On the interdependency of the conceptualisation of nature and the local environment

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Cronon (1996) maintains that the concept of *wilderness* emanated from a distinct cultural history mostly informed by Christianity and anthropocentrism[1] after the Enlightenment period. As such, 'wild' places in nature were seen as evil because uncultivated but also empty – waiting to be utilised and exploited for human purposes. This is related to a conceptualisation of nature as passive and opposed to culture. In this essay, I will discuss how this and alternative concepts of nature are involved in shaping landscapes and environments. Here, I will draw upon a variety of ethnographic studies to show how this relation evolves through the lens of standardisation and simplification, domestication and conservation practices. I will thereby reveal that this relationship is mutual. Finally, I will argue that the link between conceptualisation and material effects is dependent on the degree of acknowledging more-than-human agency, at which the agency of nature can only be ignored but never undone.

The basis of this essay builds the claim that an *environment*[2] is not something perceived 'out there' but always an enacted formation: "It is neither an object in space nor a space for objects" (Ingold 2022, 142). Instead, it is a dynamic field shaped by the intertwining of human and more-than-human agencies with their various conceptions including narratives, ways of knowing as well as actions or practices (Sutter 2007, 729). In a human context, a specific conceptualisation of nature therefore partakes in shaping environments in a twofold manner: first, it enables specific practices that then are performed to shape, willingly or not, landscapes. In particular, what we think landscapes consist of, our ontology, and what they should or can do, derived from our epistemology, influences our imagination of what tasks our practices are targeted at. In addition, a concept of nature also includes a specific stance towards the relations to the more-than-human world which enables or prevents other agents from shaping the environment. This point is particularly important because, as Cronon indicates for the 'Western' discourse, the possibility of human cultures ignoring multi-species relations is real.

1. The belief that human beings are the most important or even only authority in the world.
2. I will take 'landscape' and 'environment' as equivalent terms throughout the text.

I want to explicate the link between the ontological conceptualisation and the derived practices using the work of Li (2014) and Joks, Østmo, and Law (2020). Here, Li (2014, 589) supports my starting point by showing how the resourceness of land – what it can be used for – is not a natural quality to be discovered but a relation between a particular mode of knowing and imagination land. In particular, land can be identified based on different meanings and materiality and, as such, becomes a different resource to various actors in various distances: not "all lump together the same set of material substances under one label" (590). She underscores her point with an ethnographic study on Indigenous highlanders in the Indonesian island of Sulawesi. Here, the local people do not have 'land' as a word and rather, use words conveying assemblages of material substances and social relations. This, I think, is linked to a non-dualistic conceptualisation of nature where humans and nature are considered socially entangled, in as much as they have ethical structures and are mutually dependent so that land is understood from the perspective of multiple species[3] (Watts 2013, 23). Similar to Li, Joks, Østmo, and Law (2020, 307–8) report that Sámi people have the term *meahcci* that goes beyond categorisations like nature, culture and wilderness, and is instead constituted of and in lively encounters with more-than-human actors including animals, lakes, mountains as well as phenomena such as snowstorms. Thus, it is not simply a physical landscape but an assemblage of uncertain and contingent relational tasks like picking berries or collecting firewood – interactions that unfold iteratively through negotiations with the more-than-human in space and time (313–4). The resourceness of land is thus a process and not a space for both highlanders and Sámi people, and it is important for the people to negotiate with the liveliness of nature rather than about it (315). As a result, the Indigenous understanding allows more-than-human agents to partake in decisions about material changes in environments.

In contrast, the 'Western' concept of nature renders land as a resource available for global investment by classifying it as 'underutilised' or wilderness (Li 2014, 592). The large, global spatial scale thereby demands a homogenisation of various environments into these broad classifications which in turn necessarily precludes the particular, social relations the highlanders and Sámi people are engaged in. For Li, this shaping of environments is mainly driven by map-making and graphs as inscription devices acting on land: they produce a specific way of thinking about land as a singular and separated entity with potentialities

3. This account resembles the idea of 'more-than-human sociality' where all beings are "made in entangling relations with significant others" (Tsing 2014, 27).

that can be rendered commensurable quantities and made available for global investments (Li 2014, 593). Here, this universalisation of land correlates with the idea that *data* are purely fact-based and therefore epistemically preferable (594). As such, the narrowing of the concept reciprocally fuels empirical imperialism where certain knowledge is assumed as universally valid – as something that can be abstracted from the circumstances of its origin and can become an adequate description of the world at large in the form of laws, maps or theories (Joks, Østmo, and Law 2020, 311). This in turn has effects on the shape of the landscape: for example, Joks, Østmo, and Law (2020, 314–5) report that the pasture for reindeer herding is understood in an agricultural logic by the Norwegian state[4] – as a patch of land endowed with particular attributes and manageable from a distance. This then is used to justify a particular practice of environmental management based on a narrative about overgrazing, while overwriting the local knowledge and ontology.

