The Infrastructures of Difference[1]

Solveig Joks[a], Liv Østmo[a] and John Law[b]

[a] Sámi Allaskuvla, Sámi University of Applied Sciences,
Hánnoluohkká 45, NO-9520 Guovdageaidnu, Norway
solveig.joks@samiskhs.no

[b] Department of Sociology, The Open University, Walton Hall,
Milton Keynes MK7 6AA, UK, John.law@open.ac.uk
and
Sámi Allaskuvla, Sámi University of Applied Sciences,
Hánnoluohkká 45, NO-9520 Guovdageaidnu, Norway

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Introduction

The essays collected in this volume pose profound political and epistemological questions about power, policy, and what it is to know well or badly in high variability environments. Understood theoretically and methodologically, the papers explore the tensions between what we might think of as fluidity and stability in a range of contexts. With two further additional twists. First, ecological theory has itself become fluid. Over forty years its centre of gravity has shifted from equilibrium to non-equilibrium understandings of ecosystems. The latter, it has been widely noted, fit much better with pastoralist sensibilities. But second and despite this, it turns out that equilibrium stabilities are still embedded in not only in most development initiatives, but also in what Krätli and his colleagues the 'methodological infrastructures' of ecological (and we might add) social science research (Krätli 2016, Krätli et al. 2015). The argument is that methods have much greater inertia than theory.

In this Afterword we explore some of the tensions between stabilities and fluidities. Working through cases (we avoid abstract theorising), we argue that what we will call the *infrastructures of stability* are quite unlike the corresponding *infrastructures of fluidity*. And sticking with the same metaphor, we suggest that their disparities generate what we might think of as *infrastructures of difference*. These include the conceptual, the methodological, and the epistemological, but extend to include differences that are normative, metaphysical, institutional and material. Our suggestion is that it is these extensions, and the way in which these different strands are woven together that renders these infrastructures so resilient. In particular, we suggest that it is their heterogeneity – the fact that they are simultaneously theoretical, material and social – that makes it possible for the infrastructures of stability to so powerfully enact the bias against variability encountered by pastoralists, Roma, and indigenous groups such as the Sámi that we discuss below. Finally, we turn to questions of politics and practice. Having insisted on the deep significance of difference, like the other contributors to this volume, we argue that it is also important to remember that stabilities and fluidities are not mutually exclusive and that in practice they are both entangled and relational. Difference and inclusion, the two go together fractally, for there are stabilities within fluidities, and fluidities with stabilities. This is revealed, for instance, in academic writing (our own is no exception) but also in the practices of resistance. So, in the final section of the paper we briefly rehearse some of the political and intellectual tactics used by those who champion fluidities in the face of powerful stabilities. The lesson here sounds paradoxical, but it is not. To be fluid is (also) to include stability.

Two more observations before we move on. First, Solveig Joks and Liv Østmo are native Sámi-speaking anthropologists and activists who have explored various aspects of high-variability Sámi environments in Northern Scandinavia including the fluidity of the landscape terms and the salmon fishing that we discuss below.[2] So, for instance, to fish salmon is to live in a world in which fixed categories such as clock time have little relevance. Instead the need is to adapt to unfolding circumstances, which include, for instance, the differences between seasons, changing water levels and temperatures, and the unpredictability of the weather (Law and Joks 2019). Together we have explored the coloniality of fixed methods and their stabilities, and examined how state power and rigid ecological categories have displaced relatively fluid Sámi indigenous ways of thinking and

[2] John is a native English-speaking STS scholar.

practising the environment. And then, second, we need to note that terminology is never neutral. Words grow out of specific practices and resonate in particular ways. So as the contributors to this issue show, terms such as 'nomadic', 'pastoralist', 'traditional', 'subsistence' cut the world up in ways that carry 'sedentary', 'agricultural', 'modern', and/or 'market' assumptions.[3] So, though we are cautious in the ways in which we use language, in what follows we cannot possibly escape the resonances and agendas that come with the (mostly English-language) terms that we use – terms that usually come with what we might think of as a silent bias to stability.

