New Applications of Political Ecology for the Nordic Context

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Abstract: Recent developments in the field of political ecology have resonance for themes in northern Geography. In this review, we briefly summarize areas of emerging theory in the field, pointing to the way Political Ecology has come to explore difficult questions for reconciling constructivist accounts of environmental change with material ecologies and for understanding and thinking about scientific expertise and technologies of measurement. Briefly connecting these theoretical problems with cases of environmental change, conservation, and forestry from the Finnish context, we suggest advances in political ecology open new questions and new empirical research problems for the Nordic context.

The politics of the environment is by no means a new problem, nor one unique to recent academic inquiry. Struggles over resources and the control of nature are classic themes in the fields of anthropology, history, and especially geography, where human/environment interactions take centre stage in analysis. Political ecology as a mode for explaining and understanding environmental conditions and change is a well-established approach. As "empirical, research-based explorations to explain linkages in the condition and change of social/environmental systems, with explicit consideration of relations of power" (Robbins 2004: 12), political ecology has been used to explain land degradation, explore regional environmental struggles, and reveal the root failings of conservation policy. The application of this approach to the Nordic context has revealed the way, for example, energy development in Norway enflames struggles between Sámi (Lapp) herders and hydropower (Dalland 2006), and the way political economic transition of the forestry sector in Finland has led to new management regimes and potentially new forest ecologies (Lehtinen 2001).

New problems in political ecology

Recent years have brought new problems and questions to the field of political ecology, however, presenting researchers both with new tools but also with new conceptual puzzles. Specifically we suggest, recent advances in political ecology have

forced difficult choices for reconciling constructivist accounts of environmental change with material ecologies and for understanding and thinking about scientific expertise and technologies of measurement.

Reconciling constructivism and the material world

Political ecological research that critically interrogates environmental change has frequently led to the revelation that taken-for-granted accounts of environmental conditions or processes are often unreliable and are heavily influenced by the political and economic histories of the places in which they are imposed. Fundamental categories, including concepts like "wilderness" and "pristinity" have been shown to be historically contingent and culturally dependent, rooted in colonial, nationalist, and market-based discourses (Neumann 1998). In West Africa for example, long held assumptions of deforestation has recently been questioned through interrogation of flimsy baseline data used to estimate change. The willingness of colonial officers and contemporary managers to believe unstable assumptions, however, was heavily influenced by the authority these *discourses* have in the larger historical political economy of forest control (Fairhead & Leach 1996).

This approach to environmental politics has been useful, but has led to a recent round of debate and reconsideration. Critically evaluating, deconstructing, and dismantling the environment as a discursive construction raises questions about the ability to make grounded claims about material conditions as they "actually" are. It becomes more difficult to defend claims about environmental conditions and change while simultaneously undermining the tools and viewpoints that allow an objective view of those very conditions.

The reconciliation of this problem, or at least the path towards taking both claims seriously – that environments change but that claims of environmental change are social constructions – have occupied a recent generation of political ecologists. Offering research protocols that take seriously the influence of non-human actors (trees, soils, or climate) on socio-political systems, political ecology has begun interrogating the line between discourse and the material world (Bakker & Bridge 2006).

Querying science and technology

In a related way, political ecological understanding of science and technology has been influenced by innovations from other fields, especially the Sociology of Scientific Knowledge (SSK). For researchers in this field, scientific claims have histories, social conditions under which they are produced, and economic contexts that condition the way research about them is performed. While by no means espousing a totally relativistic position on the nature of "truth", such an approach admits that science is a social effort, undertaken by living people with their own gendered, classed and raced status, within institutions that must be funded and that have their own habits (Merton 1973; Latour 1987; Haraway 1989).

Technologies for monitoring and managing the environment have been treated with the same critical scrutiny. To

what degree can we understand technology to have its own momentum, to not only reflect the needs or desires of a society, but to actually change these needs, as people and communities *reverse adapt* themselves to fit the metrics of their tools (Winner 1977)? To the benefit and loss of whom? And with what ecological impact?

Consider the case of remote sensing of forest cover change in India. While the tool is crucial to assessing environmental conditions, it tends to lead to management decisions that change the character of ecosystems. Specifically, sensitivity on the part of forest managers to the way the tool measures forest cover and its horizontal spread, leads them to plant, encourage, or tolerate fast-growing species that are easily visible from the air (Robbins 2001). The technology, however important, is embedded in the social and scientific systems it is designed to measure, and is never innocently objective in this sense.

