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Making a reservoir: Heterogeneous engineering on the Kemi River in Finnish Lapland

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ABSTRACT

This article tells the story of long-lasting and ongoing struggles surrounding the construction plans for a major reservoir on the headwaters of the Kemi River in the Finnish Province of Lapland. A point of contention since the beginning of hydropower development on the river in the mid twentieth century, the reservoir project has been promoted and abandoned multiple times in waves of land purchasing, legal procedures, opposition campaigns, and the delineation of nature reserves. Despite a Finnish Supreme Administrative Court ruling officially setting an end to the project, it never entirely left public discourse and is currently being re-negotiated in slightly adapted form. Articulating voices and documenting practices of riverbank inhabitants, activists and hydro electricity managers, this article presents the struggle as multiple modes of heterogeneous engineering, where both proponents and opponents work towards creating different realities. The article develops the metaphor of heterogeneous engineering by drawing attention to three temporal dimensions central to the reservoir struggle: moments, which refer to the situated emergence of practices and strategies; futures, which speak to the attempts to build and contest expectations regarding conflicting projects; and durations, which consider the cumulative aspects of a decades-long struggle on people and landscapes. Thereby, the article contributes to discussions on making, planning and environmental management, and illustrates ways of studying these processes as situated practices in relation to time.

Introduction

As I climb up the steps to the wooden bird-watching tower, the sun is about to set. After a day of driving and walking through the forests and bogs of Eastern Lapland, this is the first time I get an overview perspective of the landscape; the topography is so flat that it hardly affords a view. My two companions and I look around: there is a large open bog with a small lake on its edge on one side, the setting sun reflecting off every bit of water. The forest stretches out on the other side, pierced by the forestry road by which we came. My companions express their mixed feelings about this landscape: on the one hand, they cherish the bogs and forests for their beauty, quiet, and the berries they pick there every year, they treasure their childhood memories of particular places and joyfully recount the stories of their involvement in boating demonstrations on the nearby Kemi River or the construction of this tower and the shelter building next to it. On the other hand, they are saddened by the social and economic decline in the area, visible to them in the "unmanaged" state of the forests, the number of derelict buildings, and the conflict in the community. During the day, they had introduced me to a number of people and places in the area, most of whom and which I would revisit during the following months. My companions had selected these places and people to present to me the landscape that had for decades been at risk of being transformed into a giant hydropower reservoir, as well as some of the people who had been opposing this project. Standing on the bird-watching tower, they are proud that the surroundings have not been drowned, and that a few years ago a Supreme Court ruling against the reservoir has been passed, which gave them the confidence that these surroundings would not be drowned in the future either.

A few months later, I find myself in a large, windowless room with a long, crescent-shaped desk, lined with computer screens. Rather than the activists who showed me the bird-watching tower, my companions here are an engineer, a mathematician and a technician, explaining the intricate technology by which their company is able to control, from this very room, the electricity production at virtually all the hydropower stations in the Kemi River

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catchment. This is complex business indeed, as the production at any one dam will influence water levels both upstream and downstream, potentially jeopardising hydropower capacity for peak demand, or annoy fish, fishers and riverside residents. It is especially tricky now, during the spring, when the river is flooding with the snowmelt that swells its discharge up to twenty-fold compared to the winter-time amount. Luckily, the company has a few larger reservoirs that it can use to buffer the flood peaks. But that is hardly enough to deal with the massive floods, particularly because the un-checked headwaters of the main course can produce a huge increase of discharge with major implications for downstream technology and population. Of course, there have been plans to take care of this problem, and my companions point me to a large colour picture on the wall opposite the computer screens. It is an artist's impression of an aerial view of a landscape in Eastern Lapland on the upper Kemi River. The scene is dominated by a large, dark blue lake, dotted with shallow wooded islands and bordered by hills in the background. This reservoir, my companions explain, would have been the solution for many of the current challenges of hydropower in Lapland: not only would the spring season be much less risky for infrastructure and residents, but also would the company be able to use the river much more efficiently over the course of the year, releasing some of the water from the reservoir during dryer periods to increase electricity production. Unfortunately, though, the planning process for this reservoir has been stopped by a Supreme Court ruling a few years ago, so that the hydropower infrastructure remains incomplete.