Mistranslation

What happens when worlds built on stabilities butt up against ways of being that practice fluidities? As we have implied above, this is the question that lies at the heart of most of the contributions to this special issue. As Stefania Petrandolfo and Marco Solimene show in their account of Roma ways of knowing, it is sometimes possible to take the fight to the enemy and use fluid thinking in order to try to rethink the character of social theory.[4] It is also possible – indeed necessary – to explore how terms are used in practice. This is what Cory Rogers does with the word *raiya* in Turkana, Kenya. No, this doesn't necessarily mean 'rural', 'uneducated' or 'traditional' which is how the term is used when it issues from the mouths of townsfolk. It also turns out to be fluid – a way for pastoralists to make sense of novel forms of social differentiation. Then again, fluidity/stability interfaces may turn into struggles about translation or hidden mistranslations. So, for instance, as Sergio Magnani shows for Senegal pastoralists, what counts as a 'breed' of cattle, or 'feeding', or the significance of 'milk', is quite unlike what such terms might signify in the development literatures.[5] Different concerns, different worlds. And Dylan Groves and Tjiseua Venomukona, also talk of words and cattle, but this time for Himba and Herero people in Namibia's Kaokoland. In their piece they carefully show that the standard ways of accounting for ownership are simply blind to the relational subtleties, linguistic and otherwise, of the webs that get woven between different people and their animals. Yes, the pastoralists can answer the questions about ownership put to them by outsiders. They are bilingual, or at least they are entirely able to operate in two very different linguistic registers. But none the less, the results of surveys are almost completely misleading by the time they are tabulated into the rigidities of data to appear as figures in columns for development agencies.

We start, then, with three observations: one, that *difference* lies at the heart of the struggles described by the contributors to this volume; two, that translations and mistranslations frequently index difference; and therefore, three, that it is methodologically useful to attend to translations and mistranslations. This, at any rate, is how we have worked in colonial north Norway – which the Sámi people call Sápmi – where as we have noted above, fluid and relational indigenous Sámi

[3] See also Krätli (2015, 15).
[4] This possibility is explored in the papers collected together in Mol and Law (2020). For a seminal example from anthropology see Strathern (1992). For a recent argument from science and technology studies see Law and Lin (2017).
[5] For a somewhat related argument from Colombia see de La Cadena and Medina (2020)

understandings and practices are far removed from those of the Norwegian settler state.[6] Here is an example.[7] For the state, land that is permanently used for agriculture (crops or grazing), is called *innmark*. And in the state's way of thinking, *utmark*, the category in which we are interested here, is the negative other to *innmark*. Subarctic North Norway is sparsely populated and there is relatively little agriculture. This means that for the state most of the land in far north Sápmi counts as *utmark*. *Utmark* is not the same as 'wilderness' (Norwegian *villmark*), but the categories overlap because it is land where there is no agriculture or permanent dwelling. Instead, as the state sees it, it is 'natural'. One consequence of this is that it needs to be protected, and a second is that Norwegian law says that people may roam in *utmark* so long as they do not disturb its natural condition. So how does this *utmark* category fit with Sámi understandings of territory?

The answer is that it does not do so at all. In the past Sámi people lived in relation to the land, and many continue to do so. This means that for Sámi people what might appear to be wilderness or nature or *utmark* to outsiders is in fact a weave of productive working relations. The Sámi word for this is *meahcci*, and in practice there are many different kinds of (plural) *meahcit*. So *muorrameahcci* is where you collect firewood, *luomeeahcci* is where you gather cloudberries and *guollomeahcci* is where you fish in a lake. But its fluidity is greater than this makes it sound, because different families or groups go to different places to do these tasks. At the same time, a single place (understood cartographically) may be *meahcci* to different groups in different ways. (Where my family gathers berries, yours may graze reindeer.) It is just about possible to map these webs of *meahcit* onto a map, but this entirely misses the point, for although they are located in particular places, in the first instance for Sámi *meahcit* are not areas of land. Rather, they are what Tim Ingold calls '*taskscapes*' (Ingold 1993, Mazzullo and Ingold 2008). That is, they are times and places and tasks. Crucially, and, as a part of this, they are also encounters with other actors: for *meahcci* is also a web of relations with powerful, lively, unpredictable and morally sensible beings. Some of these are human, some are animal, and some are (what outsiders might think of as) natural phenomena or supernatural places or events. But all of these are lively actors, so that in this way of being what one might think of as 'the social' extends into what non-Sámi people might take to be the natural and the spiritual worlds. This means that for Sámi the distinction between 'nature' and 'culture' does not exist. *Meahcci* covers both. To misquote Schanche (2002), the consequence of this is that Sámi people do not negotiate about *meahcci* as if it were something inert. Instead, they negotiate *with* it and the actors that make it up.