What emerges from my discussion then is the close interdependency of modes of knowing a landscape, conceptualisation of nature and effects on the shape of the land. If nature is conceptualised as universal and linearly scalable, the results are practices of simplification and standardisation. The effects of this interplay can for example be seen in the study of Scott (1998) on scientific forestry in eighteenth-century Prussia. Here, Prussians focused on certain limited aspects of an otherwise far more complex reality using map-making as a filter (12). Thus, the forest as an ecological, dynamic habitat disappears and is replaced by a universal forest as a mere symbol that represents an economic resource under human authority. The arising manageability leads to economical advantages which in turn drives a standardisation of the materiality as practice. Thus, the diverse but chaotic old-growth forest was transformed into a 'standard' forest that closely resembled the administrative grid of its techniques. To this end, the underbrush was cleared, the number of species was reduced, and plantings were executed in straight, easily manageable rows (15).

The implied exploitative maxim is even more visible in plantations as highly specialized, large-scale agricultural operations characterized by intensive use of capital investments, land and people (Perfecto, Jiménez-Soto, and Vandermeer 2019, 236). As a sign of modernity, plantations are thereby built upon a conceptualisation of nature that links back to

4. The Norwegian state translates *meahcci* as *utmark* (Joks, Østmo, and Law 2020, 310). Here, *utmark* is defined as the uncultivated "other" to farmed land, *innmark*, but also as areas for *friluftsliv* – places for outdoor activities. Thus, it is related to the concept of wilderness and nature-culture dualism (309). As indicated above, this is not identical to *meahcci* after all.

colonial ideals and the dualism between humans and nature: "The process of European colonization has taught us the extraordinary ability of humans to deploy natural resources through exploitative relationships with their environment and people" (Perfecto, Jiménez-Soto, and Vandermeer 2019, 236). As such, they can be seen as idealised blueprints for modern economic systems that operate by "divorcing local ecologies from the synchronicities of the natural world" (Paredes 2023, 839) and cheer some species at the necessary exclusion of others. This in turn can have destabilisation effects on environments.

An example of this can be found in Perfecto, Jiménez-Soto, and Vandermeer (2019) who correlate the intensification of the coffee sector in Mexico after the late twentieth century with the outbreaks of the 'coffee rust' disease. Here, they point towards substantive empirical evidence to argue that biodiversity declines along the coffee intensification gradient (241). In particular, the traditional production of rustic coffee, where the coffee is planted in the shade of an existing forest and no agrochemicals are applied – a collaboration with the forest – results in higher levels of biodiversity, ecological interactions and thus, the functioning of the ecosystems (239). In contrast, monoculture coffee systems, that arose from modernising measures of governmental and international institutions, lead not only to reduced diversity at the farm level but also to a simplification and homogenization of the landscape around, which in turn reduces the biodiversity at the farm again (243).

Similar to Scott's case, Perfecto, Jiménez-Soto, and Vandermeer thus provide evidence for the link between the conceptual simplification of nature, as linear and controllable, and a simplified material shape of landscapes. However, their case also shows how an ecological imperative like monoculture fires back at the epistemic repertoire of humans: after the outbreak of the disease 'coffee rust' that threatens whole plantations, the original response of owners and the government could only follow from their plantation-thinking with control and human authority as imperative. Thus, it was assumed that plants with proper nutrition and in dry conditions would be able to better resist the disease. This led to increased fertilisation and the elimination of 'non-coffee' shade trees (243). Recently, the rust returned but officials did not find a better answer than pushing the intensification further. Tragically, the homogenisation of the coffee landscape along with general deforestation in the overall region could in fact explain the increase in rust disease because these practices promote its dispersal by wind and reduce its control by natural enemies (244, 248).

