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MORE THAN HUMAN

AURA WORKING PAPERS / VOLUME 2

WRECKAGE AND RECOVERY: Exploring the Nature of Nature



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ANNA TSING

WRECKAGE AND RECOVERY:

Four Papers Exploring The Nature Of Nature

"I would sooner expect a goat to succeed as a gardener than expect humans to become responsible stewards of the Earth." This provocative quotation from Gaia hypothesis founder James Lovelock begins Bruno Latour's six lectures entitled "Facing Gaia" (Latour 2013). And indeed, as Latour argues, wreckage caused by humans has been great. Latour mentions climate change, the channelization of rivers, erosion, mass extinction, deforestation, and the acidification of the oceans, among others. I agree: we have a big problem, and no simple solutions loom. It is an important time for scholars to renew our attention to the so-called natural world.

Latour's lectures help us. Latour argues that our first step is to disengage from modernist understandings of Nature as passive and transcendent and to instead embrace the contested and provisional worlds in which we participate. Moving beyond the truth claims of both science and religion, he draws us into a new gathering, the "people of Gaia," that is, those who accept the local, historical, and unsettled features of their engagements with the world. The authors I have the privilege to introduce in this working paper are certainly "people of Gaia." They would each agree with Latour's key premise: what once was imagined as Nature must be reconceptualized within its constitutive contests. Yet they also draw us out of Latour's fold. They reopen Latour's question—"Who are the people of Gaia?"—with quite different answers. "What brings such a gathering together?" "How do participants speak to each other?" And "what role might there be for scholars?" In these particulars, these papers disagree with Latour's framework, showing an alternative route out of modernist Nature. Through the play of cohesion and contrast, then, Latour's lectures help me show what is exciting and original in the set of papers that follow, which explore the nature of nature.

WRECKAGE AND RECOVERY: THE WORKSHOP

These papers formed part of the December 2013 workshop, “Wreckage and Recovery: Living with Change.” The workshop, held in Oslo, was a collaborative effort between the University of Oslo’s program in Technology, Information, and Knowledge (TIK), its Anthropos and the Material program, and Aarhus University Research on the Anthropocene (AURA). The call for papers targeted Nordic anthropologists and science studies scholars and was composed by Tina Talleraas, Sylvia Lysgård, and their associates at TIK. It includes the following:

Wreckage and recovery, especially when paired up, are two words that give a number of associations. They resonate with extinction and survival; pollution and adaptation; demolition and re-building. Or we start to think about loss and rescue of the existing, human practices of destruction and innovation. Common for all these pairs is the connection to the tearing down or building up of something specific.

We live in times where climate concerns are wide reaching, affecting the everyday life of people and politics. We use biotechnological tools to produce new forms of life that challenge understandings of life and nature as we used to know it. We live with imperial legacies that continue to produce contested landscapes. We are forced to confront the complex interlink between devastation of ways of life, human and non-human, by human activities, as well as their associations with various forms of technoscience.

These examples illustrate the theme for this workshop, which has broad empirical grounds connected to either wreckage or recovery, or both, but with a shared focus on discussing how such issues can be studied fruitfully with tools from STS and anthropology. We seek works in progress around questions of:

- how ruining of present conditions (natural, systemic and/or political) affect us and force us, by necessity or creativity, to deal with new conditions of living and being human;

- how human interferences leave footprints on land and climate, where we negotiate, appropriate or oppose these developments;
- how contested social-natural landscapes emerge within structures of political economy and post-colonial formations;
- how we co-habit (or not) with other kinds of species in times of loss and restoration;
- how various people live with, negotiate and argue over change through strategies of restoration, policies for mitigation, or alternative practices of co-habitation.

We invite STS scholars and anthropologists who recognize this broad research interest in their own work, either because of suitable empirical material, methodological approaches or theoretical perspectives on how to study change and adjustment. Some of us focus on broken and disordered landscapes, some follow endangered species on converge of extinction, while others attend to constructions of nature and animals in science. Perhaps you write about industries or technological solutions, follow science and policy processes, past and present, or seek to understand political ecology or capitalist and post-colonial imaginaries. We welcome you to join in on this workshop.

By pairing “wreckage” with “recovery,” the workshop set terms that stymied radical declarations of environmental disaster. Still, I’ll admit that I was surprised that among the ten papers presented, not one described “wreckage.” A majority of the papers were ethnographic and historical accounts of efforts at “recovery,” and, in general, the recovery turned out to be at least as problematic as the wreckage it aimed to address. A few papers described resource use and extraction, but they showed negotiation and mitigation, rather than ruin. To the extent this consensus suggests a “comfort zone” for anthropology and STS, I find it cause for concern. Is

wreckage off limits? I come back to this question at the end of this introduction. For the moment, my job is to discuss what we offer, not what we miss.

The four papers chosen for this working paper highlight the strengths in the workshop as a whole: these are sophisticated analyses of how “nature” comes into being. Rather than setting up a passive backdrop for human activity, the workshop papers described everyday practices, mobilizations, and contests through which natural objects emerge, at least tentatively, within world-making projects. One of the most exciting features of the workshop was its attention to history: the papers showed changing articulations of nature within shifting winds involving institutions and individuals, politics and culture, and the nexus of interspecies arrangements that make particular articulations possible. We were also treated to some fine examples of the nuanced interaction and alertness to detail that makes the best ethnography. Our conversation was animated by participants’ willingness to move back and forth between the tiny particulars that emerged from research and big questions of theory and method. The four papers here are particularly beautiful examples of this back-and-forth process. Each offers a careful case study, and each simultaneously reaches out to urge shifts in conventional thinking about knowledge, social practice, and how humans inhabit the earth. I take the liberty of using Latour’s Gifford lectures (2013) as a foil to illuminate these insights.

FACING GAIA: LATOUR AND SOME ALTERNATIVES

Latour begins his story with the claims to knowledge of first science and then religion. These truth claims mirror each other, he argues—and they strategically ignore the conditions under which each actually produces knowledge. Only when we accept the partial, contested, and political nature of knowledge can we proceed beyond the impasses set in our path by science and religion. Then how might we know the earth? Latour offers two clues. James Lovelock’s Gaia hypothesis shows us an animate multispecies earth in which humans are not the only historical actors. The philosophy of Peter Sloterdijk reminds us that human affordances place us on the surface of the earth, with all the limitations of that position—not looking down from the sky, as modernist thinkers willed for us. It is from these clues that Latour

assembles his people of Gaia in a war of the worlds that pits them against modernism's Humanity and Nature. This war of philosophy, he argues, might make all the difference for the fate of the earth.

Latour is bold, clear, and provocative. This is an incredible gift. Among other good things, it means that he can be an excellent foil through which it is possible to clarify alternative formulations of the problem of nature. The diagrammatic nature of Latour's argument provokes alternative diagrams. His clarity, too, provokes attempts to be clear. In the spirit of these useful provocations, let me offer a skeleton view of how the papers presented here disagree with the terms of Latour's argument. The next section, which introduces the papers, will explain and illustrate. Here, however, I hope to spark your interest with the starkest outline.

The papers' alternative course for escaping modernist Nature might be characterized, against Latour's formulations, as follows:

- (1) Human affordances: Species agilities develop through histories of power and difference—not universal humanity.
- (2) Politics: Mobilization creates articulations across shifting intersectional positions—not mindless confrontations with aliens.
- (3) Language: Words and concepts gain meanings through the struggles in which they are engaged—not transcendent underlying logics.
- (4) Scholarly practice: Scholarship develops in encounter and collaboration—not towers of anointed men.

I hope I have caught your attention. To hear what these mean, read on.

WHERE SHOULD WE LOOK FOR HUMAN AFFORDANCES?

Rune Flikke has written an extraordinary paper about smell. In the 1870s, in King William's Town, South Africa, British settlers planted eucalyptus trees because they thought the aroma of eucalyptus would counteract the odors of native life, which, they imagined, carried disease. Flikke shows that medical and environmental discourses overlapped here, through smell, as earlier settler interests in tree planting for visual amelioration of the landscape transformed into social hygiene.

The strong smell of eucalyptus made it a tool for colonizing the landscape, and effective against both its human and nonhuman dangers.

Flikke is explicit in his consideration of smell as a human affordance, that is, a way that humans contact and join the world. Drawing on Tim Ingold, Flikke writes (28):

“As the ground we move on, landscape is one of many surfaces in the world, where respiration is the very foundation for life that continuously disturbs a neat distinction between a solid ground and the more elusive atmosphere ... When we walk, breathe, feel the wind embrace our bodies, the scents of trees, flowers and the sea, we mingle with- and partake of these aspects of our surroundings ... [T]he olfactory traces of the eucalypts that emanate from the individual trees extend their presence through the air until they merge with us through respiration”.

And yet Flikke’s analysis offers a sharp break with that of both Ingold and Latour, who is thinking through Sloterdijk. Both Ingold and Sloterdijk imagine human affordances as universal, species-defining agilities. Yet smell for Flikke only makes sense through histories of race, class, and colonization. The smell of eucalyptus is the smell of hygiene for British settlers; it is a reaction against native smells, carriers of disease. Flikke even notes that African ontologies may have helped craft this British sense of smell: South African hunters followed prey through smell. If, as he states, “the scents that extend through the air... are essential for our foothold in this world” (30), it is through historical webs of colonization and the racial categories and settlement patterns they put into place. To inhale “health,” British settlers had to learn it in opposition to other odors. Colonization and species agilities made each other. Species agilities develop through histories of power and difference—not universal humanity.

This makes a difference in our analyses. It is not an ornament on a general theory; it changes the theory. It allows us to see something completely different when we look at “the human.” The “people of Gaia” Flikke calls up are fragmented not—as for Latour—because they line up for-versus-against particular matters of concern, but

rather because they embody difference and inequality from the start, through the histories that make them. In relation to modernist Humanity, some are barely human at all, despite their species, and this might block their entry when joining the Latourian circle. Perhaps it is easiest to appreciate this more deeply in turning to the question of politics.

WHAT IS POLITICS?

For inspiration on politics, Latour turns to Carl Schmitt, whose idea, as Latour explains it, is that politics is enmity against the stranger, the other, in one's midst. This definition inspires Latour to gird his loins against modernists, whose definitions of Nature and Humanity he opposes. I defer discussion on this battle against words to the next section. But here it seems useful to consider: what kind of politics is this? Certainly it is one in which one must define the enemy in advance of the battle. It is a politics that precludes repositionings of friend and enemy in the midst of the conflict.

For a different picture of politics, it is useful to turn to the delightfully rich ethnography of Jon Nyquist's paper on the Kimberly Toad Busters, a group of Western Australians who have gathered to manually dispose of all the cane toads they find. Cane toads are an introduced species in Australia, and they both poison native predators and crowd out native competitors. The Toad Busters argue that they impoverish the biodiversity of the landscapes they come to dominate. Nyquist's goal is to listen carefully to what the toad busters say and watch what they do. He is nervous about letting "context" overwhelm what his informants show him; he wants the characteristics of the toads to emerge from the Toad Busters' action and speech. Latour, I imagine, would approve. Yet Nyquist's careful attention to toad busting shows him a politics of shifting characterizations that continually reshapes the humans as well as the toads. Enmity is unstable, as is alliance.

Consider what happens when the mainly white Toad Busters begin to work with aboriginal rangers. Nyquist records an interaction in which a white Toad Buster interviews an aboriginal ranger, who explains that the toads have imperiled traditional practices by destroying bush tucker (41):

“...we grew up hunting, you know, goannas and...old people used to teach us, but there’s nothing, if the toad is gonna go throughout the Kimberley, there’s nothing left for our young ones and their young ones to hunt, and there’s nothing to teach them cause there’s nothing there [...] our kids would forget our culture and how to hunt and everything....”

Nyquist notes the white interviewer’s reaction (42):

“He says this is just the sort of stuff he wants in these films and he is very happy that Trevor said it without him having to put words in his mouth. All the rangers have emphasized traditional hunting and that their bush tucker and traditional practices will be imperiled, which Michael thinks is excellent”.

Here, for a moment, is a fragile alliance, a Gramscian articulation in which aboriginal desires for hunting and white Toad Busters hopes for continuing biodiversity come together. As Nyquist notes, the articulation is hardly stable; on other occasions, there is discordance. Yet such a politics must be handled quite differently from Schmitt’s rejection of the stranger: the identity of the stranger—and the self—constantly shifts.

In Nyquist’s ethnography, this happens all the time. The scientist becomes just another storyteller as his toad-busting buddies tame him as their ally. With their mutually exchanged stories, his authority slips into the background. The Toad Buster’s president becomes a politician by weaving toad busting into talk of the poor conditions of aboriginal communities—talk crafted to draw the Minister of the Environment into their camp. In this politics of shifting identities, positions are continually reworked. Articulations are created through intersectional potentialities—points where overlapping interests might, or might not, be formed. Mobilization creates articulations across shifting intersectional positions—not mindless confrontations with aliens.

HOW DO WORDS GAIN THEIR MEANINGS?

It is time to return to Latour's battle over words and concepts. Unwilling to stop at building a new vocabulary, he wants to go to war against words and concepts he does not like. But where do words and concepts come from? In Latour's war, they are effects of a mode of existence: Nature and Humanity emerge from the algorithms of modernity. Other understandings of words and concepts are possible. For example, what if words were tools of the battle rather than the reason for the battle? Might this not offer a different approach to making peace?

For a glimpse into this kind of language, it is useful to travel to southern Africa, where "nature" has long been a rhetoric employed by white settlers to displace black residents from their livelihoods. The term comes with passionate affect for both advocates and detractors; when tempers are so short, it is hard, at least for me, to see the situation as one of governing logics. Instead, histories of colonialism and care, and of alliances made and broken, are continually evoked. "Nature" is a fighting word.

Knut Nustad takes us there in his passionate evocation of the battle over the Dukuduku forest. This is not one forest, he explains, but three conflicting ones (64):

"One is a primordial forest first pushed close to extinction by industrial agriculture and forestry, and whose remaining enclaves are being cut down by squatters who have no appreciation for nature. Another forest is being reclaimed by people who have been forcibly evicted from it, first in the name of forestry and more recently in the name of conservation. Yet a third forest has been successfully converted into sugar cane fields and industrial forestry through the planting of fast growing species".

In the conflict over which of these three forests will be allowed to flourish, "nature" is a tool. Advocates for conservation use it to attract their international allies. Returning evictees instead evoke ancestral homelands. Industrial farmers appear to ignore all this, perhaps playing on their ability to win by appearing to stay out of

“politics”; the conflict thus becomes reduced to “communities versus conservation.” Meanwhile, conservationists propose new words, hoping to mobilize more allies. They speak of “community-based conservation,” or of building a system of “trade-offs.” However, as Nustad tells us, their mobilizations call to big players and rarely touch the poor. Nustad stands with the returning evictees, who see these new words as further cover-ups of bad intentions. New words have entered the battle, but practical alliances lag behind.