New political ecologies of nordic environments

Applying these perspectives in political ecology to the Nordic setting, new empirical research questions come into view. Consider Sámi reindeer herding in Northern Finland and its interaction with conservation and forestry efforts. The imposition of a strict nature reserve at Malla in the municipality of Enontekiö (an IUCN category Ia reserve to protect biodiversity) has entailed the exclusion of human influences, specifically herding in the reserve. Local Sámi access rights were transferred to other groups, specifically scientists and tourists, without any form of compensation (Jokinen 2005). This is a familiar political ecology story for many indigenous societies throughout the world.

A further problem is suggested in this effort, however, that being the divergent definitions of the "natural" system state, and the relationship between the constructed character of the Malla reserve and its material condition. Interdisciplinary research at the reserve has shown that *both* grazing and the prohibition of grazing create selective pressures that favour some species over others, leading to divergent ecologies. Strict protection selects against some small, Calcium-favouring, short lifespan seed plants, which are often red listed in Finland, like *Viola rupestris* ssp. *relicta*, (and related beetle, butterfly, spider etc.). These communities, have evolved under grazing and trampling. Strict protection conversely favours some lush perennial vegetation like *Angelica archangelica* or *Cicerbita alpina* (L.) Wallr. (and related other species), which on the other hand, meet certain aesthetic expectations and imaginaries, especially those tied to a "humanless - edenic" natural state (Jokinen 2005; Olofsson & Oksanen 2005). This issue is fundamentally discursive, since landscape expectations and imaginaries are human *constructions*. The way these sculpt new *material* forest ecologies, often with unintended consequences, remains a less well examined phenomenon.

So too, while the science used in monitoring biodiversity in the reserve is rigorous, technically elegant, and intrinsically objective, it is never innocent of the metrics and decisions imposed prior to assessment. While for herders biodiversity means certain holistically perceptible and historically evolved states of their pastures, for specialists it means certain states and relationships

comprised of specific species of interest (Jokinen 2005). These divergent understandings also influence the choices of baseline data used to understand change, the acceptance of certain forms of observational data as reliable or unreliable, and the definition of system states as "diverse". This is made more problematic by the numerous technical definitions and measures of biodiversity itself, and the problems associated with obtaining robust measures (Dobson 2005). In this sense, much more needs to be known concerning the way scientific monitoring of the reserve is actually carried out by experts, the technologies of monitoring they use, and the underlying assumptions and definitions they bring to bear on the problem. In other words, to understand the problem at Malla, conservation biologists in Finland require the kind of ethnographic attention previously reserved for Sámi herders.

Similarly, Sámi herders have long struggled with the state Metsähallitus company in the Municipality of Inari in Finland, claiming that forest development is destroying last vital winter pastures of reindeer (Kyllönen & Raitio 2004; Hyppönen 2005). Such decisions have been defended by claims of the relatively more valuable contribution of forestry and tourism to the regional economy. The measures and metrics underlying these claims, however, demand more scrutiny than they have to date received. Sampling of tourism data follows regional districts and borders of municipalities that match neither the areas of reindeer management nor forestry. Economic data are also temporally mismatched, following an official year calenderer starting the 1st of January while "the reindeer herding year" begins 1st of June when most new calves are born. The result is an unclear comparison of relative contributions and flows of value in particular regions and during particular seasons (Heikkinen 2002; Kyllönen & Raitio 2004; Hyppönen 2005, 2006; Raitio 2006). Currently it is openly admitted that herding is important for tourism and vice versa, but the struggle over what that importance is and how it will be fostered or maintained is afloat in a sea of numbers. The techniques of environmental and economic assessment, therefore, demand the attention of political ecologists in the Northern context as much as the practices and politics of indigenous or local peoples.

In sum, environmental facts and statistical data, while essential for management, are created under conditions that are inevitably social and political, within expert communities with their own ideas and discourses. These statistics and measures, moreover, must be interpreted and implemented within further fields of political struggle. While "knowledge is power", it is also conversely clear that power produces knowledge and sets the conditions for what claims are understood to be true (Foucault 1980). Discourses, expert communities, and technologies of measurement are as much a part of political ecology as systems of production, land rights, and resource use. Their incorporation into Northern Geographies in the future will propel new and important research questions.

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