This implies then that plantation-thinking flattens other modes of knowing and acting for the sake of functional necessity (compare Paredes (2023, 842)). Linking back to my discussion of Li and Joks, Østmo, and Law, the usefulness of land to humans depends indeed necessarily on the inclusion and exclusion of other ways of acting or participating (Li 2014, 591). Yet, this is only a perceptual ignorance and not a complete erasement. In this case, the owners ignored and did not consider the agency of the forest or certain patterns in the environment – diverse matrices that would allow the movement of certain species between forest patches and thereby promote the conservation of the forest at large (Perfecto, Jiménez-Soto, and Vandermeer 2019, 241–2). Thus, I can establish the interdependency between ecological-epistemic imperialism – leading to the loss of knowledge about preventing disease outbreaks – and significant effects on the materiality of landscapes[5].

At this point, I find it fruitful to contrast this epistemic imperialism with an alternative mode of knowing arising from a conceptualisation of nature as dynamic and filled with other forms of agency. Paredes (2023, 838) describes the development of a 'vaccine' against a crop disease that befalls bananas based on a mode of 'counter-plantation' thinking that also challenges existing epistemic authorities in science: Isidro, a farmer from the Cotabato Highlands in the Philippines, invested himself in a multi-year collaboration with the forest, who provided him with the necessary materials, and God guiding him towards the right formula (845). As such, he participated in nature - the forest – as a dynamic and living system. This necessarily decentralises human authority and instead, opens up to more-than-human agency: "By allowing the petri dish to become contaminated, Isidro had effectively set it up to be acted upon by actors other than himself" (848). In effect, Isidro acts "decolonial insofar as [he] subverts the premises of the modern agricultural sciences founded on eliminating certain bodies in the name of others' flourishing" (838). In particular, he abandoned the plantation-thinking where microbes as non-humans are considered disruptive elements and instead, collaborated with them, God and the forest to let new modes of knowing environments emerge (849). For my argument, this implies that the change of conceptualising nature from antagonistic, thus resisting and overwriting, to participatory offers a necessarily different practice: acting with land instead of relying on

5. Similarly, Scott (1998, 20) describes how the radical simplicity and suppression of more-than-human agency in the Prussian conceptualisation of nature is connected to the massive dying of large patches of forest (*Waldsterben*). Here, the complex interplay of soil, nutrients, fungi, insects, mammals, and flora was disrupted and led to such serious consequences.

processes of exploitation. This, in turn, alters landscapes from simplified to diverse, from susceptibility to disease to flourishing, because multi-specification is cherished.

The plantation practices analysed so far can also be seen in the light of *domestication* "as sets of relations across species barriers that enable and enact particular biosocial formations, or reproductive practices through which humans and nonhumans mutually inhabit each other's worlds" (Lien 2015, 4). Thus, domestication is not only physical but also conceptual, a thinking of relations put into practice through appropriation and rearrangement of spaces and times (4). As indicated above, the plantation logic of simplification and standardisation entails the most radical reorganization of the environment toward human ends. Thus, the conception of nature as under human control leads people to imagine themselves as separate from the multi-species relations, allowing them to forget their entanglements with the land, and instead, enforce an extreme understanding of domestication as imposed and violent care (Chao 2018, 629). The consequences are exploited landscapes and non-human beings.

An alternative way of domestication is described in the ethnographic study of Chao (2018) on the Marind people from Merauke (West Papua). Similar to the Indigenous ontologies mentioned so far, Marind people acknowledge non-human relatives (*amai*) whose activities embody the diverse ways of living and relations that endow the forest with temporal, moral, and affective texture[6]. The local environments thus emerge from the dynamic relations of humans and their plant and animal kin, who participate in each other's existences as members of a shared social and ecological network of life (625–6). This conveys respect for the autonomy of all beings yet in relation to each other such that domestication arises as a reciprocal relation of care and balance. For example, in horticulture, each organism is as much the product of multiple human acts of restrained care as it is the product of the organism's own self-willed modes of growth and relations (628).