Words in battle can conjure communal sympathies, entrenching differences. But their use in this fashion also calls attention to the possibility of identity-shifting alliances. Perhaps Nustad and I disagree on this, but, to me, the solution is not conversion to a new philosophy, but rather practical alliances in which new articulations might be made. Articulation, as Stuart Hall argued, is double: linking and speaking (Hall 1996). Words take on new meanings in the process of politics. Articulations change who we are. Words and concepts gain meanings through the struggles in which they are engaged—not transcendent underlying logics.

WHAT IS THE WORK OF SCHOLARS?

These facets of an alternative approach to a contested nature come together further when one considers the problem of scholarly practice. Here the paper jointly written by Nathalia Brichet and Frida Hastrup is particularly insightful. Brichet and Hastrup report on their visit to a gold mine in Greenland. Their goal is to learn about natural resources without too-quickly foreclosing curiosity; they are explicit in allowing the paper to raise more questions than answers. At the center of their approach is a method they call “lateral curiosity,” a form of engagement with informants as interlocutors (82):

“Lateral curiosity, then, is not just a matter of being curious personally, but also of trying to make our collaborators curious about the world we share and often take for granted and of being willing to consider alternative ways of living.... Lateral curiosity nurtures a kind of common ground, collaborative in nature...”

This method has some resemblance to Latour's actor-network theory, in which he asks researchers to eschew contextualization to follow informants into their networks. Yet Brichet and Hastrup diverge from this in two important ways. First, they posit scholarship as a form of collaboration, thus making an implicit criticism of the figure of the heroic individual researcher. Second, they refuse closure not merely on the nature and extent of networks but also on basic ontologies, that is, philosophies of being. Rather than allowing researchers to posit basic philosophies for their informants, as in Latour's approach, Brichet and Hastrup require informants to engage with them in making philosophies as well as categories, things, and networks. This produces much more mix and play in philosophy, and it becomes difficult to operate with the kind of ontological dichotomies that inform Latour's Gifford lectures. Furthermore, because Latour has crafted the Gifford lectures in a classic version of the civilizational work of philosophy, Brichet and Hastrup's approach becomes good to think with in imagining alternatives. Scholarship develops in collaboration—not towers of anointed men.

The Gifford lectures are classic because Latour makes his points by standing on the shoulders of giants. Not anyone can qualify as a giant of course: it takes a particular kind of masculine Euro-American. The exclusions are constitutive. Latour is unable to cite a more diverse set of thinkers if he aims to build a civilizational tower. Ironically, the tower points toward the sky; Latour's practices of knowledge production must be covered up—in just the way he analyzes—to create the truth claims of the civilizational tower. If all its knowledge is collaborative, the tower collapses into a bush.

Perhaps it is a good thing if this leads to the fall of civilization. Brichet and Hastrup show us how to work with bushy knowledge. Their approach can be called feminist, not just because it opens a door for women researchers, but also because it works against that powerful form of masculinism tied to the imagined advance of Western civilization. Ontological claims are civilizational claims; their clarity collapses in the anti-civilizational method of lateral curiosity, which produces mixed-up fragments. If I follow Brichet and Hastrup, scholars must scavenge in the ruins of civilization for

collaborative knowledge. Indeed, this is where we might best find the remains of nature.

WATCHING NATURE EMERGE

Taken together, the four papers make important strides in articulating methods for studying the nature of nature. Two conjunctures seem worth attention before I turn readers loose. First, the papers by Nyquist and Brichet and Hastrup come together in refusing to know too much in advance. Nyquist worries that the concept of “invasive species” assumes too much; Brichet and Hastrup have the same worry about “natural resources.” In research in which strong conceptualizations have blocked good description, then, they show us how to learn without carrying too many presuppositions. I think of this as the method of infinite patience. The job of the researcher is to work carefully and unobtrusively with informants, letting them set the terms of the encounter.

The papers by Flikke and Nustad address a different problem: the erasure of earlier histories in assessments of the present. Conservationists look at a forest and forget the residents who were evicted. One’s nose experiences a smell without tracing the associations that inform its pungency. These two papers show us how to bring histories into the present, infilling the present with the traces of earlier interactions and events. One might call this the method of historical retracing. The researcher walks the tracks of the past even in the present.

Each of these methods is a necessary step in watching nature emerge. I appreciate and learn from them. But let me end with stray worries: Are these enough for understanding the continuing damage to the livability of our planet? Might there also be an anthropology of wreckage, and, if so, how would it relate to the forms of patience and historical retracing we strive to offer?

In asking such questions, Latour’s Gifford lectures return as an ally. One of the bravest aspects of the lectures, to me, is Latour’s argument that we should live as if the end of life on earth as we know it was coming. We should not be afraid, he argues, of accusations of being apocalyptic; instead we should use the apocalypse as a trope to heighten our awareness. Of course, we should be delighted if our

expectations are proven false. But this hope should not get in the way of describing terrors. This argument seems to me an important provocation for anthropologists. My guess is that one of the main reasons anthropologists do not describe “wreckage” is for fear of being called names—not only apocalyptic, but also romantic, and, worse yet, stupid. Indeed, anthropologists who make big statements have often been wrong, and sometimes stupidly, shamefully so. None of us wants to follow in those footsteps. And yet the fear of being called stupid has stopped our discipline from saying anything at all about environmental destruction. Ironically, a discipline that prides itself on its radical stances has become one of the more conservative disciplines when it comes to ecological wellbeing. We don’t like to say anything stronger than “Everything is complicated.”

I leave readers then with a challenge. Why are we so afraid of reporting wreckage? Imagine earlier terrible times, perhaps the Holocaust or slavery. Do we want to be among those who could only say, “Everything is complicated”? And what about nonhumans as potential allies? One of the reasons anthropologists get stuck in giving equal weight to every side of environmental controversies is that we have been unwilling to make common cause with threatened landscapes of plants and animals. We report every side of the controversy except theirs. Perhaps it should be our job, too, to learn something about their livelihood practices and interspecies relations—as we do for humans. These potential allies might make a difference in the stands we are willing to take. Infinite patience and historical retracing would be good guides.

Working papers are an invitation to imagine trajectories-to-come within our thinking and writing. These four papers help me muddle through my own scholarly conundrums, even as they set high standards for analysis. I invite readers to both enjoy these papers and to plunder them, as I have here, to puzzle through the riddles of our times.

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RUNE FLIKKE

SMELL OF DECAY, SCENT OF PROGRESS:

Eucalyptus as a Public Health Actor in Victorian South Africa

In this paper, I will outline a hitherto neglected field of study regarding alien species in South Africa. By combining work done by historians and geographers on the aspect of introduced species and landscape alterations in South Africa with work by medical historians, I intend to show that there is a considerable overlap in these studies. Two topics regularly surface in work on introduced species in South Africa, namely the economic rationale and the introduction of trees as landscape modifiers. By outlining these trends alongside medical discourses I will point out how tree-planting in general, and the introduction of eucalyptus in particular, was also pitched as a public health initiative.

To a large extent, the importance of the changes I outlined above is reliant on the cultural and historical contexts that trees and woodlands are wrapped up in. With this historical backdrop, I will suggest that eucalyptus trees are social actors that shape human life-worlds. In order to outline that argument I will rely on Ingold's phenomenological approach to "earth and sky" (Ingold 2011), and argue that it paves the way for a better understanding of the important aspect of the olfactory presence of eucalyptus trees as active mediators shaping human action and interaction in public places. Viewed within this theoretical framework, I will suggest that the importation of eucalyptus gains new significance in the context of South Africa's turbulent and oppressive racial history.

PLACING THE STORY

Exotic species never travel alone; they are bundled together with other ideas, experiences and economic conditions such as market access, as well as the accompanying microorganisms. These bundles will inevitably vary greatly over

time, but are also affected by socioeconomic changes and events such as wars, conflicts and epidemic threats. Furthermore, the many different ways species travel will also provide a context that influences human experiences and therefore needs to be discussed and carefully delineated.

The ethnographic focus will be King William's Town in the Eastern Cape. I first traveled to the Amathole Museum in King William's Town to do some archival research on the Zionist movement and the uses of soap in healing rituals (Flikke 2003a; 2003b).¹ In conducting my research I discovered that Jeyes Fluid, a popular detergent used in contemporary healing rituals, which was first imported to King William's Town during a sanitation hysteria in the 1870s (Laidler and Gelfand 1971, p. 362; Flikke 2003a). I did not find much information on Jeyes Fluid, but to my initial surprise eucalyptus trees entered the narrative in much the same fashion I had anticipated soaps to do.

Today, King William's Town can be described as a small sleepy town approximately a 30-minute drive inland from East London, in the Eastern Cape. The town was the capital of British Kaffraria from 1847 until 1865, when it was incorporated into the Cape Colony. When my story starts in the 1870s, it had been a settlement plagued by decades of unrest and uncertainties. King William's Town was located in the midst of prolonged border wars, and was the place where the first native hospital of South Africa was built. Its physician, J.P. Fitzgerald, was an English doctor who settled in New Zealand, but who moved to South Africa after his wife passed away. Among other things, he pioneered hospital architecture, campaigned for African health and was met with opposition, as he regularly treated Africans alongside European patients. Additionally, the region became the birthplace of the African Independent Churches when the first congregation broke away from the Methodist church in 1874. This occurred 18 years after the prophetic Xhosa movement, referred to as the Great Cattle Killing of 1856–57 devastated the same area (Peires 1989). Many decades later, the ANC and the Black Consciousness movement, which was centered around Steve Biko, who was born in King William's Town, surfaced in

¹ The Zionist movement is a Christian group usually labeled as part of the African Independent Churches. In search of their own promised land, Zion, where they can live free from white paternalism, they have broken with the mission churches.

the same area. In short, it is a small seemingly insignificant town that has played a key role at important junctures in South African history.

The actors in my story are British settlers and eucalyptus trees. I will start with the former. Most of the literature on Colonialism, health and Africa focus on the death and destruction associated with Africa as the “dark continent” and the “white man’s grave” (Comaroff 1993; Curtin 1989; Feierman and Janzen 1992). As elsewhere in the colonial outposts, the European settlers in South Africa were preoccupied with health (e.g. Wood 2005). However, there are important discourses that connect colonial expansion with improvements in European health. Notaries such as Cecil Rhodes and Francis Galtung, Darwin’s ambitious younger cousin and the founder of eugenics, were both venturing to Africa in search of better health (Fancher 1983, p. 67; Gillham 2001, ch. 3–4). Rhodes was recognized for his sharp mind and feeble body, and was advised to travel to southern Africa in order to get away from the London smog and find a climate where his physical limitations would not stand in the way of his sharp intellect. The dry inland climate was a health benefit, which in the latter half of the 19th century drew an ever-increasing number of Europeans to South Africa, many of whom were consumptives (Packard 1989, p. 38–40). In addition to the many travelogues that contained chapters on health (e.g. Bryce 1897, ch. 1 and 2), a number of books and pamphlets were published around the turn of the 20th century to promote South Africa as a health resort (e.g. Fuller 1892; Marshall-Hall 1908; Scholtz 1897).² Similar conceptions of colonial life and health have also been noticed in New Zealand and elsewhere (Wood 2005, ch. 1).

South Africa is a vast country with a large biodiversity and varied climate. While the Cape and its interior have been described as a “health resort,” the famed good hunting grounds along the northeastern seaboard were feared as the “white man’s grave,” due to malaria and other tropical diseases (Nustad 2014). King William’s Town has long been free from malaria, and with a healthy, dry climate the arrival of the eucalyptus, notorious for its thirst and ability to “drain marshlands” and combat

² A noticeable boom in these writings started after the Suez Canal opened in November 1869, and the flow of travelers who passed through South Africa decreased.

malaria (Doughty 2000, pp. 36–41), would most likely be differently received than in the wet, malarial marshlands of the northeast. Consequently, my story of eucalypt transplants is one of several.

In pre-colonial South Africa, the native forests never covered more than 1% of the territory (Carrere and Lohmann 1996, p. 198). At the time, there were distinct discourses that associated this dry and barren South African land as health generating. Actually, the word “savage” is etymologically derived from the Latin “silva,” meaning “a wood” (Thomas 1984, p. 194), which is linked with a strong medieval tendency to associate forests with “danger,” “disease,” and as places “for animals, not men” (ibid.). Forests were places of “darkness,” associated with “savagery,” “demons,” and places where mad people would be left behind (Philo 1997, p. 51). In such a context, the Cape and the barren interior plateau would be perceived as healthy.

Simultaneously, there were counter narratives that surfaced in South Africa. There are long historical lines in Europe that connect trees and forests with health, and as early as the 1st century, Pliny the Elder (A.D. 23–79) associated woods with health and healing (Thompson 1978). Through a number of publications, the historian Richard H. Grove has established that tree planting and conservationism surfaced at an early stage in the colonial worries about declining forests and vulnerable tropical ecosystems. Grove has pointed out that the connections made between degrees of forestation and rainfall have a long history in Europe, and were articulated as early as at the end of the 17th century (Grove 1995, ch. 4). These worries appear to have taken on a new significance when faced with colonial “others” — be it people, climate or species. Grove has narrowed these worries down to about the 1790s for the English-speaking colonies, and pointed out how by then they constituted a coherent expression as “desiccationist theory” (Grove 1997, p. 149f.). The desiccationist theory postulated a causal relationship between forests and rainfall, and argued that deforestation led to drought and climate change, with soil erosion as an end result (Grove 1989). Hence, it was believed that forests generated rain, and that drought was a consequence of human practices — which in the colonial

context was usually reduced to native culture. Moreover, traces of desiccationist thinking are clearly visible in the civilizing mission.

TREES, CHRISTIANITY, CIVILIZATION AND COMMERCE

By the time the first missionaries from the London Missionary Society (LMS) entered South Africa at the beginning of the 19th century, the negative medieval attitudes to forests and woodlands had long changed, and the dryness and barrenness of the land took on a particularly negative significance. As documented by the Comaroffs, the non-conformist missionaries soon started recreating the nostalgic image they had of the culture and landscape of the rural yeomanry they had left behind (Comaroff and Comaroff 1991, 1997; Comaroff 1989). An important part of the civilizing mission was to decorate the landscape with trees and plants. It is vital to stress that this was far more than a symbolic act. In the Victorian habit of conflating surface with substance and moral qualities, they created civility, fertility and the sovereignty of the Christian God by changing African bodies and landscapes (Flikke 2001, p. 35). As a result, tree-planting regularly surfaced as a solution to some of the challenges the missionaries experienced with “African otherness,” as the British colonial gaze saw the South African landscape as “destitute and miserable” (Moffat 1842:66). In a study of the growth of conservation thinking during three droughts that affected Southern Africa in 1821–23, 1845–47 and 1862–63, Grove has shown how the LMS missionaries’ Robert Moffat — the father-in-law of David Livingstone — and John C. Brown directly linked in different ways the South African ecology to a wanton African culture in need of spiritual and cultural redemption. The underlying assumptions built on desiccationist theory, which used observations of climate and landscape to draw conclusions about local culture and morality. At the same time as the lack of woodlands in South Africa was interpreted as a sign of cultural inferiority, the shrinking forests of Europe were taken as a sign of European technological and cultural superiority (Adas 1989, ch. 4).