The mismatch, then, is nearly total. In Norwegian, *utmark* is a set of stabilities. It is a geographical area on a map. It is a way of talking about nature that separates this from culture. And it is a materially objective reality. Whereas in Sámi, *meahcit* are fluid weaves of tasks, social relations and uncertain stabilities. What Norwegian calls *utmark* is a Euclidean and conceptual stability butting up against Sámi *meahcit* that are fluid, uncertain and endlessly negotiable.[8] The take-home point is this.

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[6] Sápmi was divided in the eighteenth and nineteenth centuries between the colonising nation states of Norway, Sweden, Finland and Russia (Lantto 2010, Tervaniemi and Magga 2018). Here were focus primarily on Norway.

[7] In what follows we draw from Joks, Østmo and Law (2020).

[8] In this way of thinking, the idea (and the experience) that space is something like a stable (Euclidean) container within which objects exist, relate, and/or move about is a performative effect of specific relational

Here there are two words that lead into – or perhaps it would be better to say grow out of – two quite different methodological infrastructures. To foreshadow a point to which we return below, these words also participate in *two quite different realities or worlds*. Except that in practice, Norwegian law insists that *meahcci* is identical to *utmark* and (here's the colonialism) Norwegian law rules. So, this is an epic colonial mistranslation which works to erase a series of fundamental differences. And, before moving on, let us note that in the context of reindeer herding it is a mistranslation that is also buttressed by the inappropriate application of equilibrium modelling. The idea that an area has a fixed carrying capacity precisely embeds and reproduces the Euclidean notion that space is a container. In short, the arguments about drylands apply to the far north with only minor variation.[9]

Difference

So we are arguing that one way of levering open the difference between stabilities and fluidities is to attend to translations, mistranslations, the practices that they index, and the realities that are carried in those practices. But how far-reaching are those differences? What do we need to include if we are to think well about the infrastructures of difference?

To explore this, we return to Sápmi and a second environmental dispute, this time about salmon fishing in a major river system in the far north of Norway and Finland.[10] Most local fisherpeople and fisheries biologists agree that salmon numbers are falling. However, they explain this very differently. Sámi people worry about predators which are flourishing because many (*e.g*. seals) are protected, while others benefit indirectly from environmental initiatives. They also worry about tourist fishing, and the fact that there are too many tourists so that salmon do not get the peace that they need to breed and prosper. For the fisheries biologists, predators are irrelevant, and the fall in numbers is a reflection of overfishing. In particular, it is a reflection of local overfishing with nets and weirs. Now we get to the core of the dispute. Since the biology shapes policy, these traditional forms of fishing are in the process of being squeezed out of existence because they are said to be damaging. But there's a twist here. This is that the biologists are required to consult with locals (Norway formally recognises the indigeneity of its Sámi minority.) Though in practice this does not really happen, they are obliged to include 'local ecological knowledge' (LEK) or 'traditional ecological knowledge' (TEK) in their reports.

Here's what the scientists say about why this is (nearly) impossible:

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practices (which include cartography). It is not, therefore, a condition given in the order of things. This implies that alternative versions of spatiality might also be enacted. See Law (2002).

[9] Though we cannot discuss this here, Norwegian state policy limits reindeer numbers because it is claimed that there is overgrazing in many parts of Sápmi. Non-equilibrium models note that snow periodically limits forage availability and arrives at conclusions close to those of the herders. Benjaminsen et al. (2015) and Marin (2020).

[10] In Sámi this river is called Deatnu, in Norwegian Tana, and in Finnish Teno. In this section we draw on Joks (Joks 2015), Joks and Law (2016, 2017), (Skuvlaalbmá) 2018 #5123 Law and Joks (2019).