For the Marind people, domestication can therefore only succeed if plants are 'native' in the sense of having a certain degree of wildness and therefore freedom because only then, they are able to join *mutual* relations of care. In contrast, the arrival of palm oil plantations into Merauke and the following uncontrolled proliferation of oil palm - its unilateral, 'invasive' imposition of its presence on others – cast "the reciprocal relations of Marind and their amai kin into lethal cosmological imbalance" (629). This indicates to

6. In comparison, Joks, Østmo, and Law (2020, 308) explain that the beings in a *meahcci* demand and deserve respect, which requires negotiations with and not about the land.

me that the physical landscape is not only dependent on ontology but interdependent such that material changes can also lead to inner crises of meaning. My point is appropriately circumscribed by Swanson (2018, 152, 155) who sees domestication therefore as a process of disorientation of both individuals and multi-species communities, a process of disrupting the ties of humans and non-humans to landscapes while disrupting the response-ability of the landscape.

In addition, the Marind case indicates that the categorisation as 'native' or 'invasive' has a dynamic dimension for Indigenous people because species evolve together and 'find themselves at home' over time. This can be contrasted to a static conceptualisation of nature as demonstrated in the monograph of Ogden (2021, 12) on colonialism and environmental change in the Tierra del Fuego region. Here, she describes the Fuegian landscape as marked by practices of territorial inscription through domesticated animals. One example consists of the description of how the colonists' pigs and cattle uprooted and flattened the land and thereby, erased the topographic traces of the Indigenous people (43): "All it took were a few pigs and some cattle, and before long, thousands of years of Yagán history were erased from the landscape" (41). In consequence, the impact of the domesticated animal grazing on the pampas is tolerated today because this kind of lifestyle is an important part of the myth of this region that arose after the colonisation began (81). Thus, these commodified animals and plants are rarely categorised as 'invasive' even as they significantly transform local ecologies: "As long as these plants and animals know their rightful place as workers, laborers, and providers, and controlled commodities, their presence is tolerated" (81).

This can be contrasted to a second example in which Ogden illuminates the role of beavers in transforming the Fuegian landscape through felling trees and building dams. Here, beavers were also brought by colonialists in the early stages of the settler project as the means for 'world-making' – for making the land profitable (68). Gradually, the settlers lost interest in the 'beaver business' such that the animals began to spread over the region due to the lack of predators (68). In contrast to the cattle on the pampa, the beavers are yet considered 'invasive' today because of their impact on the local forests, with the consequence of being hunted. However, not necessarily because of the loss of forest in itself but because trees have an economic value (74). Here, the distinction between 'native' and 'invasive' species rests on a conceptualisation of nature as not only fairly static, such that killing is justified by the 'unnaturally' accelerated rate of change (64–5), but also as

without non-human participation such that it becomes up to humans to decide on what species is considered 'native'. Thus, inside the paradigm of domestication as control and containment, the corresponding conception of nature disorients humans from the actual, dynamic 'becoming' with others – like the Marind think and act – with respective effects on the shape of landscapes (compare Swanson (2018, 153)).

This disorientation from nature is closely related to *conservation* as another practice of mediating a specific conceptualisation of nature and material changes. I will elaborate this point using the work of Fairhead and Leach (1995) who investigate how narratives influence actions on the landscape among others for the forest islands of Kissidougou (Republic of Guinea). In particular, they argue that narratives have material effects on environments not only for supporting plantations and 'violent' domestication but also to declare environmental degradations and justify policy responses in the form of conservation practices (1023). Here, I follow the authors to define narratives as "stories of apparently incontrovertible logic which provide scripts and justifications for development action" (1023) such that I consider them to be part of our categorisation of the world which informs our concepts.

Fairhead and Leach report that the investigated landscape looks degraded from the outset because it consists largely of savanna and transmits an open, empty space especially "in the dry season when fires burn off the grasses and defoliate the few savanna trees" (1995, 1024). This impression informs the 'deforestation narrative' that leads 'Western' discourses. Here, deforestation is seen as universally bad not only for the soil on local level but also on larger scales by causing irregular water flows and contributing to global warming (1024). Further, it is fuelled by the perceived duality of humans and nature, in as much as the agency for degradation is "diffused into the ambiguity between culture and origin" (1025–6): cultures that lived 'in harmony' with the land at a certain past are considered as the original state so that everything and everyone that followed become potential reasons for instability.