As Moffat’s biographer wrote, he “was no ethnographer or social observer, zealous to relate what he saw and heard. [...] his business was to move about with

disapproval of nakedness, theft, feasting and witchcraft, to convince people of their state as sinners” (Northcott 1961:75). During the severe drought of 1821–23, he interpreted the devastation as evidence of African cultural inferiority. Quoting Milton’s *Paradise Lost*, he drew on ideas of original sin, as he explicitly framed the dry, barren landscape he encountered in terms of a moral economy:

“[...] the beds of its waterless rivers, without viewing it as emphatically “a land of droughts,” bearing the heavy curse of

Man’s first obedience, and the fruit
Of that forbidden tree, whose mortal taste
Brought death into the world, and all our woe”. (in Grove 1989:166)

For Moffat, who looked at the region as “possibly the Garden of Eden”, the drought was self-inflicted and due to collective sinful transgressions implicit to African culture (Grove 1989, p. 170f). The nakedness of the landscape appeared to him as an offense along the lines of the naked African bodies. He therefore set about clothing bodies and landscapes, encouraging the growth of local species to “contribute to the beauty of a country,” as well as pioneering artificial irrigation and developing commerce, a cornerstone in the civilizing mission (Moffat 1842, pp. 331–332).

ALIEN TREES IN AN AILING ECONOMY

A significant break came with John C. Brown, who arrived at the Cape as an LMS missionary in 1844. His arrival coincided with a season of unusually good rainfall, but was soon followed by the drought of 1845–47. In 1846, he published an English translation of the missionaries Arbousset and Dumas’ (1836) descriptions of an Edenic southern Africa. In this publication, the authors suggested that pioneer missionaries should take good notice of the conditions of the people and land at the time of encounter, for the introduction of Christianity was bound to positively affect this relationship. Unfortunately the French missionaries walked right into the territory after years of good rain, and Brown published the account when the

devastation of the 1845–47 drought became evident, a coincidence that did not speak in favor of the missionaries (cf. Grove 1989). Brown left the Cape for England after four years, and occupied a position as a lecturer of Botany at the University of Aberdeen between 1853–62, only to return to Cape Town in 1862 to take up the position as Colonial Botanist. Again, it was unfortunate that he arrived at the start of the drought of the century, which was immediately followed by severe flooding. In late 1863 he published his Report of the Colonial Botanist. The report quoted Moffat extensively, yet he drew the unpopular conclusion that the droughts, floods, soil erosion and pasture deprivation were as much a result of the settlers' farming practices as it was the indigenous pastoralism (Grove 1989, p. 178f.). He concluded that reforestation was a necessity to secure further development of South Africa. On Monday May 29th, 1876, the Cape Parliamentary Session dealt directly with tree planting as being essential to stimulate economic growth, citing among other things the need to investigate "aboriculture from New Zealand." This was brought up again in a short article on September 25th 1876, which due to its rapid growth commented on the unparalleled expansion of eucalyptus worldwide. The policies and practices that followed were built on the forestation of South Africa with exotic trees.

There are uncertainties regarding the first transfer of eucalyptus to South Africa, but it was at the start of the 19th century. Zacharin mentioned that the first transfer came via Mauritius in 1803, and that there were a number of large eucalypts in the Cape by 1820 (1978, p. 92), whereas Carrere and Lohmann trace the transfer to 1807 (1996, p. 198) and Doughty dates it to 1828 (2000, p. 35). Though written material is scant, a number of private individuals appear to have imported seeds to be planted on their own estates from the early 19th century. By 1846, Joseph Dicks had planted eucalyptus and acacias in the Howick area of Natal (Witt 2005, p. 101). Witt argued that these early transfers were primarily introduced as "landscape modifiers," beautifying the offensive "bare brown hills of Natal" (Witt 2005), while being further diffused through personal networks and a growing number of tree nurseries. My archival work indicates that diffusions through local nurseries were proliferating from the mid-1870s.

As J. C. Brown argued, a scientific approach to forestry was also acutely needed to satisfy local demands for building materials and firewood, as the already meager forests in the region were rapidly depleted. Brown's tenure as Colonial Botanist coincided with the Great Depression of 1873–1894 (Wolf 1982, p. 303), which increased the colonial pressure to support the ailing European economy (Hobsbawm 1987, ch. 3). With the socio-economic changes that surfaced from the latter half of the 1870s, the colonial policy changed and was more directly tuned to the production of an economic surplus in the colonies, with the economic imperative a regular concern every time the issue of forestry was mentioned. The mining industry demanded a large amount of wood, as did the rapidly expanding railways, which needed both railway sleepers and firewood for the steam engines. The shipping industry and urban construction were also other big consumers of timber. Extensive tree planting projects were started around the mines and along the railway lines. In his publications as Colonial Botanist (Brown 1875, 1887), Brown to a large extent exchanged the truth of the Gospel with the truth of scientific analysis to help combat the environmental destruction. During the next century, the South African landscape was gradually transformed by the pulp industry, as it grew from its unfavorable ecological beginnings to become one of the top 10 exporters of pulp in 1994 (Carrere and Lohmann 1996, p. 43).

Though Moffat and other early actors seemed content to plant native trees, the Europeans never seemed very impressed with the local species. For instance, Bryce wrote that the native "trees are not lofty enough to give any of that dignity which a European forest, say in England or Germany or Norway, often possesses" (1897, p. 28). The native species grew slowly, did not cast much shade and therefore did not help retain much water. The general quality of the wood was also found lacking, and was hardly even useful for fuel (Bryce 1897, p. 26f.). This negative attitude to the colonial flora also dominated the European attitudes in the antipodes, which was replanted with European oaks and pines. A number of commentators have previously pointed out that British colonialists responded to displacement by altering the foreign landscapes, planting species that reminded them of home (e.g. Crosby 2003; Lien 2007, 2009). This process is clearly visible in South Africa as well.

In an editorial in *The Cape Mercury*, dated June 21st, 1876 the editor discussed the “transplant of trees,” stating that the English “cannot rest in a new country until they have made it look like home.” However, the South African story is interesting because it breaks with this observation in one important area — the majority of imported trees were not from Europe, but instead eucalyptus and acacias from the antipodes. The trees that had up until then largely been considered “unworthy species” in Australia and Tasmania (e.g. Hay 2002, p. 28) were the very species that dominated the South African forestry sector from the 1860s onwards.

Thus far, the argument has been fairly straightforward, as trees have been approached within both economic and symbolic frameworks. This fits well with the dominant literature on the subject, which emphasizes the economic rationale for planting the rapidly growing eucalyptus, as well as the felt need to ‘improve’ an alien landscape. As previously mentioned, there is another trajectory in this story. In a lecture on “South Africa as a health resort” held in the Royal Colonial Institute in London on November 13th, 1888 Dr. Symes Thompson discussed the danger of breaking new land in the colonies. Due to miasma being released from the earth (cf. Thompson 1978, p. 529), he suggested to plant “a belt of Eucalyptus [...] between the house and the irrigated fields [to act] as an effective screen” (Thompson 1889, p. 26).

EUCALYPTUS AS A PUBLIC HEALTH ACTOR

The eucalyptus genus consists of more than 700 species. With the exception of 15 that appear naturally in New Guinea and Indonesia, they are all native to Australia and Tasmania. The eucalypts are hardwood, evergreen trees that early on were considered anomalies since they typically shed their bark, and not their leaves. The leaves are covered with oil glands and tend to hang downwards, thereby providing patchy shade — a drawback in hot Australia, but not so in the more temperate South African “health resorts.” The eucalyptus oil contained in the leaves and bark gather around the trees and create a highly flammable environment that the trees have adapted to. As a species that has been characterized as a “specialist in

exploiting disturbance,” Adrian Franklin has pointed out how, the eucalyptus through what he coined “a dance of agency,” gradually replaced the rainforest through natural ignition over the millenniums (2006, p. 562) to the point of becoming so resistant to fires that they depend on them for reproduction (Hay 2002, pp. 210ff.; Pyne 1992). The flammable eucalypt oils are also known for their antiseptic qualities, and are used in a wide range of products such as soaps, industrial solvents, perfumes, foods and is widely recognized as a health product, as well as common ingredient in cigarette production (Doughty 2000, pp. 8f). The smell from the trees is strong and evocative. As one Australian I conversed with while browsing for books on the eucalyptus put it: “In summer or heavy rain, their smell assaults you — in a good way! I know I am home!” It was the olfactory aspects of the eucalyptus that surfaced as a key factor in the early transfers in the archival testimonies I encountered in King William’s Town.

From about Easter 1877, the newspapers and Borough Council meetings in King William’s Town were increasingly preoccupied with issues of health. The topics discussed and practices introduced included the incarceration of the “deranged,” by-laws introducing curfews for Africans,³ the introduction of public health laws, home baths, bathing and the use of soap. The issue of smell increasingly dominated the public imagination. As the local editor wrote: “This afternoon, New Town does not smell, it stinks.”⁴ To counter the offensive smells, the primary response was not soap, as I expected, but tree planting. The following letter to the editor of *The Cape Mercury* on April 16th, 1877 is typical:

“A few words may not be out of place on some of the hygienic conditions of the town. When we consider how thickly the inhabitants are becoming packed together, and the amount of filth that must of necessity be laying about hid from public eye, but not from public

³ By-law 34 A, amended at after an unanimous vote at a special Borough Council Meeting held in King William’s Town on Friday December 7th, 1877. Natives caught without “a pass signed by his or her employer [faced] immediate imprisonment, and such fine, not extending £5, as may be imposed by the Resident Magistrate; or imprisonment for a term not exceeding three months”.

⁴ The editorial from the *Cape Mercury*, dated Wednesday May 15th, 1878.

noses, some method should be made compulsory whereby such offensive matters could be *deodorised*. [...] the Sanitary Inspector should visit each house, and where it is neglect, a fine should be the penalty". (My italics)

Though we might recognize some of the sentiments from these historical fragments, there is a need to further ponder what the Victorian settlers actually smelled, and why the "deodorizing" eucalypts provided an answer to the sanitary scares they were plagued by.

The famous sanitary reformer Edwin Chadwick — the former secretary of Jeremy Bentham — gave us a clear indication of the experiences that were behind the olfactory traces I encountered in the archival material from King William's Town. Chadwick had successfully contributed to the mortality revolution by creating the underground sewerage system in London. By removing the stench of the city, he was certain to have cleared the air of the noxious miasma, thus improving health. Chadwick's doctrine echoed through the lives of Victorians of European decent all over the colonies:

"...all smell is, if it be intense, immediate acute disease, and eventually we may say that, by depressing the system and making it susceptible to the action of other causes, all smell is disease". (in Schoenwald 1973, p. 681)

The sensory orientation in the world Chadwick describes here is quite different from the contemporary emphasis of the visual consumption of the natural environment (Urry 1990). Though I have shown that there existed a strong trend to use tree planting as a visual landscape modifier — a trend it is easy to pick up on, as it resonates with the contemporary preference for the visual — the archival material has revealed a strong dependence on smell for orientation in an environment filled with death and disease, which was present to humans through olfactory perception. In such a landscape, people would use their noses to orientate as they moved about (Flikke 2005).

As Gell (1977) convincingly argued, the semiological status of the olfactory sign is highly ambivalent by nature. It is neither a universal “chemical communication,” nor a linguistic system where signs evoke meaning in relation to other signs in the total system. In other words, the meaning of the olfactory influence is not to be found in a paradigmatic relation to other smells. Rather, the olfactory experience evokes meaning through its relation to a context in the physical world. A smell thereby acquires influence as an “anticipatory sign,” which irretrievably guides the awareness to the source of its existence when sensed. This direct link leaves little room for idiosyncrasy and focuses attention on the source. Rachel Herz pointed to the socially constructed aspect of smells when she wrote that “nothing stinks, but thinking makes it so” (Herz 2006, p. 202). However, it is important for me to point out the fact that smells are processed in the limbic system — the emotional center of the brain. This ensures that human responses to specific and unusual smells are emotional more than rational, and in an evolutionary context has served to warn of dangers, as well as linking these experiences to memories in ways that secure an immediate response (cf. Hensaw 2014, ch. 3; Engen 1991). Olfaction is hence culturally and historically constituted at the same time as it is hardwired in ways that ensure prompt reaction, and not reflection and contemplation as Herz emphasized in the above quote. We do not think about danger — when we get a whiff of a disturbing smell, we react towards danger. It is important to stress that the introduction of eucalyptus happened during an epidemic crisis that can be described as a “sanitation hysteria” (Laidler and Gelfand 1971, p. 362).

I have suggested elsewhere that the early African travelogues preoccupation with landscape and climate are best read as medical notations (Flikke 2003). As “malaria” (mal aria ‘bad air’) testifies to, fevers were taken to be the result of high temperatures and humidity levels, which accelerated putrefaction and released the poisonous gasses of miasma (e.g. Pelling 1978; Sargent 1982). In this context, Gell’s insight that olfactory perception is best characterized as “typical rather than specific, general rather than particular” is important (1977, p. 28). The “stinking New Town” smelled of disease, danger and death, whereas the traces of eucalyptus in the air smelled of the promise of physical restoration, health and wellbeing. The

eucalyptus thus created a safe and healthy environment for the Victorian inhabitants of King William's Town.

I noticed that on July 4th, 1877 the question of tree planting was raised for the first time. A certain gentleman by the name of Mr. Honey had asked permission from the Borough council to plant trees in front of his house. In the discussion that followed, the issue was raised regarding the types of trees were allowed to be planted because a Mr. Boon added that "he had heard that the blue gum absorbed the miasma of towns." The fact that these olfactory traces are processed in the limbic system points us in the direction of ontology, and not epistemology. I will therefore turn the attention back to the eucalyptus trees, and suggest that there are significant gains to be made by breaking free from the "meaning-centered" analyses that have dominated previous anthropological approaches to trees in human social life (e.g. Rival 1998). To paraphrase Haraway, what I suggest is that trees are not just good "to think with. They are here to live with" (2003, p. 5).

