the canal system by developing a managerial approach that integrates engineered technologies and new techniques of land-use planning and environmental regulation across the watershed. Through this process, techno-politics and environmental politics have become increasingly inextricable in the transit zone. Whereas canal administrators previously emphasized the control of water in its liquid state, watershed management emerged as an attempt to manipulate water flows through the legal protection of forests and restriction of agriculture. As forested landscapes have been assigned new infrastructural functions (water storage and regulation), *campesino* farmers have been charged with a new responsibility (forest conservation) often at odds with their established agricultural practices. Consequently, I bring together scholarship on infrastructure in science and technology studies and political ecology in anthropology and geography to examine why, how, and to what effect landscapes around the canal have been transformed from agricultural frontier to managed watershed. I suggest that the concept of infrastructure is a useful theoretical tool and empirical topic for analyzing the politics of environmental service provision. By paying attention to the contingent history of engineering decisions and the politics embedded in the changing socio-technical system that delivers water to the canal, we can better understand the distributional politics of environmental service provision in Panama today.

Keywords

environment, governance, infrastructure, political ecology, technology, water management

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Article

Toward a political ecology of infrastructure standards: Or, how to think about ships, waterways, sediment, and communities together

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Abstract

Scholars have shown that technical standards play an important role in building global transportation and communication infrastructures, but the environmental standardization efforts associated with infrastructures have received far less attention. Combining scholarship from transportation geography, political ecology, and science and technology studies, we show how global connection is made, maintained, and contested through environmental management practices pegged to infrastructure standards. The Panama Canal expansion, completed in 2016, is a revealing illustration. The expansion has established the New Panamax shipping standard: the maximum allowable dimensions for vessels passing through the canal's massive new locks. The standard has become a benchmark for port modernization and channel deepening projects along the Atlantic and Gulf Coasts of the United States and beyond. Because the maximum underwater depth, or draft, of ships transiting the new locks is much deeper than before (50 rather than 39.5 feet), geographically dispersed governments, firms, and port authorities have scrambled to reach that standard in hopes of attracting New Panamax ships and associated revenue streams. As this case shows, global transportation depends on the expensive, ecologically destabilizing, and often-contested practices of dredging and disposing of large volumes of sediment and organic matter. By showing how shipping networks and situated politics converge around infrastructure standards, we foreground the uneven environmental burdens and benefits of transportation.

Keywords

Transportation, infrastructure, political ecology, shipping, water

Infrastructure as a Social Science Topic

“Infrastructures mediate human interaction and shape social organization.” (Niewöhner 2015: 119)

“... composed of practices of visiting, drinking tea, and greeting, investments into sociality that can pay off by creating a web of connections that can be relied on for all sorts of social, economic, and political work.” (Larkin 2013: 338-39)

“Discussing ‘infrastructure’ as a noun [...] suppresses the variety of material and non-material components of which it consists, the efforts required for their integration, and the ongoing work required to maintain it” (Bossen and Markussen 2010)

The CoRe Project

Configurations of “Remoteness”: Entanglements of Humans and Transportation Infrastructure in the Baikal-Amur Mainline (BAM) Region (FWF, 2015-2020)



A photograph of a train station platform. A white train with a red stripe is on the left. People are waiting on the platform. A pedestrian bridge is in the background.

**Component A - Living along the BAM:
Social Dynamics and Identity Politics**

**Component X – The View from
Above: Patterns of Sociality
and Mobility**

**Component B – Mobilities off the BAM
under Conditions of Oil Extraction**

**Component C – New Railroad Infrastructure:
Waiting for the Trains**

Main research question: Given the techno-social entanglements of people and infrastructure, how do changes in remote transportation systems affect human sociality and mobility?