> ‘LEK and TEK is largely oral and visual, intuitive, experience based, subjective and highly qualitative, while science is based on systematic data within a model- or hypothesis-based framework which, though the use of a strict sampling design, are largely objective and quantitative. The usefulness and relevance of LEK/TEK therefore becomes highly limited.’ (Erkinaro et al. 2012, 29-30)

This comes from one of their reports. What is being claimed becomes even more striking if we set it up in the form of a table:

Science	**TEK or LEK**
Systematic data	Oral
	Visual
Model- or hypothesis-based framework	Intuitive
	Experience-based
Objective	Subjective
Quantitative	Qualitative

To be sure, the scientists are partisan. But if we lighten up on the judgement implied in how they distinguish the ‘objective’ from the ‘subjective’, what they are saying can be reread as a simple description of two distinct methodological infrastructures. A reminder:

> ‘By ‘methodological infrastructure’ we refer to the basic operational elements of method: from technical definitions, systems of classification, indicators, and the procedures for data collection, to wider processes of standardization and analysis.’ (Krätli et al. 2015,8)

So, the version of fish population modelling being used here works by making stabilities (this approach assumes ecological equilibrium). Alongside but in contrast to this, Sámi ways of knowing are creating fluidities because there are ‘intuitive’, ‘experience-based’ and ‘subjective.’ So, in this brief biology-biased paragraph two versions of knowledge, two suites of methods and two very different forms of epistemology are being described. Two different methodological infrastructures. And, as we also hinted above, it also becomes apparent that they relate to or describe *two different versions of reality, two ontologies*. This is because the world in which the scientists work is a space-time box filled with natural objects and processes (numbers of salmon, numbers of salmon needed for effective stock replenishment and the like). It is a world that is shaped by causal mechanisms. While the other, the reality of the Sámi experts, is not primarily about mechanisms and objects within a Euclidean box. Instead (as with *meahcci*), it is a world that is simultaneously generated and populated by *actors*. As we have tried to suggest above, it is a world composed in ‘social’ relations between those actors. And, again we have suggested this, these actors, human and otherwise, are endowed with wills, intentions and moral sensibilities about what is right and wrong.[11]

[11] On ontological difference, see Mol (2002) and Verran (2002)

Here is an example. Solveig was fishing with Petter Somby, a local, when they decided to take a break. Sitting on the bank, they watched someone else catch a salmon:

> ''Do you see that?' [says Solveig.] 'If we'd been on the river that fish could have been ours.' 'No', says Petter. 'That's not right. Because that fish was not meant for us' [*Diet guolli ii lean munnuide oidnojuvvon*]. He adds: 'We cannot catch the fish that are already caught.'' (from Joks and Law (2017, 155)

Oidnojuvvon might be translated into English in various ways: it 'was not meant'; it 'was not fated'; it 'was not intended'; or it 'was not given to us'. These vary, but they all suggest that this is not a term that is describing a world shaped by stable causal mechanisms. Instead (as we briefly mentioned earlier) it is a more fluid and fateful world composed, in the way we have just described, of moral beings and their interactions. Another small example. You do not boast about the fish you catch. This would be disrespectful because if you catch a salmon then this is also because the fish was willing to be caught (Schanche 2004,3). All of which are fluidities that make no sense in the causal world of fisheries biology. A final point. Note also that those fluidities are relatively *place-specific*. People like Petter Somby are deeply knowledgeable. They have lived by the river, observed it, and fished on it for decades. They have watched the unfolding of the seasons, year by year, and they know their river very well. But at the same time, they are cautious, indeed *modest*, about their knowledge. They know their part of the river, but unlike the biologists, they do not imagine that what they know is general.

Our argument, then, is that the infrastructures of stability and fluidity are not only different but are also *complex* and *multivalent* weaves. Here is an incomplete list of what is being woven together:

- **Theory**. They use quite different more – or less – formal ideas or concepts.
- **Epistemology**. They have different standards for deciding whether an idea or a fact or an argument is right or wrong.
- **Methods** or methodology. They have different indicators, and different ways of collecting and analysing data. (The term 'data' makes little sense in the fluid context of fisherpeople, but never mind.)
- **Morality**. They are *normative*, because they mobilise different assumptions not only about what is good or bad, but also, and more profoundly, because the world of the Sámi is populated by morally-sensible beings whereas the biological world of the scientists is not.
- **Ontology**. Finally, what is in these worlds is different. Reality works causally and mechanistically for the scientists, and it is lively, unpredictable and social for the Sámi. Their worlds, then, are simply different.