Ingold has recently questioned the ontological orderings of the landscape and sky (2011, part III). Pointing out that generations of scholars seem to have mistaken the scape suffix for a "scopic regime" (from the Greek *skopos*, the target to which a bowman aims). In which we somewhat disinterestedly watch and observe an external landscape stretched out in front of us. Instead, landscape is derived from the Old English *sceppan*, meaning "to shape," thereby pointing at interaction and a world better described by verbs than nouns (2011, p. 126). Consequently, he suggests that we need to rethink our tendency to explicitly or implicitly view the ground we stand on as the surface of the world and the weather as swirling "on top of the land" (p. 119). As the ground we move on, landscape is one of many surfaces in the world, where respiration is the very foundation for life that continuously disturbs a neat distinction between a solid ground and the more elusive atmosphere. The manner in which olfaction is processed in the limbic system ensured that the Victorian settlers in South Africa did not partake in a contemplative observation of dirt, fermentation and eucalyptus as something "out there." When we walk, breathe, feel the wind embrace our bodies, the scents of

trees, flowers and the sea, we mingle with- and partake of these aspects of our surroundings, thus establishing a meshwork of connections marked by “unruly edges” (Tsing 2012). In fact, when we on a walk and catch a scent from eucalyptus trees, the boundaries between subject and object blur and we merge with-, or using Ingold’s term, we are “bathed in” the mixed medium of air and tree (2011, p. 128); the olfactory traces of the eucalypts that emanate from the individual trees extend their presence through the air until they merge with us through respiration. As an “anticipatory sign,” smell brings our attention directly to its source. In this sense, the scent of eucalyptus does not symbolize health; the very substance we inhale is health. The South African settlers were participating in existential dramas, in which disease and potential death were very real, with the possible outcomes of bodily processes that directly connected them to their material surroundings in general and its smells in particular. What we in fact see here is an ontology that resonates with local African practices. The hunters of southern Africa would follow the traces of the prey in the air. These tracks in the air, *imikhondo*, bound the hunter with the prey as if through a thread (Ngubane 1977, p. 24ff.). Likewise, “evil doers” blow their medical powders into the air so that they can be carried by the winds, thus transporting the negative characteristic of the substances to the victim. In turn, local healers pick up the same tracks and “smell out” “evil doers” using their noses.

I suggest not only that the local testimonies from Victorian King William’s Town are one, among other descriptions, of the world. It is my ambition to use what Tsing has termed “critical description” (Tsing 2013) to challenge our own ontology by placing an acute focus on intersections; situations in which things — whether animate or inanimate — merge and blend, making clear-cut distinctions less obvious. Though our olfactory sensibilities have changed over the past 150 years, the majority of us will still react strongly to the scent of manure, and even if we are unable to decipher the smell as disease and potential death our bodies remember when we gag, as if to expel dangerous poison from our bodies.

On August 8th, 1877, The Cape Mercury printed a letter read to the King William’s Town Borough Council on August 6th that year:

“Sir, I have the honour to draw the attention of the Mayor and Borough Council to the sanitary state of this town, which, owing to its low situation, will, I fear, yet prove a hot bed for many diseases, from which both old and young will suffer. [...] Blue gums should be planted as much as possible about the town. We all wish to live as long as we can, and to preserve the health of those committed to our care, and if we all unite cordially for these objects, I have no doubt of success. We have one of the finest climates in the world, and if we have pure good air both within and without our houses, we shall be placing ourselves in the most favourable position for attaining our end. Fish live in a medium and that medium is water; now if we pollute or poison the water, the fish will either sicken or die. Man lives in a medium, and that medium is air, so abundantly necessary for our existence; in like manner, if we pollute or poison the air by noxious effluvias, we shall most certainly suffer sooner or later in proportion to the amount poison. —I have, & c.”,

J. P. Fitzgerald, M.D.,
Superintendent of Native Hospitals

Though almost 150 separate Ingold from Fitzgerald, the focus on our air, as the medium we both live in and through, is something they have in common. My suggestion in this paper has been to ponder whether it might be worthwhile to shift our focus when we view the South African eucalypts, or the natural world in general for that matter. I have suggested that the smells of Victorian King William’s Town constitute a significant surface in the world, a surface revolving around questions of health and disease, and life and death. Maybe the most significant roots of the eucalyptus are not those they ply into the ground to extract nutrients, but instead the scents that extend through the air, merging with us as we inhale, reminding us that we are tied together in ways that are more than meaningful — they are actually essential for our foothold in this world.

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JON RASMUS NYQUIST

WAYS OF CONTEXTUALIZING CANE TOADS:

Invasive Species and Community Engagement in the Making

As I drive up to Cecilia's house on the outskirts of Kununurra in the East Kimberley, I am greeted by two small dogs, two ponies and a horse. Cecilia is the local veterinary and was for some years the vice president of the community group the Kimberley Toad Busters (KTB). We sit down together on the porch sheltered by a row of coconut trees and she tells me about her animals. One of the dogs is named after a cartoon character, a reference I fail to take, and one of the ponies, she says, is a real gentleman, even though he often "fertilizes" the lawn right in front of the porch.

We talk a little bit about conflicts surrounding the invasive cane toads in Western Australia, about the local branch of the Department of Environment and Conservation (DEC) and about her own role in the KTB. It was always first and foremost a matter of educating people, as far as she was concerned, which she still does from the vet center. The toads can be a good means to get people's attention also to other issues of nature and wildlife – an interest in toads could lead people to take greater interest in nature generally. She tells me she "toadbusts" around her own place from time to time, but not nearly enough, "it's never enough." You can hear the toads around here at night, she says. I attest to it as well, having heard them over at the KTB's headquarters which is only a few kilometers from Cecilia's place. Sometimes she finds dead turtles or snakes. "It breaks my heart," she says, and it is especially bad if they have died from ingesting toads. She goes on to tell me about the great changes happening in the Kimberley. She has lived in the region for more than twenty years, and seen the change happening – especially in the last decade. When she first moved here, in the wet seasons, she recalls how the bush would be teeming with wildlife – everywhere and all the time there would be lots of

snakes, reptiles, frogs and marsupials. Now there is just fewer of all the animals, she tells me – except for the toads. Many of the species that were a regular sight back then are seldom or never seen now. Strictly speaking, no extinctions have been recorded though, and she says it is a terrible paradox that it might have to take extinctions before people, especially the politicians, realize something has to be done. The Kimberley is undergoing a dramatic change for the worse, and the most critical aspect isn't the toads, she explains, it is the changing fire regimes. Cecilia emphasizes that they, meaning DEC, burn too much, and burn too intense fires. The rationale is to prevent uncontrolled wildfires, but according to Cecilia it has the collateral effect of decimating wildlife. Feral cats are also a major problem and a part of the change, she says, as they eat small birds and small mammals and are very difficult to control. But just as Cane Toads, cats don't have much of an impact on agriculture or pastoralists, and if no one loses money on it, it's not regarded as important. Between fire regimes and feral cats, it seems to Cecilia, the toads are truly the icing on the cake.

In 1935 the Australian Government introduced the cane toad to Queensland to control beetles in sugar cane crops. Nearly 80 years later the large poisonous toads have spread to cover all of Queensland, much of the Northern Territory and even some of Western Australia and are now widely considered to be one of the worst invasive pests in Australia. For the last ten years or so the toads have advanced westward across northern Australia in some areas by as much as a hundred kilometers a year. Volunteer groups as well as the state Department of Environment and Conservation (before 2006, the Department of Conservation and Land Management, in 2013 they separated to form The Department of Parks and Wildlife and The Department of Environment Regulation) have mapped the so called "frontline" of toads since 2005. Each wet season the toads reach new local communities and new towns and many people will have aspects of their lives affected by the toads.

The focus of this article is some of the practices of the community group Kimberley Toad Busters.⁵ The KTB is part of a quite extraordinary spur of engagement that started around 2004 and is still going. Several volunteer groups, scientists and government agencies then mobilized in an effort to slow down the spread of the toads and to attempt to mitigate the impact they would have on the native fauna of the Kimberley-region in Western Australia. Over the years this has involved trying out different technologies of control, including trapping, fencing and manually collecting toads in all their life stages (“toadbusting”), as well as new biological controls. This article explores the KTB's efforts to create and nurture engagement from the Kimberley community. How does a community group motivate members of the community to do toad control and how are toads and Kimberley nature enacted in the process?

Much of the literature in the humanities and social sciences about invasive species has tended to regard engagements with such cases as in truth concerning political and societal affairs.⁶ It has also often tended to revolve around some version of a paradox – often a tension of conserving nature by unnatural means⁷ – and most of it has been grounded in dualisms of nature and culture. Similarly, the terms native and invasive have been scrutinized and found to be fraught with paradox and contradiction.⁸ Such approaches often tend not to take seriously what people say and do, often basing themselves on mainly textual sources rather than on practice, and as they seek to use cases concerning invasive species for the purpose of exploring and explaining something political, in the worst instances they distort

⁵ I conducted ethnographic fieldwork in 2012 focusing primarily on the practices of the Kimberley Toad Busters, but also looking at many of the other actors engaged with toads in Western Australia and the Northern Territory. In addition to qualitative open ended interviews, a large number of everyday conversations between people in the KTB inform this account. Over the course of my fieldwork such conversations occurred every day.

⁶ E.g. John and Jean Comaroff, “Naturing the Nation: Aliens, Apocalypse and the Postcolonial State,” *Journal of Southern African Studies* 27 no. 3 (2001): 627-651; Anna Tsing, “Empowering Nature, or: Some Gleanings in Bee Culture,” in *Naturalizing Power: Essays in Feminist Cultural Analysis*, ed. Sylvia Yanagisako and Carol Delaney (New York: Routledge, 1995)

⁷ Kay Milton, “Ducks out of Water: Nature conservation as boundary maintenance,” in *Natural Enemies: People-wildlife conflict in Anthropological Perspective*, ed. John Knight (London and New York: Routledge, 2000): 229-248

⁸ E.g. Charles R. Warren, “Perspectives on the ‘alien’ versus ‘native’ species debate: A critique of concepts, language and practice,” *Progress in Human Geography*, 31, no. 4 (2007): 427-446; Banu Subramaniam, “The Aliens have Landed! Reflections on the rhetoric of biological invasions,” *Meridians: Feminism, Race, Transnationalism*, 2, no. 1 (2001): 26-40

rather than shed light upon the cases themselves. Contrarily, in this paper I aim to take seriously in ontological terms the worldings⁹ and contextualizations that my informants themselves perform. This means not regarding what informants say as one of many possible perspectives on a shared reality, but rather as itself productive of realities. In this paper I mainly follow the concerns and curiosities of my informants. I attempt to avoid looking for paradoxes, simply because the paradoxes that social scientists find rarely are paradoxes for the people we study; instead they often arise from assumptions we hold that our informants do not share. Hence taking seriously my informants' concerns and being selective and conscious about what analytical trails to follow is also an attempt to avoid inadvertent or veiled explanations. I take what people say and do, myself included, to be diffractions¹⁰ in the world, not reflections of the world, and instead of asking how the case displays aspects of nativeness and invasiveness, I ask what an invasive species would be if modeled on volunteer "toad busters'" practices of enacting and contextualizing cane toads in the Kimberley. I ask the reader to join me for the time being in holding in abeyance whatever assumptions they may have about what an invasive species is.

A first set of questions revolves around images of change: How images are composed, enacted and articulated; and what images do – what they enact and what actions they are mobilized in. In this regard I take inspiration from certain strains of Actor-Network theory to emphasize enactment¹¹ as ontological shaping and cutting and avoid taking entities from granted, so as instead to look at how they come into being and are sustained and altered in practice.

Just as animals, images can be seen as "actor-enacted"¹², entities that both act and are enacted – that fluctuate between being held temporarily still in enactment and being "moment[s] of indeterminacy"¹³ as actors.

⁹ Anna Tsing, "Worlding the Matsutake Diaspora. Or, Can Actor-Network Theory Experiment with Holism?" in *Experiments in Holism*, ed. Ton Otto and Nils Bubandt (Blackwell Publishing, 2010), 47-66

¹⁰ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*, (Durham: Duke University Press, 2007)

¹¹ Annemarie Mol sees enactment as a concept that retains some of the characteristics of both 'performance' and 'construction', while avoiding the problematic aspects of both. See Annemarie Mol, *The Body Multiple: Ontology in Medical Practice*, (Durham: Duke University Press, 2002)

¹² John Law and Annemarie Mol, "The Actor-enacted. Cumbrian Sheep in 2001" in *Material Agency: Towards a Non-Anthropocentric Approach*, ed. Carl Knappet and Lambros Malafouris (Düsseldorf: Springer, 2008), 57-78

¹³ Law and Mol, "The Actor-enacted", 74

THE TOAD BUSTERS' IMAGE OF CHANGE

Cecilia articulates in the conversation I started out with many features of what I take to be a toad busters' image of changing nature. This image evokes other images of dead animals and localized extinctions. It is an image of an environment with far less wildlife, where people are no longer able to encounter the animals they love. Not only is it heartbreaking to find individual dead animals out bush, the toad busters' image also shows the bleak prospect of having a bush no longer teeming with wildlife. In place of a diversity of different species, there will be millions of toads, and very little of anything else.

What is also clear in my conversation with Cecilia and in conversations I had with many other toad busters is that the toad busters' image of a changing Kimberley is not only to do with the toads' impact, but with a change that is the combined effect of a number of interrelated processes. Fire regimes and feral cats were emphasized by Cecilia; as were other processes include mining, exotic weeds and tourism. The change is also multisensory and experiential. Cecilia remarks that one can hear the toads at night. Instead of a chorus of many different native frogs, the soundscape of Kimberley nights are perceived at worst to become one where the sound of the male toads' calling signal – sometimes described as “machine gun-like” or likened to the sound of a tractor from a distance – absolutely dominates, and changes the familiar ambience of Kimberley nights. Pertaining to olfactory aspects, as many people in the Kimberley have a heightened attentiveness to the odor of toads and a propensity to connect the smell of dead animals to toads, for toad busters, the Kimberley does indeed smell different with toads. The image also often conveys a close and emotional connection to animals, where not only domestic pets are seen as friends and companions but also snakes, lizards, birds and marsupials.

The KTB's presents an image of a radically altered environment. Far from the pristine, untouched Kimberley that the tourist industry often portrays, it is a Kimberley where you hear mostly toads, you see mostly toads, and when you can neither hear them nor see them, they still make your favorite swimming spots stink.

Rather than scientific arguments, these are experiential, multisensory and emotional images that enact a nature that doesn't elicit quantification and objective knowledge, and a toad that is active and makes a difference. But there are also scientific components of the toad busters' image, and it is emphasized for example that toads have an impact not only on the most visible and iconic animals, like the goannas, the blue tongue lizards and the bandicoots, but also on all the animals no one knows very much about. The toads might cause extinctions in species that there are no baseline data on whatsoever. The toads might decimate the invertebrate base with dramatic flow on effects. These are changes that one would need the sensory prosthetics of science to unravel and articulate. The KTB's image of change is more than a scientific argument.¹⁴ While it contains both scientific and experiential components the image is also internally differentiated and tensions and discordances sometimes arise.