Performances and promises

Nature and landscape, engineering and planning, are not stable entities or fixed procedures, but have been recognised as continually made and improvised in what have been called "performances" (e.g. Suchman, 2000; Szerszynski et al., 2003; Latham and Conradson, 2003; Hastrup, 2007; Abram and Lien, 2011). People bring landscapes and planning processes into being through their practices, in concert – and often in conflict – with other people as well as with non-human beings and dynamics. What Tim Ingold has called the "taskscape" (1993) and the "weather-world" (2008) are expressions of these emergent relational forms, always negotiated within fields of simultaneously social and ecological processes. Understanding people's engagement with their total environments as situated practice in this way implies that planning and management – i.e. conscious attempts to alter these environments – are equally enmeshed with the planners', managers' and other relevant people's activities and experiences in the world. Ingold has described this as an interplay of finding and following ongoing flows and developments and of "bending them to their evolving purpose" (2010: 92). This means that environmental management does not act upon a fixed, external domain ("the environment"), but constitutes an interactive grappling with particular flows and frictions of the world, of which its practitioners and their changing intentions are themselves part. Counter to a Western tradition of thought which assumes that architecture, engineering and related disciplines comprise projects that can be thought out in all their details before they are embarked upon and negotiated with the currents of life, actual processes of making – including in practice those of architecture, engineering, etc. – are more like "weaving" than executing: they always emerge from an interplay of the practitioner, the materials, and the developments that they undergo in the process (cf. Suchman, 2007). For example, a former employee of the U.S. Army Corps of Engineers, an agency known for its decisive role in dam building in the USA and beyond, calls engineering an "art" that does "not correspond with high-modernist ideology" of technocratic, rationalist planning and implementation (Reiss, 2008: 546). Rather, "engineers often spend more time negotiating than building" (Reiss, 2008: 531), so that "we must pay more attention to a negotiating process that does not always end in a project, but nevertheless is an intrinsic part of engineering activity" (Reiss, 2008: 546). Building, making and engineering are thus part of human involvement in the world, rather than an execution of ideas made up insulated from this world and realised through the manipulation of an exterior material environment. Only when treated as an abstraction, such as "the global environment", does the environment become an external "world apart from life" (Ingold, 2000: 210) rather than the life-world in which people dwell and plan and with which they engage in projects of environmental management.

This article scrutinises the performance of a hydropower reservoir project in the Finnish province of Lapland. The empirical material derives from a year of ethnographic fieldwork in 2007 and 2008, as well as follow up visits and conversations with activists and hydropower company personnel in 2013. Fieldwork included meeting, talking, and visiting the river or other significant places, including wetlands and hydropower infrastructure, with people whose lives and work were related to the Kemi River. Here, I draw mostly from notes I took during and after interviews or other meetings with people who have been involved in this particular hydropower project. People spoke about the reservoir conflict both retrospectively, concerning the way it had affected their lives and the river, and proactively, concerning its possible futures and the respective futures of river and riverbank inhabitants. During the time of the fieldwork, the project was especially present in public discourse and the media, as it was in the process of being – once again – re-defined and re-introduced by its proponents. At times, the reservoir seemed to epitomise the fate of the entire catchment, which was either to be entirely 'harnessed' (should the project be implemented), or on the cusp of an era of 'ecological' appreciation and restoration (should it be abandoned). Focusing on the changing activities in which reservoir proponents and opponents have been engaging over the course of the struggle, I demonstrate how negotiating the project is materially and culturally situated and emergent, enmeshed in and drawing on a variety of heterogeneous processes.

Throughout the article, I focus on three aspects of time that I found central to the unfolding of the reservoir conflict, namely moments, futures, and durations. These three dimensions derive from my attempts to make sense of what different people told and showed me about the project. They seemed apposite for capturing the combined phenomena of a project that (1) was periodically shifting in image and terms of debate, (2) was fiercely debated in terms of the futures it would embody, and (3) had never been built but nevertheless had striking effects in the present due to its sheer longevity. First I note that specific *moments* are crucial in the development of the struggle, as the various and changing practices of reservoir proponents and opponents continually emerge out of particular situations. At the outset of the conflict, it would have been impossible to predict what form these practices would take. Only in the process of performing activities and strategies, situated within ever-changing sets of relationships, do they assume reality. This understanding has been explored, for instance, in the emergence of scientific knowledge (Pickering, 1995; Pickering and Guzik, 2008) that is not only a function of researcher and apparatus, but critically also of the always unique moments of their engagement. A focus on emergent moments is similarly evident in what Karen Barad (2003) calls "posthumanist performativity" to address the continually emergent issues and struggles in human engagement with the material world. For environmental management scenarios like the reservoir project, this means that human planners, practitioners and opponents necessarily act within an emergent world that not only may resist or follow