So theory, epistemology and methodology are woven together with the normative and the ontological, and it is the heterogeneity of this weave that explains why fluidities find so little space in stabilities. Why there is so much inertia attached to method. Thus, the infrastructures of stability (those of the fish biologists) are not only different but are generated in practices that are *performatively enacting a reality* that excludes the fluid, lively and negotiated possibilities that grow out of Sámi practices. So, it is not just that words are difficult to translate when these two realities meet. It is also that words are pointing to *different kinds of things in different kinds of worlds*. The

biologists might not see this, but those words do not belong within the single reality of what one might think of as a 'one-world world' (Law 2015).[12]

Materials

Now consider the following quotation from Sámi author, reindeer herder and hunter, Johan Turi:

> 'I have come to understand that the Swedish government wants to help us as much as it can, but they don't get things right regarding our lives and conditions, because no Sámi can explain to them exactly how things are. And this is the reason: when a Sámi becomes closed up in a room, then he does not understand much of anything, because he cannot put his nose to the wind. His thoughts don't flow because there are walls and his mind is closed in. … But when a Sámi is on the high mountains, then he has quite a clear mind. And if there were a meeting place on some high mountain, then a Sámi could make his own affairs quite plain. (Turi 2012 [1910], 11)

Turi was the first Sámi author, and this passage, published in 1910, is taken from the English translation of the opening paragraph of his major work, *Muitalus Sámiid Birra* (*An Account of the Sami*). We cite it because it leads us straight to our next concern, the very different down-to-earth material practicalities that are also woven into the infrastructures of stability and fluidity. *Sámi people think well in the open air*, he says, while *governments think well in rooms*. This is easily overlooked, perhaps because it sounds like an extravagant figure of speech, but it is important, and it is important because it is a *material* difference. We might add that Turi is probably also saying that governments think well only if they are handed *texts*. This is why he wrote his book: he had come to appreciate that texts are needed in this brave new world of state power, even if Sámi people think perfectly well in *meahcci* without texts. And then, a third thought, perhaps he also implying that governments think well if the facts have been gathered together in a single place ('a room') to create in an overview. Whereas he is clear that Sámi people think well in their own places ('the high mountains').

Turi, then leads us to the last point we want to make about the infrastructures of stability. These (and their other, the infrastructures of fluidity) are difficult to shift because they are carried and produced in endlessly many material forms. In people's heads, their hands, their tools, their landscapes, their texts, their maps, their memories, their spreadsheets, their algorithms, their interactions, their hierarchies, their organisations, their professional and social affiliations, and the ways in which they learn. There are many threads here, but let us pull on five by returning to salmon and thinking about what it takes to know salmon well:

- **Texts and inscriptions**. As we have just suggested, Turi was prescient. He saw this coming. People like civil servants and fish biologists work in a world of paperwork and electronic inscriptions. So, for instance, the fish scientists (try to) count the numbers of salmon in

[12] As Stefania Petrandolfo and Marco Solimene note, this is an argument that has been developed in anthropology by Eduardo Viveiros de Castro (1998).

strategic locations, and then (a crucial move in the direction of stability, because anyone can count) they note those figures down.[13] Then, more texts, they write reports and they also publish scientific articles. All in all, the way in which they work is unimaginable in a world without more or less stable inscriptions. The Sámi fisherpeople? As it is in the mountains, so it is down by the river, Turi is right. They observe, they learn, they have experience that grows over seasons, they talk with one another, but they mostly think and know their worlds without the assistance of stable inscriptions.[14]

- **Circulation**. Second point. Once they are created, the biologists' inscriptions do two things. They both *move*, they circulate, and – this is crucial – *they hold their form*.[15] So the numbers do not stay in the place, down by the river, where they were created. They hold their shape as they are sent to the local offices of the fishery authority. And again, they hold steady as they move between Finland and Norway while the biologists mull over their implications. And in due course they move once more, this time in condensed form (we will come to this in the next paragraph) into reports and scientific papers – a shift explored elsewhere in this volume, for instance by Groves and Venomukona. So, this is stability on the move. In fisheries biology (and surveys by development agencies) 'facts' in the form of numbers hold themselves steady. And what of the Sámi fisherpeople? Here it is different. In the first instance there are no inscriptions. So, what is it that moves here, but also holds its shape? The answer has to be: it is *people*. And whatever it is that people do or tell as they move, the stories and accounts that they trade are not fixed like the inscriptions of the scientists. Which is not, let us quickly add, a complaint, for fisherpeople carry informal knowledge with them, decades of experience and wisdom. But this is a way of knowing that reflects and reproduces fluidity rather than stability.
- **Juxtaposition and combination**. Here is another feature of inscriptions. They are relatively easy to manipulate. Words and figures can be laid alongside one another, compared, contrasted and (as we said above) condensed to create summaries or new possibilities. To condense words is to produce a narrative – perhaps in the form of a précis. This is what the biologists do when they write their reports. To condense figures is to enter statistics, a world with its own set of rules about how figures are to be handled, summed up, related and condensed. This is what the fish biologists are doing as they create tables which reveal (for instance) the proportion of salmon that successfully make it back to their home rivers to breed. In short, as they create overviews.[16] And this is a way of working more or less alien to Sámi fisherpeople. There are particular reasons for this (for Sámi people to count is

[13] Bruno Latour and Steve Woolgar, insisting on the importance of this for science, talk of 'inscription devices' (1986). See also Latour (1998).