INDIGENOUS IMAGES

"...we grew up hunting, you know, goannas and...old people used to teach us, but there's nothing, if the toad is gonna go throughout the Kimberley, there's nothing left for our young ones and their young ones to hunt, and there's nothing to teach them cause there's nothing there [...] our kids would forget our culture and how to hunt and everything...." (Trevor, an indigenous ranger)

For the last few years the KTB have held an annual toadbusting camp with aboriginal KLC ranger groups.¹⁵ This year's camp was held at Doon Doon very close to the westernmost cane toad "frontline" and more than 50 rangers took part. Some of them came from as far as Derby, more than 800 kilometers away. This year the goal was also to get some short interview segments made with some of the rangers.

¹⁴ J. R. Nyquist, "Care and choice in dealing with the invasive Cane Toad in Western Australia" *The Australian Journal of Anthropology* 25 no. 1 (2014): 22-36

¹⁵ Kimberley Land Council is a body representing and assisting the indigenous traditional owners in the Kimberley. They run a ranger program where aboriginals are employed to "look after country" as they put it on their web site (<http://klc.org.au/rangers/>). In the case of the ranger groups I spoke to, this would for instance involve control of the invasive rubber vine and doing biodiversity surveys.

On the second day of the camp, KTB volunteers Michael, Paul and Keith prepare for the interviews. Paul has already picked a nice spot with a bit of scenery and some trees in the shot and the first one to be interviewed is Mandu from Nyikina Mangala Rangers. Michael is sitting down on the grass with Mandu, Paul is filming, Keith is holding the microphone boom and I have been given the ungrateful task of trying to keep Michael's puppy dog from barking or running into the shot. Michael asks Mandu questions such as where he has come from, what he thinks about toads, what he reckons the toads will do to the environment and to their culture and why they toadbust. They do a few more interviews with some of the others from Mandu's ranger group. Later in the afternoon they also do some interviews with a couple of the guys from one of the other ranger groups, Wungurr Rangers. Relieved of my task as dog watcher I have a chat with Mandu while Michael and the others do the rest of the interviews. After the last one, he comes over to me with a big grin and tells me about the last interview and what Trevor, one of the rangers, had said – the quote at the start of this section. He says this is just the sort of stuff he wants in these films and he is very happy that Trevor said it without him having to put words in his mouth. All the rangers have emphasized traditional hunting and that their bush tucker and traditional practices will be imperiled, which Michael thinks is excellent.

Whether mediated by Michael's questions or my own, aboriginal toad busters almost always emphasized the loss of bush tucker and traditional practices.¹⁶ The indigenous image of change, just as the toad busters' image, portrays local extinctions and a radically altered Kimberley. However, the focus is markedly on loosing traditional bush tucker, spirit animals¹⁷ and as some put it, the basis of their

¹⁶ This is a different emphasis than the Yanyuwa people in the NT give to the toad and their status. According to Kathryn Seton and John J. Bradley "When you have no law you are nothing!: Cane Toads, Social Consequences and Management Issues," *The Asia Pacific Journal of Anthropology* 5 no. 3 (2004): 205-225, among the Yanyuwa, the toads are regarded as a pest mainly because they have no traditional law, and hence "...no place to fit within existing structures" (213). Whereas the Yanyuwa try to get rid of toads because they have no law, the indigenous people I spoke with were rather concerned that when Cane Toads hit their country the culture, of which traditional law is a part would be imperiled. However, the similarities are also evident as Seton and Bradley write: "...one of the most far-reaching consequences was the stress and depression among Yanyuwa women when their daily movement across country in search of normal target prey (such as goanna and blue-tongue) led only to 'finding Cane Toads in their holes'..." (214-215).

¹⁷ A term used by some toad busters, also some indigenous toad busters.

culture. The indigenous image shows a Kimberley without many of the animals that are significant for traditional practices. The toads are simply seen to imperil different practices and different relations for indigenous and non-indigenous toad busters. Because of the toads it will no longer be possible to connect to certain animals or maintain relations and practices in the same way – be it through hunting or through appreciation of wildlife. In the situation just recounted the indigenous image is made to work to the KTB's advantage in presenting a different emphasis from the toad busters image of change. But it is not always like that.

I experienced very clear discordance between the images quite a few times during fieldwork. Goanna – an umbrella term for several species of varanid lizards – is arguable one of the highest valued bush foods for most indigenous people in the Kimberley, but also one of the species the toads have the highest and most uncontested impact upon. Only a handful of times did I see a goanna around the Kununurra area, and each time the toad busters I was with would express a great delight that even with toads in the area one can still from time to time encounter a goanna.

However, most aboriginal people regard it as their prerogative to kill goannas and other bush tucker and it is even a motivation for toadbusting for indigenous people to be able to still go out and hunt. Thus it presents an awkward discordance. Put bluntly it could be the case that if ninety percent of goannas die because of the toads, aboriginals hunting just might take out the remaining ten percent. One of the things the toads are a threat to in the indigenous image – hunting practices – is itself a threat in the toad busters' image, though only partially so. Unsustainable hunting was indeed a worry for my informants in the KTB, at the same time as they actively appealed to hunting as a means to engage indigenous people in toadbusting, and used loss of bush tucker for purposes of education and for raising awareness.

Toad busters then, shape and assemble their image of change differently in different situations, sometimes incorporating the aboriginal image with its emphasis on loss of bush tucker and other traditionally significant animals, other

times othering these aspects. In some situations the discordance between the toad busters image and the indigenous image is unarticulated, or even actively “unknown”¹⁸.

Clearly, neither the KTB nor their indigenous volunteers are motivated by a vision of a pristine wilderness that needs protection. Instead, they want to intervene with specific changes happening in the Kimberley. Toad busters do not idealize a distant wilderness or a pure and pristine nature, but rather the practices and experiences of living in the Kimberley; bodily and experiential images of sensing and being with animals, and concerns about tradition and valued practices that might be imperiled are central. This keeps us clear of paradoxes, but also of generalization and leaves us with a specific story that is no longer necessarily and unequivocally about wilderness, nature, conservation and environmentalism, any more than it is reducible to olfactory aspects or hunting.

CANE TOAD CONVERSATIONS

We sit down with Jason at one of the tables in the restaurant at Home Valley Station in the East Kimberley. He works in the bar at the station (which is now predominantly a tourist resort) and has been doing reconnaissance trips in the area to see how far the toads are from Home Valley. He tells us he has been taking some trips along the Gibb River road spotlighting for toads several times this wet season and he tells us where he found toads the last time he went out. Robert, Caroline and I have just come from a recon along the King River road and we show Jason on the map where we found the westernmost toads. They seemed to be further along the way around the Cockburn Ranges than he thought and Jason is surprised to see that they are so close. They might be at Home Valley within the next couple of months, he concludes. We discuss where it would be good to do tonight’s reconnaissance trip. He shows us roughly where he has been and when, and suggests that we do the road that goes down towards El Questro Station. He also says we might have a look in at Emma Gorge, at the Cane Toad fence that Stop the Toad Foundation (another

¹⁸ Paul Wenzel Geissler, “Public secrets in public health: Knowing and no knowing while making scientific knowledge,” *American Ethnologist*, 40 no. 1 (2013): 13-34

community group) put up last year. We discuss whether this is a good idea and eventually decide against it on account of the strained relation between the KTB and Stop the Toad Foundation. Jason says he'll be doing some recons closer to the station in the coming period and also check an old mustering track that goes around the Cockburns, and all the creeks along there. Before we go, he tells us about the snakes around the place. He has been keeping track of the different species he has seen and caught and he is worried about what will happen when the toads arrive. Robert mentions that some stations in the NT are reporting that after the toads, they see mostly Keel backs – a snake that can eat toads without ill effects – and Black headed Pythons – a snake-eating snake, and very little else.

Everyday conversations among toad busters very frequently concern informal reporting and planning. Upon returning from reconnaissance trips or toadbusts, conversations could be started with a "How did you go?" or "How many toads?" These would often go on to involve toad trends, such as gender ratio or how many juveniles, and hypotheses on what such trends might mean. Individual occurrences would also be discussed, and such things as abnormalities, encounters between toads and reptiles and dead animals found out bush generated great interest. These conversations also frequently revolve around the frontline, as the example above. It would be such things as which corridors the toads are spreading by, whether toads are "colonizing front" toads or just "hitchhikers" and of course how far south and west the toads have come. This in turn is the ground upon which KTB volunteers decide where and when to do toadbusts and reconnaissance trips. Conversations that at the same time report and plan – both point backwards and forwards – in effect facilitate further action and becoming toad busters. But such conversations also enact the situation in certain ways and by doing so repeatedly, they stabilize it.

The first trial run for the KTB's kids at risk program – a program aimed at getting aboriginal children out of town for a weekend to be challenged under the guidance of good role models – had to be cancelled at the last minute because of the weather, and this evening nearly all of us who were to be involved in running it were over at Michael's for a barbeque. Lee, the KTB's president, had just come back from

Perth where she had given a talk for the Kimberley Society¹⁹ and had a meeting with the environment minister Bill Marmion, and she is telling us about her experience. She says she admitted to Marmion that it is no longer a matter of stopping the toads, but that they instead are trying to mitigate the impact and buy time for animals and scientists – and this is no less of an important reason for funding to be granted them. Lee puts a lot of blame on the federal Cane Toad Threat Abatement Plan – she says that because it discredits research that is pragmatic and explorative the effect is less funding both for community groups and for scientist. She also tells us she spoke to Marmion about some of the indigenous issues in the Kimberley, and soon the conversation veers towards horrific stories of neglect of children and third world conditions in aboriginal communities – atrocities that go on right here in town. I had gotten a glimpse of it myself when dropping off kids after a toadbust, kids who weren't sure which house they should go to that night. Most of the places are littered with empty beer cans and emanate loud music and shouting. But the stories Maggie tells – she worked for some years in a local aboriginal corporation – are far worse than what drinking and shouting could ever hint at. Phil – a professional outback survival expert from Perth – emphasizes that “we are all together in this; it is the community's problem, not just the aboriginals”. Toadbusting could be a glue to hold the community together and act as an equalizer – “we are all the same when it comes to toadbusting.”

In this conversation several themes and domains are connected and interwoven to articulate what the toad case is all about. The talk almost seamlessly transits from political processes to the objective of the toadbusting endeavor and on to research and funding issues, indigenous problems and visions of betterment for the community. It is the situation – where people whose commonality is the toad case are gathered – but also a commitment to continuity with the past that lets such domains be connected and articulated together.

¹⁹ An organization that promotes research on topics related to the region.

The toads themselves are enacted through conversations in their connection to other things. Through this one specific toad practice the toads are enacted as tied to funding processes, community matters, indigenous issues, research, the history of the toad case and many other things. The toads act as the nexus where all these domains can be made to intersect. Certain toads and certain situations evoke trajectories and contexts and elicit certain connections. Are toads political? Are they a community issue? An indigenous issue? Are they historically situated? Are they natural? Un-natural? Yes, they are all these things, but none of them in and of themselves, none of them without the repeated work of enacting such realities into existence. A conversation is a contextualizing event and a practice of enactment. Following Brenna, "...contextualizing could be seen as a way of deciding upon one single reality." (Brenna 2012, 358). What emerges from conversations are realities stable enough for people to be able to act with them and act on the basis of them (there are certainly also many that fail to emerge as such). Realities are, among other things, conversed into shape. But there are also leakages and no realities are so stable and unchanging that they don't need choreographies²⁰ of entities and practices to sustain them.

In any case, it is neither arbitrary nor self-evident what contexts to engage in analysis.²¹ Asking for the effects of our informants contextualizations should prompt us to ask the same of our own. Australia's colonial history and its location and geography (with a high degree of endemism and relatively little exchange of species with other areas), along with some version of Euro-American naturalism, might be said to elicit and support certain ways of looking at and relating to exotic and introduced species. However, as much as these aspects can be useful for understanding, they are not something that can explain the Cane Toad case, nor are they generalities that the case simply presents an example of. How then should we deal with contexts if we don't intend them to be something that can explain cases, something to reduce our informants and their actions to, nor something that those

²⁰ Cf. Charis Cussins, "Ontological Choreography: Agency Through Objectification in Infertility Clinics," *Social Studies of Science*, 26, no. 3 (1996): 575-610

²¹ Cf. Tsing, "Worlding the Matsutake Diaspora"

we study simply represent examples of? One solution is to take the case at hand as irreducibly singular and divorce it from any analytical contexts and wholes (as much of Actor-Network-Theory does²²). Another solution is by way of recursivity²³, diffraction²⁴ or by shifting perspectives²⁵, to turn things back on themselves. Such sideways conceptualization is an endeavor to make abstractions without making generalizations²⁶ and it can thus function as a middle way between explaining with contexts and excluding contexts completely.

TOAD TALKS

Jim and I checked for breeding on the way out to Parry's Creek Farm. We stopped by some of Jim's usual places, but we also checked some new ones for signs of eggs, tadpoles or metamorph toads. Emily at Parry's had spoken to Michael and wanted someone to come out and help with the tadpoles in the lagoon and to get some photos of the dead turtles that they found a couple of days ago. Parry's is a resort and a popular site for birders, but during the wet season, Emily and Patrick, the caretakers, are the only ones there. Jim does most of the talking. Emily says they've been going out nearly every night around the place to catch toads and that they think there are toad tadpoles in one of the lagoons. We bring a couple of hand nets and follow Patrick and Emily down to the lagoon. One end of it is thick with tadpoles. Jim confirms to them that they are indeed toad tadpoles and explains how one can tell the difference – none of the tadpoles of native frogs are as jet black as the toad tadpoles, the native ones usually have a longer tail whereas the toad ones are quite stumpy. As I start scooping up tadpoles, Jim tells Patrick and Emily about how best to do tadpole control. A trick is to net the tadpoles and crush them up with your hands and then chuck them back in. Then an alarm pheromone is released from the crushed-up tadpoles that the other tadpoles react to. Apparently, says Jim,

²² For two of the most programmatic presentations of this purposefully myopic irreductionist approach, see Bruno Latour, "Irreductions" in *The Pasteurization of France*, ed. Bruno Latour (Cambridge Mass.: Harvard University Press, 1988) and Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network Theory*, (Oxford: Oxford University Press, 2005)

²³ Martin Holbraad, *Truth in Motion: The Recursive Anthropology of Cuban Divination*, (Chicago: University of Chicago Press, 2012)

²⁴ Barad, *Meeting the Universe Halfway*

²⁵ Marilyn Strathern, *Partial Connections*, (Savage Md.: Rowman and Littlefield Publishers, 1991)

²⁶ Martin Holbraad and Morten Axel Pedersen, "Planet M: The Intense Abstraction of Marilyn Strathern," *Anthropological Theory*, 9, no. 4 (2009): 371-394

it makes them stressed causing them to grow smaller and have a lower survival rate. Jim also points out up on the side of the lagoon such places where the toads might be found during the day. They burrow, under roots or other places that are damp and shady. "They're truly an amazing animal," Jim says, "you gotta admire it for what it can do." Jim talks about how hardy they are – how they can go on hopping even with a missing limb and how they don't seem to be bothered the least bit having swallowed centipedes and scorpions – and how adaptive they are – it continually surprises how they are able to do things no one thought they could. They can climb, they can burrow, and they can swim. Jim tells them about the time Michael was out in the middle of Lake Argyle (Australia's largest man-made lake) with a film crew from "60 minutes" when they suddenly saw a toad swimming beside the boat. It had been swimming all the way out there, many kilometers from shore. It is also quite amazing how they all seem to be heading the same direction and spread so fast, "they're certainly good at what they do," Patrick remarks.