BAM and Soviet Modernization

- Soviet “hypermodernism” (Scott 1999)
- “Modernization myth” (Ferguson 2009)
- Promise of infrastructure (Harvey and Knox 2012)
- Infrastructural violence toward indigenous peoples (Rogers and O’Neil 2012)



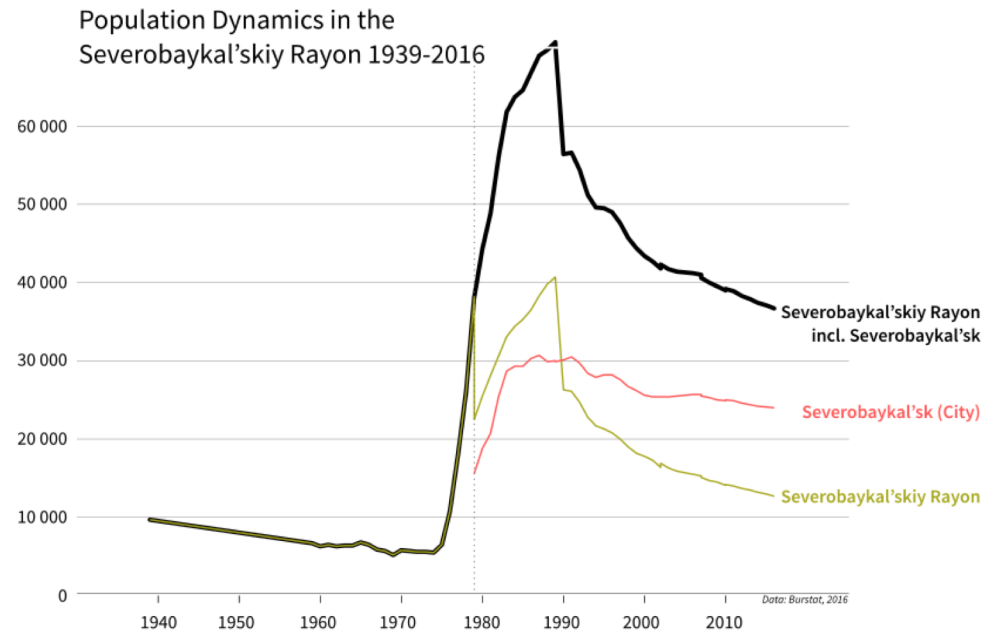
Indigenous Communities

- Evenki and other Tungusic minorities
- 1-4% of population
- Indigenous villages
- >10% - nomadic
- Public sector, reindeer herding, hunting
- Fragmented



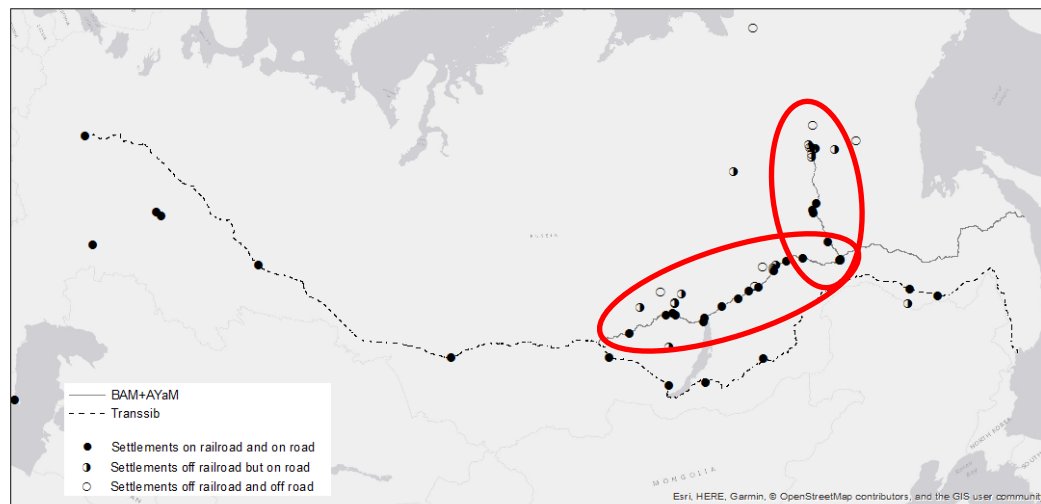
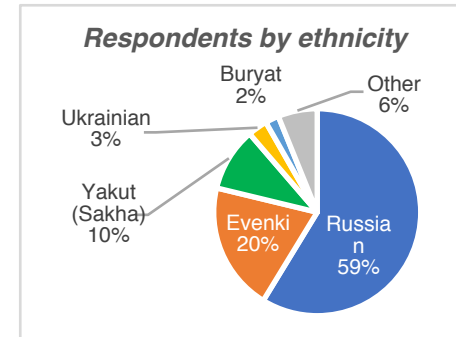
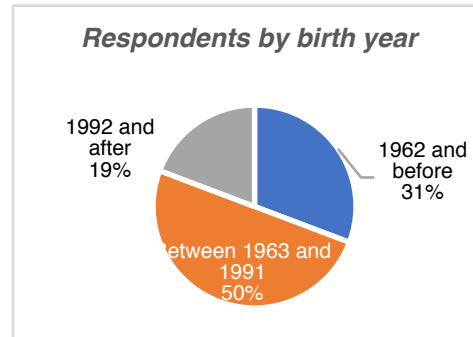
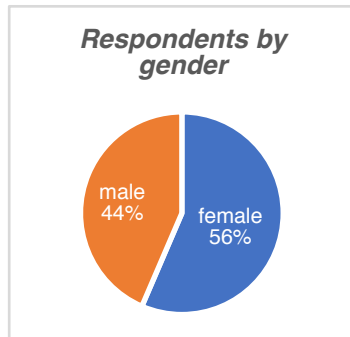
Social Change