[14] 'Mostly' because in the contemporary world of literacy, inscriptions become important in the context of colonial struggles about fishing rights. For another case, see Nadasdy (2003).

[15] Bruno Latour (1987, 227ff) refers to these form-holding inscriptions as 'immutable mobiles.' The importance of texts has been explored in various ways in various literatures. So, for instance, anthropologists have argued that memory practices and ways of knowing in oral cultures are unlike those textual cultures (Ong 1988, Rotman 2008).

[16] It is probably useful to distinguish between fluidities on the one hand and flows on the other. Flows are, as it were, domesticated and regulated. Think of the mains water supply system of a town, what happens to numbers as they are processed statistically, or the way in which the measurements of surveyors are converted into maps. That which is fluid is not domesticated in this way. See Moser and Law (2006).

immodest and inappropriate). But the larger point is that when fisherpeoples' narratives are combined, the practices for doing this are relatively fluid. For instance, they are conversational. And much of the time there is no need to put narratives together in the first place because, as we have seen, this is a world in which knowing is more or less place-specific.

- **Abstraction**. Note, now, that the way in which the scientists work generates and depends on abstraction. On the one hand inscriptions (and most obviously figures) are abstracted from their local context. Indeed, they are removed from whatever procedure produced them in the first place. On the other hand, this process of *abstracting* in turn creates *abstraction*. That is, it generates the possibility of abstract knowledge, knowledge removed from time and place. Knowledge that claims to be general, because it is no longer specific to anywhere in particular. Stable knowledge that acquires a status and a life of its own detached from the materials and the circumstances that produced it, for instance in the form of generalisations about sustainable salmon populations. And the fisherpeople? None of this applies. Yes, of course, there are words that move between contexts. Yes, of course, it is possible to compare this year with last year. This is a rich and fluid way of knowing: that is what experience is. But without inscriptions, words remain much more closely linked to what they are describing. The extent to which abstracting leads to abstraction is limited (Sara 2011, 142).
- **Centres of calculation**. What does all this tell us about the *social organisation of knowing*? If we stick with the biology, the answer is that it is reflected in institutional and technical infrastructures of stability in the form of *centres of calculation* (Latour 1987). That is, it creates and depends on locations where inscriptions are juxtaposed, combined and condensed to create overviews. Where data is analysed, for instance in the form of spreadsheets. So, this is method at work, but not just method. For it takes time, effort, money, and a concentration of resources and particular kinds of skill to do this. Not everyone can run a simulation that projects the future size of salmon populations. So, to create centres of calculation is to also to create forms of knowledge that are privileged both epistemologically and socially. Some places like laboratories, or government departments are taken to know the world better than others. Some people and professions are taken to have more epistemic authority whereas others have less. Some methods are taken to generate reliable knowledge, while others get demoted to the status of anecdote or intuition. Some descriptions of the world (for instance those that appear in scientific journals or expert reports) are taken to be putatively reliable, whereas others are not. Some forms of language (the 'objective') become appropriate vehicles for conveying true knowledge, whereas others (the 'subjective') are deemed inappropriate. There is no space here for the distributed fluidities of Sámi knowing.

So, we are suggesting that the infrastructures of stability on the one hand, and the infrastructures of fluidity on the other are multivalent: that they are simultaneously theoretical, methodological, normative, epistemological, ontological, material, institutional, professional and social. We are suggesting that they generate different ways of knowing, different realities, different politics, different practical arrangements and different forms of organisation. Our argument, then, is that if the stabilities of method are obdurate – as indeed they are – then this because they are cultivated and sustained in a powerfully multivalent weave. Cut one thread (equilibrium ecosystem theory, a

particular version of fish stock modelling, visual methods for counting salmon) and the weave is not disturbed because the other threads still hold.[17] There are other theories, other models, other methods at work; or the assumption that some have authority is still in place; that the natural world is indeed a set of causal mechanisms; that these can be described if you use the right kinds of inscriptions from the right kinds of practices; that the natural world is morally neutral; that the social world is distinct from the natural world; or that there is, indeed, a single world out there in the first place. We summarise the argument in this table, though tables are themselves are also a condensed enactment of the infrastructures of stability.