The underlying conception of nature is therefore on the one hand what Cronon ascribes to the romantic period in Europe during which a reorientation towards 'wild' places occurred. In consequence, 'advocates of wilderness' argue for the protection of environments based on the idea of a principle conflict between the human and the non-human (Cronon 1996, 20). Here, the urgency of conserving a place becomes dependent on its 'beauty' as equivalent to not being inhabited by humans (24). On the other hand, the conception is

informed by the colonial past of Europeans in Africa. Here, ecological conditions are considered themselves static, and traditional African societies are seen as historically integrated in nature. Thus, environmental change is not only linked to apparent social (human) disbalance through population increase and modernity but also carries a very profound moral message with conservation as imperative (Fairhead and Leach 1995, 1032). In addition, the large-scale lens of Western scientists thereby lets the local environment seem like a mere dot in a larger picture of the general 'Earth system' that needs to be saved from collapsing. The arising conservation imperative considers 'outside' conservation of local ecologies according to regional but also trans-regional interests as appropriate. Subsequently, the practices shaping the local landscapes are therefore necessarily non-specific and overwriting. In the case of Kissidougou, this amounts to restructuring farming areas according to the 'value' of land for combating ecological crises, bush-fire control, prohibition of tree felling through legal protections, as well as reforestation with plants that are considered beneficial (1026).

These interventions are yet often harmful to the overall responsiveness of the environment when considered in larger time scales, which often leads to an ever-increasing dependency on human interventions. This, in turn, hints at the issues of the 'Western' conceptualisation but also the imperial mode of knowing that necessarily overlooks local evidence and relations. To explicate this point, Fairhead and Leach (1995) contrast this narrative with a more nuanced one based on a particular, open-minded investigation of the case in question. Here, the authors reveal among others that local land use can be vegetation-enriching as well as degrading. Also, the environmental management in Kissidougou has always been less shaped by human-community practices on nature than by more diffuse sets including the human as well as the more-than-human world (1027). The conceptualisation of nature in the local cultures allows thereby for participatory practices in terms of landscape-enrichment-through-use: they acknowledge that environments are in continual transition, and their trajectories are determined by the history of their vegetation and present socio-ecological conditions (1032). In working with, and not against, the local ecologies of fire, soils, vegetation successions and animal dynamics, these practices shape the landscapes dynamically and more locally appropriate (1028).

To conclude, I return once more to the triad of 'mutual becoming' from the beginning of the essay to maintain that our concepts and modes of knowing nature are related to both, practices and the environment including more-than-human participants. Throughout my

argument, I confirmed this proposition while also elaborating that all dependencies are mutual at least to a certain degree. As Haraway (2016, 12) reminds us, "It matters what stories make worlds, what worlds make stories".

I want to be careful not to overly generalise, yet I still think that I could identify two conceptually distinct stems with very different material outcomes. First, a modern, capitalistic, 'Western' thinking that is mostly ignorant of the ties to the more-than-human world. Here, nature is conceptualised as universal, scalable because linear as well as controllable and containable because passive. I traced the effects of this thinking through the lenses of plantation, domestication and conservation practices. Thereby, I could show it leads to a simplification and standardisation of thought and land with eventually negative environmental consequences including for non-human beings. Here, the justification for these practices is based on either possibility, in the case of domestication, or necessity, in the case of conservation. In contrast, 'Indigenous', local thinking and knowing are embedded in land and cherish a participatory ontology. As such, nature is conceptualised as a dynamic process with various actors as well as mutual (response)abilities. The presented material effects are what some environmentalists today would call 'sustainable': diversified and self-enhancing environments. In addition, this concept of nature leads to a less clear distinction between the different practices because both, domestication and conservation are considered the same mutual enabling of flourishing.

In any case, my discussion reveals that nature is not a universal concept or one that needs necessarily to be discovered through the lens of Western epistemology. This matters because of the different effects on the environment and non-human agencies. Consequently, hope in the current planetary ecological crisis is therefore anchored in overcoming the dualism of culture and nature as two separate realms at which Indigenous conceptions of nature are vivid examples. Yet, the interdependency of materiality and thought prevents a simple overtaking of a participatory ontology, like the example of the struggle of the Marind people with oil palm showed. In addition, my discussion of *meahcci* indicates that presupposing a clear distinction between land and thought, even if related, is already a colonised interpretation of both because it ignores the way land is included in enabling thinking for Sámi people. Here, I showed with the example of Paredes how productive these common, multi-species collaborations can be if ontological and epistemological fault lines are abandoned.

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