As we go to check out another lagoon, the conversation turns to whether it really makes a difference. Jim says the only thing that helps until scientists come up with a solution is manual toadbusting. Around Kununurra, he explains, they are still seeing Yellow-spotted Monitors and Blue Tongue Lizards and there aren't as many toads as you would find if you went even just to Keep River National Park over the border to the NT. The difference is striking between Kununurra and a place like Keep River or Kakadu, he says. Over there, you would see toads everywhere; even the ambience is different because there are less insects and native frogs. We leave the nets with Patrick and Emily who say they will start doing the lagoon frequently too and after getting the photos of the dead turtles we head back to Kununurra.

This toad talk draws attention to what was the original aspiration of the KTB's, namely to be a group that assists and makes it possible for people in the Kimberley to toadbust on their own. The talk differs from the conversations in that it is a more asymmetrical relation between the parties. It is a clear divide between Jim who is speaking authoritatively about toads and Patrick and Emily who are on the receiving end. This divide is embodied in such things as the fact that Jim drives a KTB car,

wears a KTB shirt and occasionally answers the phone at toad HQ, but it also lies in the difference between what Jim knows and what Patrick and Emily know, and in each of their assumptions about what the other party knows. Through talks such as this one, the KTB extend and nurture involvement, and Emily and Patrick respond by actively engaging themselves with the toad case. To the effect of generating engagement and action, Jim deploys some of the realities that the KTB have shaped among other things in the conversations described above. For one thing, he evokes an image of change. This doesn't fail to find resonance with Patrick and Emily who respond with their own story of the turtles they suspect of having been killed by toads. The toad as amazing animal is one of the realities Jim articulates. This involves a toad that defies established expectations and continually surprises, and it is a toad assigned certain positive features. Other toad realities are only hinted at, while others again are actively or passively excluded. Jim hints at a scientific toad when he explains pheromones from crushed up tadpoles. This is a toad known by chemical formulas and controlled experimentation. Crushing tadpoles up and putting them back in the water has effects that are not immediately visible to toad busters, but rather known through a trail of scientific reports diffused through public forums and other correspondence. The process by which scientists established truths about pheromones and their effect on tadpoles, as well as the process through which the KTB came to adopt and adapt the technique is not articulated in the toad talk. What is even less articulated, and what one can only notice by seeing an absence against a possible presence, are the toads as a nexus for conflict. One could depart in this direction from Jim's remarks that until scientists come up with a solution, only manual toadbusting really works. If only manual toadbusting really works, what doesn't really work is fencing and trapping, which is what Stop the Toad Foundation has advocated. I am able to make this connection, and notice the absence of such a connection, because it is one that was made in several other conversations on toads. Jim is able to leave it out to the effect of nurturing engagement on the basis of an assumption that it is a set of connections that Patrick and Emily are sufficiently unaware of not to notice it as an absence. In this situation Jim enacts a separation between the KTB and members of the community in order to speak authoritatively on toads and thereby nurture engagement, but he

also enacts the situation as one that Patrick and Emily can readily attach themselves to, and thereby become toad busters.

During my time in the Kimberley there was a handful of relatively new places for the toads and for the KTB, and it was one of the first major info meetings they held in Halls Creek, a remote former gold mining town in the south east Kimberley, that I was a part of at the end of February 2012.

After a dinner with Mary who invited and arranged the info meeting, a meeting with two friends of Michael's who work with Juvenile Justice and a talk on the local radio, the big info meeting was due at midday on our second day in town in the Shire Hall. We set out chairs with a KTB pamphlet on each and Michael hooks up his laptop to the projector and makes sure his Power Point presentation is ready to go. The meeting has been advertised in the local paper, on the radio and on notes hung around town. The hall gradually fills up after Michael has started and at the most there are about 50 people present. Michael does a toad talk. He talks about the unique biodiversity of the Kimberley and what will happen to the region because of the toads. Accompanied by photos of iconic Kimberley animals, animals dead from ingesting toads and graphs that show declines, he explains how the toads not only impact by lethal ingestion, but also through decimating the invertebrate base and by occupying shelters and burrows that native animals need. He goes on to talk about what can be done. He talks about the fantastic Kununurra community and how they can really see that it helps. What can be done, he says, is to mitigate the impact and buy time for scientists to come up with a solution and for animals to adapt. Toadbusting, he emphasizes, can also keep the environment from becoming thoroughly toad dominated.

Towards the end it is opened up for questions. Some of them concern myths about toads. Someone wants to know if it is a good idea to kill toads with golf clubs, while another one has heard that crows have learned to flip toads over and eat out their stomach avoiding the poison, and wonders if there is hope that other animals could learn in similar ways. The question round also presents people with the opportunity

to share their own experiences and stories of toads – one middle aged man goes on for some length about his experiences with toads in Queensland in his youth. After the meeting, conversations continue outside as the barbeque is going and a sheet where people can put their name and contact info so they can be contacted when the toads arrive is being passed around.

Images and toad realities play a crucial part in fostering community engagement and facilitating toadbusting. But equally as important are the situation and the response. Making engagement is a collaborative process. What is explicitly emphasized in this toad talk is the image of change; what is enacted through the situation is the toad as a community issue. Through images and toad realities, the KTB explicate the severity of the situation and provide members of the community with the grounds and means for a commitment to engagement. But engagement is more than anything actualized in the acts of bringing members of the community together, in their acts of connecting themselves to the case by asking questions and telling their own toad stories, and by establishing a commonality for the community. Toad talks nurture engagement insofar as they are practices that facilitate others connecting themselves to the case being enacted.

As toad busters and others articulate images and toad realities, the toad multiplies and differentiates with different connections in practices of nurturing and generating engagement. However, articulating an image of change does not necessarily compel one to act. An image of change is not meant to be a necessary and sufficient explanation for why toad busters commit themselves to engagement with the issue. Indeed, for each toad buster and member of the community there is a particular and specific complex of motivational grounds, even while they all might share some variation of an image of change. At this stage then, I can point out that what emerges from toad busters' conversations and talks are certain images and certain toad realities. This is far from insignificant. However, while it is relatively easy in this instance to say something about how realities are posterior to practice, it is much harder to say something about how they are anterior to practice, as it is always in practice that we come across them. I wish to avoid having to resort to

envisioning some kind of repertoire or repository of images that one can draw on and mobilize, and that exists outside of and prior to practices and things. This would propel me back into dualism. In addition to the long recognized problems with extracting motivation and intention from practice or exegesis, Actor-Network Theory and its cognates associated with a “philosophy of adding” (Asdal 2012, 379-403) have a particular additional problem with saying anything at all about grounds, reasons, causes and everything else anterior to articulation and enactment. To abate this I propose to explore the somewhat contradictory sounding notion of continuity as something enacted.²⁷ On the one hand it might appear that saying that continuity is enacted negates any real continuity – enacted continuity, as constructed reality, has with it an air of denial. On the other hand one could see discontinuity as something of a default in the world²⁸ and continuity something that requires an effort to bring about. I tend towards the latter, granted we are able to avoid regarding enactment as something exclusively (or even predominantly) human. Indeed, some continuities are aided by the toads, many might even be said to be prompted by toads, and diffracted by toad busters; others again, toads or Kimberley nature resists and counteracts. As toad busters’ articulations are productive rather than reflective of reality, one thing they produce is continuity. They are not simply pulling together relations to form and shape toads and natures; they are also stretching them out over time.

Conversational practices of reporting and planning is one clear instance in which toad busters insert themselves as active mediators interposed between what has happened and what they want to happen, and as facilitators of that change. But as indicated above, I suggest continuities also lie in what is emphasized and what is left out in conversations. It is when Jim articulates an image of change and a toad that defies expectations and doesn’t explicate the scientific path behind practices or the

²⁷ See Vicky Singleton, “When Contexts Meet,” *Science, Technology and Human Values*, 37, no. 4 (2012): 404-433 for a similar argument.

²⁸ Similarly T.M.S. Evens, *Anthropology as Ethics*, (New York & Oxford: Berghahn Books, 2007) sees ambiguity as the basis of reality, Quentin Meillassoux, *After Finitude: An essay on the necessity of contingency* (London & New York: Continuum, 2009) writes about the necessity of contingency and Andrew Pickering sees the world as an “...inexhaustible font of emergent phenomena.” Pickering, “The World Since Kuhn”, *Social Studies of Science*, 42, no. 3 (2012): 469

conflicts surrounding different technologies of control; it is when Lee connects toads to indigenous issues, to funding and to the history of the toad case, enacting the present as historically situated when it would be equally possible to enact a break and a new beginning; and it is when Robert emphasizes to Jason that there might be great changes in reptile biodiversity and leaves out the controversies and disagreements between the scientific community and community groups on the matter.

INVASIVE SPECIES-AS CANE TOAD

Finally, a connection that is neither arbitrary nor self-evident is the context of invasive species. Along with Australian culture, colonialism, community group, western naturalism or humans and animals, invasive species is a connection I am reluctant to give explanatory force and a general category I am hesitant to necessarily regard the toad case as an example of. Simply by mentioning such value laden multivalent wholes, pregnant with meaning, I feel myself approaching the murky waters of speculation, suspicion and accounts muddled by the analysts misplaced preconceptions. Hence I have searched for the hows and whys of peoples' engagement with the toad case in the minutiae of practical and concrete interaction. And instead, in conclusion I ask recursively, if modeled on the KTB volunteers' practices of contextualization, what is an invasive species?

Commonly, it is imputed to invasive species that they manifest a particular way of relating to nature; a framework that makes it meaningful to distinguish species that belong to a certain place and species that do not belong (alien, exotic, introduced etc.).²⁹ Otherwise put, to distinguish between those that invade and those that are a part of what is invaded. In such a version of the concept, one part, that which is invaded, is made to be static, while the invading part is mobile, active and has great

²⁹ Lesley Head and Pat Muir, "Nativeness, Invasiveness and Nation in Australian Plants," *Geographical Review* 94, no. 2 (2005): 199-217 among others also notes this aspect of the term as a widespread conception. Conceptualizing invasive species as matter out of place also enacts this double separation between belonging and alien and culturally ascribed and naturally given.

altering force.³⁰ It is a representational notion which regards the correspondence, or lack of it, between worlds and words. It refers to a way of sorting and classifying, of ascribing meaning to an external reality. What also often follows is a human exceptionalism, where any species can be invasive except for humans. Within such a framework, the concept of invasive species is strongly bound to a dichotomy of nature and culture, as dualism entails both human exceptionalism and representationalism. But the actors I have followed did not articulate something like this very often and it is quite far from what emerged from most of their activities. As opposed to Stephan Helmreich's case in Hawaii (Helmreich 2005, 107-128), where the concept of invasiveness was continually under negotiation and different definitions abounded, in my case it was largely relegated to the margins, undefined and undiscussed. Neither in practice nor in discourse did the Cane Toad case uphold a clear-cut dichotomous ontology. Thus appears an interesting tension where from the outside, Cane Toads often figure as the prototypical invasive species, whereas when one comes to be immersed in the complex interaction among and between toads and toad busters they appear as anything but.

What should we make of invasive species conceptually when it is not something that is discussed and articulated by informants? My solution is to start from the many instantiations of cane toads in their own right. Toads appear in many guises, most of which cut across levels and blur species divides. Consider for example a 'frontline toad', an entity that is a part of the frontline, all the while embodying and producing this emergent whole; or the toad as a nexus around which matters of the community, politics and scientific uncertainties can be brought together; or toads enacted as a threat to goannas and different species of snakes – these toads are multispecies and relationally defined. Toads are not simply toads, let alone simply invasive species, but rather specific, diverse and contextually excessive. Calling them invasive species might miss the complexity of it as it puts emphasis on one context at the expense of a multitude of others. Perhaps invasiveness in this case

³⁰ Nigel Clark, "The Demon-Seed: Bioinvasion as the Unsettling of Environmental Cosmopolitanism," *Theory, Culture and Society* 19 no. 1-2 (2002): 101-125 similarly describes a cosmopolitan environmentalism in which a premise is that "...left to itself, nature is docile...." (107)

instead lies in this complex multitude. Furthermore, as mentioned, toads do not invade an abstract, untouched and pristine wilderness – from my informants’ contextualizations neither Cane Toads nor the Kimberley can be envisioned as static. Rather, they affect and intermesh with specifically situated practices and relations. In a curious inversion of Despret’s notion of domestication as “...practices that allow themselves to be pervaded by humans...,”(Despret 2004, 125) in the case of the toads I see more than anything practices that allow themselves to be pervaded by toads; practices that lend themselves to take on a flavor of toad. The Kimberley is ripe with biosocial forms that accommodate cane toads, such that they seep into rivers and backyards as much as they do conflicts, policy making and community ailments and aspirations. Toad busters tinker with ways of contextualizing cane toads and they allow the toads an active part in producing the Kimberley both as natureculture and as aspiration.

In sum KTB volunteers' ways of contextualizing Cane toads affords invasiveness as a version of entanglements in which we are led to emphasize a certain human/non-human asymmetry; a model that differs both from the active invader in static nature model as well as the symmetry espoused by much work on humans and animals in the past decades. It is not simply the case, as Jane Bennett asserts, that “...the locus of agency is always a human/non-human working group”, (Bennett 2010, xvii) rather as seen in KTB volunteers' articulations of toads, the toads prompt us to allow them the capacity not only to create realities for themselves, but also, as Nigel Clark puts it, “...to make and bequeath worlds for others.”(Clark 2011, 45 (emphasis in original)). In the KTB's images, cane toads are an agent of change in a changing environment; they are working groups that work quite well both with and without humans. In a final note on the KTB's images, talks and toad realities, I would suggest that in addition to being diffractions that produce community engagement, multiply and temporalize cane toads, they are ruminations on the ways in which Cane Toad working groups are more-than-toad. A sideways glance at invasive species-as cane toad gives us an alternative model of invasive species that can unsettle and destabilize. In this case “invasive species” lies in a complex multitude of

contexts, in more-than-human practices pervaded by toads and in ruminations on cane toads as more-than-toad.