Infrastructures of Difference	
Infrastructures of stability	**Infrastructures of fluidity**
Knowledge	Knowing
Theory, epistemology and methodology	
Theory, Abstraction	Narrative, practical wisdom
General truth claims	Modesty, specificity
Specialist methods	Experience
Overview, detachment	Situated, local
Materials and institutions	
Inscription	Talk
Circulation, transportability, knowledge	Relative immobility, knowing
Centres of calculation and privilege	Distributed knowing
Specialist expertise, detachment	Local embedded expertise
Metaphysics and moralities	
One world, one reality	Multiple worlds, multiple realities
Mechanisms and causes	'Social' encounters and interactions
Ethical neutrality	The world is normative and moral

But ….

We have talked up the significance of difference. We have done this because we want to insist that the infrastructures of stability and fluidity – and therefore the infrastructures of difference – go all the way down. Our argument is thus that differences are not to be talked down or papered over. Indeed, we suggest that it is also useful to distinguish between *knowledge* on the one hand, and *knowing* on the other (Joks, Østmo, and Law 2020). In this way of thinking *knowledge* is something that grows out of the infrastructures of stability. Though it cannot travel everywhere (for instance into the Sámi worlds of fishing), the core attribute of 'knowledge' is that once it has been created within the right networks it travels readily. It becomes an object, an item, a set of figures or an inscription. In the right circumstances it is made to be detached from wherever it was created and moved elsewhere. It can be turned into an abstraction. So, as we have suggested, in fisheries biology a collection of statistics can travel from a fieldwork site to a laboratory, a data-set, and a

[17] For a powerful sketch of the power of colonialism in this mode see Latour (1988, 201-3).

spreadsheet. It can move to a policy agency in the form of a consultation document, or to an academic journal in the form of an article. And then it can move to an act of parliament, and to a set of regulations that end up being enforced by the police. So 'knowledge' goes with abstraction and with distant forms of epistemic authority. Whereas *knowing* works in none of these ways. 'Knowing' is place-based, and it subsists as skill and wisdom and tinkering and care and interaction and the uncertainties implied in all of these. And it resides in the heads and the hands and the tools and the relations of people with the others they encounter in their places, others that may be human and otherwise. In *meahcci*, or by the river. Knowing, then, is distributed. It cannot be gathered together in a single privileged place.[18] The distinction between knowledge and knowing depends on and reflects difference all the way down.

But.

But if difference goes all the way down, at the same time *in practice fluidity and stability also, and always, go together*. This is what the pieces in this special issue tell us. The papers that we mentioned earlier. But also, for instance, the piece of Alison Hahan. Yes, 'mobile' ICTs, surely networks of fixity, feature large in the worlds of pastoralism. Or Natasha Maru's account of the mutual dependence of mobility and immobility in the Rabari community in Western India where stabilities come both from within (the home village) and beyond (ICTs again). Or Guilia Gonzales' account of the im/mobilities of fieldwork among Kel Tamasheq women in Bamako where fieldwork reflects the stop-start practices of visiting which in turn reflect (relative) stabilities such as internal affiliations or state security policy. So, this is the 'but'. Stabilities and fluidities are different all the way down but *they, also, always go together*. They depend on one another analytically (Maru) and practically (Gonzales); they rebuff one another (*meahcci* and *utmark*); they (try to) *ignore* one another (*meahcci* and *utmark* again); and they include one another (most of the chapters). As Pappagallo and Semplici show in the introduction, they relate together in endless different ways. So, here is the question: what to make of this?