- Population inflow
- Assimilation and social gap
- Environmental impact
- Transformation of subsistence and mobility



Mobility Survey

- Executed between 2016 and 2018 using tablets
- 475 valid responses



Mobility Survey Results

- Overall, Russians are more satisfied with their mobility levels than Evenki
- Women of all ethnicities want to travel more than men
- Most respondents are not satisfied with their access to transportation infrastructure
- Most respondents want a more developed transportation infrastructure
- Trains are mostly used for medium- to long-distance travel, while cars are preferred for short distances

In limbo between state and corporate responsibility -

Transport infrastructure in the oil village Verkhnemarkovo, Irkutskaya Oblast in Siberia

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In what ways are the people of Verkhnemarkovo impacted in their everyday lives and level of mobility by the conditions of transport infrastructure?

- Absence of good/decent roads
- Feeling neglected
- Remembering Soviet care for (transport) infrastructure: longing for ideal situation

What is the relationship between state and private responsibilities?

- There are expectations of corporate support but the regional oil company is not stepping in for state responsibilities
- Russia's state paternalism fails in the context of everyday mobilities and infrastructural demands of people



Right to Remoteness?

We have a village that is accessible exclusively by train... But they don't want to build a bridge, because the bridge brings cars, Russian hunters and a supply of vodka and other dangerous substances. When the issue of the bridge was discussed and the money for its construction was allocated, they decided not to build it. ... good for them! They have a very special environment there! [Interview, Tynda, 2013]

Schweitzer, Peter and Olga Povoroznyuk. 2019. "A right to remoteness? A missing bridge and articulations of indigeneity along an East Siberian railroad." *Social Anthropology* 27(3).

Some CoRe Conclusions

- The BAM was/is an important social phenomenon, while it never was able to fulfill its mobility expectations
- Throughout the region, the modernization paradigm is internalized by all groups, although to a different extent
- There are strong expectations that the state and companies should address local transportation needs
- Relative disconnection and immobility can be seen as a potential resource by some groups

How Can We Work Together?

- How do we define infrastructure?
- Can we agree on methodological pluralism?
- Are we are able to adopt compatible conceptual models?
- Can we agree that environmental change is only one vector of change relevant for the lives of humans?
- How can engineers, natural scientists and social scientists cooperate to address human-environmental interactions via infrastructure?