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KNUT G NUSTAD
BEYOND PURIFICATIONS:
Exploring Conservation And Its Critique

For centuries the Umfolozi River has been washing down silt, creating a river delta with extremely rich soil on its way to the Indian Ocean. The flats, covered in bush, stretch all the way to the ocean in the east and are met by a subtropical forest to the north. Between the forest, the river and the sea lies one of Africa's largest estuaries. It is teeming with wildlife—hippos, crocodiles, elephants and other animals are here in abundance. Africans had been using the forest and the area as hunting grounds and as a place to hide during conflicts as the impenetrability of the forest made it hard to traverse. For a long time the forest and the flats were protected from white hunters as well because malaria made travelling here extremely difficult. But at the beginning of the twentieth century the potential of the area as agricultural land was realised, and a heroic effort to make the land suitable for sugar cane production began. In the words of one of the first settlers to arrive:

"I fell in love with Umfolozi from the beginning. The Flats took their name from the broad flowing Umfolozi River, which as it neared the sea, formed a huge flat basin of rich alluvial soil. It was a waste of forest, papyrus and elephant grass in the river delta. Umfolozi was on the borders of Natal's white settlement; beyond was Native Reserve. To tame this wild place and bring it into fruitful production, appeared a man's full sized job" (Heaton Nicholls 1961, 92–3).

And a man's full sized job it must have been to tame it and turn it into productive land. After successfully establishing a sugar cane plantation and finally managing to gather support for the creation of a mill controlled by the farmers, a series of floods

destroyed the mill and several of the farms. But these were hardy men. Heaton Nicholls describes his fellow settlers as men of the British Empire who had travelled widely and been engaged in shipping tea in Burma, growing coffee in Nyasaland, worked on the Panama Canal, grown sugar in Demerara, digging for gold in Kalgoorlie. Heaton Nicholls himself had just arrived from New Guinea. These men cleared the flats, channelled the river, drained the swamps, and fought to take control over the sugar mill and in the end created the rich farmland that still exists today.

We are leaving town in the early morning while the air is still chilly. As we pass the gates of the reserve, the landscape opens up. In the distance, trees, and a group of bucks grazing; still further on a rhino. Together with a couple from the Netherlands we are driven in an open safari vehicle into the park. Most people only experience the wildlife from behind their windscreens, but this morning our guides will take us walking among the animals. We especially want a closer look at the black rhinos that this area is known for. The black rhino has a reputation for being fierce. Therefore, in addition to our guide, a game guard with a rifle is accompanying us. We are told to run for the nearest tree should a rhino charge. After an hours walk, we see a group of animals towards the edge of a clearing, quite a distance off. The guard tells us to keep low as we approach. We manage to get quite close to them before they sense us, raise their heads, and walk slowly off.

This experience was made possible by the pioneering work of Ian Player, who in 1959 led the first wilderness walk. He believed strongly that urban dwellers needed to reconnect with wilderness and nature as he himself had done through his experience as a game guard. Player, in addition to being an unrelenting advocate for conservation, has also published a number of books where he vividly describes for the reader his experiences of wilderness, as here, when the bush awakens to life after a storm:

“I turned periodically, looking in a 360o arch, my inner eye and ear catching sights and sounds: a sparkling drop of water on the wind-

beaten and drooping themeda grass glowing red, the dark bark of a marula tree shining in the twilight of the day. Water in pools on the road, black ants scurrying to avoid having to swim. The splayed footprints of a white rhino that had passed in the storm, slipping in the mud. A land monitor lizard lying still beneath a tree, its body shining in the last rays of sun. The hush of the veld after the storm. The anticipatory silence of less than a minute, waiting for the first frog or bird to call. Then a chorus of frogs in a paean of praise for the rain. From down at the river and in the kloofs different frogs called, each group or individual giving space to the others. A soft sighing of the last of the storm wind carried with it the sounds of the white-browed scrub robin and the black-crowned tchagra shrike, a soft whistle from the tchagra that rose and fell with extraordinary clarity, like a soprano holding a lilting trill. Each song complemented the other - the frogs, the birds, then the deep bass of a baboon troop leader in the direction of Nqabaneni.... I was filled with the emotion of the storm and the symphony of bird, frog, wind, and all the things I had seen. Some unknown part of me had been touched. It went far beyond ordinary human emotion. Somewhere there was this ancient core that had understood all I had experienced. A thought crossed my mind: Had I not been here before? Before I could rationalize it, a voice within me said, "Look upon your home." (Player 1999, 36-37).

The forest and the river provide people with fruits, wild animals to hunt, springs of fresh water and fish, as well as firewood and material for sculptures to sell to tourists; they also serve as grazing fields, while the floodplains around the river contain earth so rich that it could be used as fertiliser. We are sitting under a tree with a group of young men who live in the forest. They explain that the soil is so rich that there is no crop that could fail to grow here. Together we examine a map of the surrounding area. They point to the cropping fields along the river and explain that these are their source of wealth. This is where they grow different types of crops like bananas, which they sell for money. The land along the river is the main reason why

they live in the forest. Most of the people here are unemployed, and their source of livelihood is the cropping fields. They explain that the type of high-quality soil found in that portion is unique to the forest.

The youth also point to the wetlands shown on the map, and say that they can use these wetlands to create jobs. They can use them to attract tourists. The indigenous forest contains trees that are not found in other countries, and they know which trees these are. There are also unique wild animals, as well as plenty of fish in the Umfolozi River and Lake St Lucia. These resources will contribute a great deal in creating job opportunities, such as the project the youth have in mind of rearing fish for commercial purposes.

Livestock used to be more important before, but as land for grazing has become scarce, this is now less of an option. The cattle invade people's cropping fields, thereby creating tension in the community. They instead try to keep smaller livestock such as goats and chickens.

The people who live here have an intimate relationship with their environment. They know which wild animals live in the forest and how to hunt them. They know which fruits and crops to plant in the flood plains. This is an environment that is actively used and managed. People know when the different animals give birth and avoid hunting them during such times; they also cut trees to create grazing and cropping fields. They agree that there is not a lot of forest left behind now. Most of the trees around their homesteads have been cut down to create space for houses and cropping fields. The exception is a part of the forest called Futululu, which remains untouched.

Three forests: one converted to productive industrial agriculture and rescued from wilderness, one indigenous forest representing the wild and original Africa, a home, and one converted to small scale production and utilised for its resources. But these forests do not exist as discrete, bounded and separate realities. They are rather emergent possibilities in more or less the same area. The area is known as the Dukuduku forest. It lies adjacent to South Africa's first UNESCO World Heritage site, the Isimangaliso Wetland Park, which received its world heritage status as the Greater St Lucia Wetland Park in 1999.

My first introduction to St Lucia and the Dukuduku forest was in 2007. It is one of the most spectacular and beautiful areas I have seen. Heading north from Durban for a few hours, you leave the N2 and travel for half an hour or so, first past the town of Mtubatuba and finally towards the coast of the Indian Ocean and St Lucia town, the estuary and the beaches. As you approach the coast, the planted eucalyptus trees give way to sugarcane plantations and finally warning signs with pictures of hippos, crocodiles and elephants.

Nearer the wetland park, the scene changes again as the road passes through what is left of the Dukuduku forest. Along the road, young boys have erected stalls selling woodcarvings of wild animals and "upside-down trees", small trees with roots shaped so as to resemble the crown, for the tourist market. A bit further on, to the right, the lush vegetation is suddenly replaced by a typical scene from rural South Africa: small homes, clearings and cattle tended by young boys. The road then takes you over a bridge that crosses the estuary which is one of St Lucia's main attractions. Pausing at the bridge and looking down into the estuary, you can see schools of hippos lounging about in the muddy water and flat-bottomed tourists boats congregated around them. After passing an unmanned security checkpoint, you enter St Lucia town itself. This small town, in size rather a village, was established in the 1930s to cater for tourists and fishermen, and it still serves mainly as a tourism destination. A few shops and restaurants are situated on the main road as you enter the town, while guest houses and a few hotels are spread along the half a dozen other small streets with names such as Kingfisher Street, Hornbill Street, and Dolfyn Avenue. Trees and bushes take up the space between houses and surround the town, giving it the feel of being situated in a nature area. Should you wish to go for a walk, one route will take you through a small wood where you are likely to encounter small duikers, or bucks, and then down to the estuary, where you have to watch out for crocodiles and hippos. From there, a wooden path takes you toward the beaches of the Indian Ocean and past the estuary mouth, popular with local fishermen. Standing on the beach, you can on a clear day see how it stretches for miles and miles to the north.

Just north of the town the Isimangaliso Wetland Park begins. From the Cape of St Lucia, it stretches for 220 km along the coast, all the way to the border with Mozambique. The park covers an area of 320 000 hectares and, according to the information prepared for visitors, has “three major lake systems, 8 interlinked ecosystems, 700 year old fishing traditions, most of South Africa’s remaining swamp forest, Africa’s largest estuarine system, 526 bird species and 25 000 year old coastal dunes – amongst the highest in the world”.

If you, like me, arrive for the first time in the area as a tourist, browsing the many whale watching, hippo cruising and game touring options, you might be forgiven for not having noted the Dukuduku forest on your way in. From the comfort of your car as you cruise along the road towards the park and the town, there does not seem to be much left of it. Not many trees are visible from the road. Also hidden from view is the Umfolozi river, the river that Ian Player crossed and experienced as home, the river that both made the flats so inviting for the sugar cane growers and which destroyed their mill, and the river that in the last decades have drawn poor people to settle and seek to make a living cultivating its banks.

The forest was originally meant to be part of the park, but in the end it was excluded from the World Heritage application because of its contested nature. The proposers of the park were uncertain of whether the application would succeed if it included the forest, whether it was possible to convincingly claim that the Dukuduku forest was part of a natural environment worthy of protection.

For as the three depictions above make clear, the Dukuduku forest is not one but many. One is a primordial forest first pushed close to extinction by industrial agriculture and forestry, and whose remaining enclaves are being cut down by squatters who have no appreciation for nature. Another forest is being reclaimed by people who have been forcibly evicted from it, first in the name of forestry and more recently in the name of conservation. Yet a third forest has been successfully converted into sugar cane fields and industrial forestry through the planting of fast growing species.

Conservationists argue that the black smallholders who have cleared the forest and created fields and homes there are destroying a unique indigenous forest. The carved figures sold by the road and the upside-down trees are likewise held out as examples of senseless destruction of the environment. By contrast, many of the people living in the forest tell stories of decades of forced removals and harassment, first to make place for industrial agriculture and forestry, now to protect the environment.

Many different groups thus have a stake in St Lucia and what it is. Is it a unique piece of a primordial Africa, to be preserved for future generations? Or is it prime agricultural land, one of the cornerstones of the sugar industry that has generated so much wealth in the region? Or yet again, just another example of enclosures by white people, land taken from African forefathers that is now being claimed back? Land roamed by wild animals, planted with imported pines, with sugar cane, or cleared by smallholdings – all these constitute different realities in the making.

These realities also blend and mix into each other, sometimes as jarring reminders of other realities in the making, sometimes in the form of violent conflicts. In the visions of undisturbed nature created in the park, roots of imported pines stand as reminders of other forces. The Dukuduku forest is both a site of livelihoods and preservation. People living there complain of harassment when they treat the park and the forest as resources, and conservation nature is threatened by invasions and land claims.

In this paper I will use these emergent and contested realities as a case to examine nature conservation in the form of protected areas as one of the responses to environmental destruction. One problem with protected areas, I will argue, is that they build on a separation of the natural and social, even in their attempts at mediating conflicts between conservation interests and the communities living adjacent to protected areas. In place of this, we need to explore what conservation

in a world that is emergent and fluid would entail. But first a short introduction to the situation in St Lucia as it appears today.

NATURES IN ST LUCIA

St Lucia has been a site of contestation for a very long time – not just by different groups over access to the same resources (although this is an important part of the story too) but also over the nature of what St Lucia is. With the area serving as hunting grounds for Africans as well as for colonial expansion, the relationship between people and animals was radically altered in the mid-19th century, when Zululand was incorporated into the global economy of animal trade goods, first and foremost ivory. This trade, although controlled by white traders and hunters from Natal, also created networks of Africans and Europeans to supply these goods.

The heavy pressure on those animals sought for their horns, skins and meat led to their near extinction, first around large settlements such as Port Natal, later in more remote areas of Zululand. The colonial elites reacted to the disappearance of game by redefining their relationship to these animals as one of 'sport'. This simultaneously re-cast African hunters and their hunting methods as poaching, as cruel and unsportsmanlike. In so doing, colonial elites were quite deliberately tapping into a long history, stretching back to antiquity and the classics in which they were well versed, whereby power and superiority were demonstrated by performing the Hunt.

But the St Lucia area was also subject to other forces that sought to make real very different relationships between people and animals. Most importantly, the African small-holders resented the restrictions on their access to animal resources, both because this deprived them of an important resource, but also because restrictions on shooting wild animals near their homesteads led to crops being destroyed and diseases spreading, first and foremost the wasting malady nagana. Fearing political unrest, the colonial authorities decided to allow some hunting around African

homesteads, and at the same time created game reserves in the most remote and disease-infected areas, among them the Dukuduku forest of St Lucia.

The work of the delimitation commission in the early years of the 20th century and the subsequent opening up of Zululand for white settlers altered relations profoundly. New plant species were introduced, most importantly eucalyptus, pine trees and sugar cane, to be grown in the rich soil of the river beds of the Umfolozi. The capital invested in this new production was also used to change the landscape dramatically – not only were forests cleared and new species planted in its place, but the very course of the Umfolozi River was changed. The river, which had meandered across the plains on its way to the St Lucia estuary, was channelled, and its mouth shifted so that it emptied directly into the Indian Ocean.

At the beginning of the 20th century, St Lucia as productive fields seemed to have supplanted prior realities – African smallholders were being moved to make way for the new industry, and many of the game reserves were de-proclaimed because they were seen as harbouring diseases that threatened livestock production. The people who had been living in the St Lucia area were forcibly moved to make place for these new enactments. Removals from the Dukuduku forest took place in the 1930s with the establishment of forestry operations and, with far more publicity, from the Eastern shores in the 1950s. The argument for these removals was then to enable industrial utilisation of the land.