There is a simple response, though its implications are far from obvious. This is to say that *pure stability and pure fluidity are impossible*. Instead, everything, every practice, is simultaneously stable and fluid. Is the practice of biology simply a form of stability? Parts of it are – or aspire to be. That is what we have shown above. But in practice large parts of it are not. Think, for instance, about how its figures come into being, its salmon counts. Sometimes these are automated. Beams of light are cut for a moment as a salmon swims past. But detectors need to be calibrated, they need to be serviced, and they need to be located in just the right place. The lesson is that stable inscriptions depend on the fluid art of tinkering. Or they depend on biologists who put on wetsuits, swim downstream, and manually count the salmon they come across in more or less turbid rivers. Another form of fluid art. So measuring is fluid before the figures ever become stable. But this is *not* a criticism. It is simply the way inscriptions are, which means that even in science stability rests on more or less fluid and uncertain practices. So (again this is not a complaint), scientific practices are art forms too. Indeed, if there is a complaint to be made at all, this is to do with the way the fluidities embedded in scientific practice vanish; about how fluidity disappears once inscriptions get

[18] This is an insight that has been explored in several literatures and idioms. On orality and literacy see, for instance, Ong (1988) and Rotman (2008). In the context of science studies see Lynch and Woolgar (1990).

reified, and the way in which people start talking about science as if it were stable all the way down (Latour 1993).

The argument works the other way round too, for the fluidities of the worlds of fisherpeople in turn include stabilities. Fisherpeople depend on weather forecasts. They need fishing permits. In the contemporary world they take their mobile phones out on the river with them. They use outboard motors and gasoline. They buy monofilament nets. They put their catch in freezers. Before there were freezers, they preserved their fish with salt. They pass on what they catch in gift relations to friends and family, and (though more so in the past when there might have been a surplus) they sell it in the marketplace. (Money value is another stability.) In short, just as stabilities imply fluidities, the fluidities (of local fishing) include stabilities and some of those stabilities come from outside. Which, again to be clear, is not a complaint. Indeed, it would only become a complaint if those stabilities were to disappear in a romantic haze of totalising fluidity. Or perhaps more seriously, when those who complain that since indigenous ways of living are longer 'authentic' because they include stabilities such as mobile phones they no longer deserve to be respected.

But If stabilities include and depend on fluidities, and vice versa, then this applies to politics too. So no, we are not neutral. Like the other contributors to this special issue we want to find ways of resisting colonising infrastructures that squeeze indigenous versions of fluidity. But, here's the point, a politics of fluidity needs to come in endlessly many variants. Instead of being a set of grand principles, it is tactical. Which means that often it will draw on stabilities. Any list of Sámi tactics to refuse Norwegian colonialism would include passive resistance, evasion and silence (Lehtola 2018, 30), direct political action outside the law (Lantto 2010, 548), constitutional engagement (Falch, Selle, and Strømsnes 2016, 129, Mörkenstam, 2016 #5176), artworks, press campaigns and commentary (Balto 2018), legal suits (Broderstad 2014, 82), biological articles (for instance on non-equilibrium ecology) (Benjaminsen et al. 2015) and publications in the humanities and social sciences (Oskal 2001, Sara 2009, Brattland 2013, Reinert 2014). We cannot explore these tactics here, but as Semplici and Pappagallo suggest in the introduction, most, perhaps all, work by including and redirecting colonising stabilities. So, for instance, passive resistance responds to those stabilities in ways that include 'foot dragging, avoidance, false compliance, sarcasm, feigned ignorance, as well as passivity, laziness, misunderstandings and disloyalty' (Lehtola 2018, 30). As are academically-inspired attempts to use non-equilibrium ecology to resist Norwegian policy on reindeer numbers, or alternative versions of biology to rethink the politics of salmon fishing.[19]

Here, then, is our conclusion. The infrastructures of stability and of fluidity are both multivalent. Each weaves together concepts, theories, methods, materials, realities, metaphysics and forms of social and political organisation. It is their dissimilarities and disparities that define what we have called the infrastructures of difference, but since those differences go all the way down, they are obdurate, sticky, and difficult to shift. At the same time, since they are fractally entangled, there is no purity. This tells us that any politics of fluidity is necessarily a politics of tactics. It also suggests the wisdom of being cautious about attaching ourselves to particular fixed positions. If those positions are useful, then fine. But if they are not, then it is time to look for alternatives. The

[19] The options explored include fisheries approaches based on catch per unit effort, ecosystem services, narrative juxtaposition, and political and administrative devolution. See Law and Joks (2020).

invention of non-equilibrium theory in ecology has been crucially important in the struggles between states and those who live in high variability environments. But caution is needed even here. Strategic essentialism, strategic realism, is appropriate. But the tactics of fluidity suggest that it would be wise to avoid finally grounding ourselves anywhere in particular.

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