But transformations such as these are neither linear nor causal. Counter-currents arouse that sought to place familiar elements in new relations. In St Lucia, plans for strip-mining the sand dunes and the ensuing campaign to save St Lucia served as the catalyst for a new enactment of nature. In celebrating the “wild lands” of St Lucia, the removal of forests and draining of swamps that had been heralded as the masterful taming and utilisation of the land by the authorities and the first settlers were now seen as destruction: destruction of the primordial, of the pre-human, of the wild and natural Africa. Among the emergent affluent middle classes, the industrial transformation of the landscape created its inverse – a longing for nature,

untouched nature. In the South African case, this movement can be traced to the merging of two genealogies – on the one hand, an elitist transformation of the Hunt into nature conservation, part of an international set of relations that saw attempts at having game reserves established throughout Africa, the downward mobility of some of these sentiments to the emergent middle classes; and, on the other hand, the South African political project of forming a basis for a new white national identity by linking it to romantic ideas of the pre-settlement landscape on the other.

In St Lucia these processes cumulated in the creation of South Africa's first UNESCO World Heritage Site in 1999, but this did not mean an end to contestations. As we have seen, the Dukuduku forest bordering the park encapsulates this diverse history. Neither do the people who live Dukuduku constitute a homogeneous community. United in their wish to farm the rich riverbeds of the Umfolozi – which also brought white industrial agriculture to the area – they are highly divided in their relationships to the land. Some want to claim the forest and surrounding areas as their right under the South African land restitution process; other are violently opposed to such attempts. Neither do they agree on how to relate to those who have previously accepted offers of compensation for leaving the forest, nor on how to relate to park authorities and other officials.

The trees planted as part of a capitalist industrial monoculture and hence an important economic asset in St Lucia as productive fields, also appear as aliens, as invaders in conservation natures, and destroyers of homesteads and grazing grounds for the people who lived on the eastern shores in the 1950s. The trees are not just symbols or constructs interpreted or made meaningful within different interpretations of one nature. They are physically present: planted, resisted and burned. In turn they shape the landscape in which they grow, whether they were introduced or not. The same holds for the animals that have been variously cast as commodity, game, vermin, carriers of disease, destroyers of crops and embodiments of a pure, pre-colonial nature. Likewise conservation and parks, middle-class appreciations of wilderness, forestry, fishing, and African smallholdings and most importantly, land reform. These realities cannot be reduced

to structural economical externals: they are performed and embodied and tied to the landscape in which they are made real.

The struggle over what St Lucia is to be is not just symbolic: it is also a very real struggle over what the land actually is, and how it will physically look in the future. The outcome is not a foregone conclusion, and whether industrial agriculture, land claims or conservation nature will emerge as the dominant reality remains to be seen. As far as the Dukuduku forest is concerned, two opposed futures seem to present themselves – one claiming that biological and conservation sciences tell us that humans do not belong in 'nature', and that to save such nature, we need to recreate a dual ontology materially by erecting fences, policing borders, and prosecuting trespassers. People who relate to their environment as small-scale producers constitute a competing reality. As we have seen, this conflict recreates a conflict rooted in colonialism, over access to natural resources.

PROTECTED AREAS A PURIFIED NATURE

The problems faced by St Lucia are not unique. They are rather the norm wherever protected areas are created. Establishing protected areas seems intuitively correct. If the environmental problems facing many parts of the world have been created by human processes such as industrialisation and pollution and environmental destruction, if, as some suggest we live in the age of the anthropocene, then surely the obvious solution must be to protect and save at least some areas from these negative influences by keeping people away from them.

This policy has been pursued at least since the final decades of the 19th century, and with great success. Official records now lists over 105,000 protected areas in the world, covering more than 20 million km². There is, however, one serious problem with holding up conservation through protected areas as the solution to environmental challenges. This strategy builds on an ontology that posits a fundamental distinction between humanity on the one side, and nature on the other. This is problematic for two reasons: First, many protected areas are

surrounded by conflicts. Some of these are conflicts with neighbouring communities over access to resources in and surrounding parks. While it is highly questionable to use violence to prevent people from trespassing on conservation areas in the name of saving nature, it is even more problematic to justify this with reference to protecting animals and landscapes for the consumption of visitors. Second, the idea that nature and humanity are fundamentally opposed is an idea with specific origins. One of these origins is found in the reaction to the dramatic changes of rural areas that took place with industrialisation. The ensuing transformations of rural areas created in some people a romantic longing for areas that had not been transformed by these changes, a nature pure and pristine. If our sense of nature as undisturbed by humans is a reaction to the main problems of environmental change, we have to be suspicious of posing this as the solution to the very same problem. In other words, if the ontological distinction between nature and humanity evolved as a reaction to the destruction of environments, can that same ontology form part of the solution?

RELATING THE SOCIAL AND THE NATURAL

Critiques such as these sparked a new trend in conservation policies from the 1980s, with a belief that it was possible to combine the interest of indigenous and traditional peoples and conservation. Programmes variously labelled community-based natural resource management, community-based conservation, sustainable development and use, grassroots conservation and integrated conservation and development programmes abounded.

But the outcomes of these attempts left much to be desired (e.g. Benjaminsen 2008, 2009, Kepe 2007). The goals of conservationists and indigenous peoples were seldom aligned. Conservation projects give priority to biodiversity conservation – often understood as protecting nature from the impact of people, indigenous or otherwise. Indigenous people, on the other hand, often start from the need to have their rights to land legally recognised, and then to find ways of using resources that will not deplete them. In a report published by the Wildlife Conservation Society and

based on a survey of 37 case studies, Agrawal and Redford (2006) conclude that interventions tend to fail because policies are based on over-simplified understandings of both poverty and biodiversity.

As Büscher and Whande (2007) note, the apparent change in conservation discourse from fortress conservation, or fence and fine conservation, has 'often stayed semantic' (2007, 27). Further, they argue, "the failure of CBC to bring either conservation or development was increasingly noted... and further fortified by increasing calls to go "back to the barriers"" (2007, 27).

This is a problem that has affinity with discussions in the related discipline of development studies (Brockington has repeatedly called for closer integration of the two academic disciplines of environmental and development studies, an approach I wholeheartedly support). Critical studies of development interventions have pointed out that in "participatory" or "bottom-up" approaches to development, closely affiliated to the idea of community-based conservation, the goal that is supposed to grow out of the process of development itself is of necessity defined prior to the development intervention (Nustad 2001). True, the rhetoric is different – here the argument was that people themselves best knew how to achieve development ends and that the role of the expert should be to facilitate this process of development rather than to determine it. This has in most cases not worked at all, becoming a travesty in many development interventions as when experts say of people they have worked with that they have been "facilitated" or even "participated", clearly showing where these experts really believe that agency lies.

In fact, the problem is more fundamental and cannot be ascribed solely to cynical experts. As Cowen and Shenton (1996) have pointed out, participatory development builds on a contradiction: moving a community or society from one stage to another, from underdevelopment to development, presupposes that the society in question knows what constitutes the goal of development – but then they would already have to be 'developed'. This was not a problem when development in the modern sense of development interventions was formulated in the mid-19th

century. Then it was seen as self-evidently right that a group of experts should act as trustees for society, guiding its transformation. Indeed, the whole idea of development interventions presupposes such a notion of trusteeship. This becomes a contradiction when the idea of development interventions is used to argue for a bottom-up development process. What happens in practice is that people are allowed to guide their own development as long as the process is directed towards final goals that have been determined by the outside “facilitator”.

A similar problem seems to underlie the many efforts to involve local communities in conservation efforts. Despite all attempts and (sometimes) good intentions of including communities in conservation, the goal of conservation has been defined well in advance. Such “community-based” conservation is in fact aligned with goals that have been externally imposed by a conservation body – making the whole process fundamentally contradictory. More so, as we have seen, because these externally imposed conservation values build on a dualistic ontology predicated on an opposition between people and nature in the first place.

CONSERVATION BEYOND PURIFICATION?

Where conservation goes wrong, then, in my view, is in insisting that nature is one, singular and external to human society. In its place we need a conception of our surroundings as environments, as shaped by humans and non-humans alike, and forming us in turn. These processes are fluid, creating a multiplicity of possible realities.

Treating realities as emergent and fluid rather than ungraspable or rigid raises the stakes for both research and activism. Describing protected areas as both created and as one version of Africa among many others has two implications: on the one hand it can add materiality to our understandings of environments in a way that social constructivist analyses cannot, by revealing the relations which make them real. At the same time, however, the approach shakes their very foundations by showing that they are not the only possible reality. Yes, within a conservation

enactment, the existence of small-scale agriculture constitutes destruction, and the planting of eucalyptus trees means aiding an alien invasion. Similarly, within a small-scale production reality, the erection of fences, the (re-)introduction of wild animals and the killing of trespassers is yet another instance of dispossession of land and resources.

Treating realities as multiple thus shifts the focus to where the real problems that we are facing are located – in the juncture of our way of living in the sum total of our relations with other entities, human and non-human – in short, our environments. It does away with the fiction that these challenges can be solved by recreating ontological dualisms – creating fences between nature and society, and then violently policing these.

Insisting on a single external nature underpins a colonial relationship with our surroundings. It presents us with a pre-formed surface, ready to be occupied and intervened in. But as Ingold points out, to “intervene in the world...implies the possibility of our choosing not to do so... It implies that human beings can launch their interventions from a platform above the world, as though they could live on or off the environment, but are not destined to live within it” (Ingold 2000, 215).

This idea of interventions is not only based on dualism. The way in which policymakers and environmentalists posit “the global environment” as an entity at the same time constitutes other people’s views as local and partial. To hold that one’s own outlook is global means simultaneously claiming that other people’s views are partial. The conflicts that surround the Isimangaliso Wetland Park, and many other protected areas, are rooted in claims of representing the global. From a global perspective it makes sense to listen to local concerns, and perhaps also seriously consider their points of view, but any relationship that is constituted as local will always have to be subsumed under the global. The global actor knows what is best in the end because only he (and with environmental management it is very often a “he”) knows what is for the greater good. As a planner told Hughes in a

workshop outside Pretoria: “peasants see the landscape from the snake level” whereas policy makers see “the landscape from the bird’s view” (2005, 161).

But these scales have to be conjured (Tsing 2005). Hughes (2005) shows how conservationists in Southern Africa seek to transgress national boundaries and imagine conservation areas that stretch from Cape to Cairo. Büscher (2013) likewise details how the Peace Park Foundation denote itself as the global solution to conservation problems, and as the antidote to the colonial imposed division of Africa into nation states.

These claims to universality have to be enacted in worldly encounters, and these encounters create what appears as messiness and specificity. The global must therefore be studied ethnographically: how do claims to universals work in a practical sense, what do they do? Global environmentality as it emerged from the 1960s is such a claim to universality, and as we have seen, it was instrumental in drawing together a group of actors to mobilise against mining in St Lucia. But turning St Lucia, and especially the Dukuduku forest, into a local example of a threatened global environment was not easy. The attempt crashed and merged with other enactments of the forest to produce the tensions that are there today.

BEYOND DUALITY?

Today it has become part of mainstream conservation to argue for the importance of taking into account both conservation goals and the interests of impoverished surrounding communities. But such optimistic assessments are increasingly being subjected to doubt by conservationists and development workers alike. Most commentators have concluded that the various schemes to combine development goals of poor communities and conservation interests have failed (for overviews, see McShane et al. 2011, Hirsch et al. 2011). Moreover, these approaches seem to have failed in both their stated objectives: ecologists complain that the attempt at combining development goals and conservation objectives has impacted negatively on biodiversity, and that that these approaches are at their core ecologically

unsound. Those working with development issues, on the other hand, complain that the economic gains from protected areas have been too small and too late in arriving, that these areas do not tend to create the jobs promised, and that any benefits that do occur tend to be concentrated among the elites (McShane et al. 2011). Unsurprisingly, these sentiments have led to increased irritation and militancy on both sides, with indigenous organisations and some NGOs becoming more anti-conservationist, and conservationists arguing for dropping integrated projects and returning to a purer form of nature conservation (McShane et al. 2011, 968).

Alongside this polarisation, other scholars have argued for a concept of 'trade-offs' to replace the win-win discourse. This would appear sensible: the approach recognises that conservation goals and development goals are often impossible to reconcile and that real choices have to be made between the two. Its proponents hope to counter the cynicism produced by the current cycle of win-win promises and policy plans and failed results on the ground. They also point out some of the pitfalls: a trade-off perspective may easily be construed as a technical exercise obscuring the basic questions of who loses, who benefits and who pays. From the group running the Advancing Conservation in a Social Context has come a list of guiding principles for analysing trade-offs and hard choices (McShane et al. 2011, 969 ff), which include issues of scale, context, pluralism and complexity. Among the latter is this principle: "human and natural systems are inextricably linked".

While sympathising with this attempt to move beyond the win-win discourse, I do not believe that the concept of trade-offs goes far enough. The question is not so much how human and natural systems are linked, as how the idea that environments can be conceived as consisting of two "systems", one human and the other natural, arose in the first place. The concept of trade-offs is a first step towards recognising this, but it still seems to take for granted the separation of two distinct realms of reality – one social part of reality addressed and championed by development workers, and one natural part which belong to the realm of ecologists and conservationists.

Using the St Lucia case as a starting point, the question becomes instead: is biodiversity conservation simply the latest manifestation of white, European and elite attempts at separating poor people from natural resources? To argue that this is not the case, and that protected areas do serve some purpose, we must nevertheless recognise the most of today's parks and protected areas, at least in Southern Africa but also elsewhere, are the result of past dispossessions and dualities imposed on environments. In other words, we need to ask: with what right do we continue to impose a separation of the natural and the social on rural landscapes? With what right do we restrict access to these areas to those who can afford to pay to enter them so that they can satisfy their yearnings for pure wilderness and untouched natures? With what right do we police and sometimes kill those who transgress these enactments?

If the existence of protected areas cannot be politically justified by calling on one objective reality, those of us who still want them to exist will have to ground our arguments in other, less absolutist ontologies. There are many reasons for doing so. A major problem with the neoliberal turn in conservation – in addition to the alliances formed between conservation and polluting industries and the consequent taming of these organisations – is that the neoliberal solution, like other market forms before it, is founded on and further entrenches the separation of the natural and the social. That alienation is an effect of commodification is of course not a new insight, but it remains as true today as when Marx first pointed it out.

The idea of wilderness builds on purification. At its roots lies an idea of nature undisturbed and untouched by humans. But efforts like these always produce new sets of impure entities, new forms of hybrids. The paradoxes involved in creating wilderness in St Lucia are glaring: they require the use of modern ecological science and practices such as the use of fire to mimic the effect of the human inhabitants who once shaped the environment but have now been displaced from the area. One node in the human–environment relation is sought purified – while the other is banished, expelled, made invisible. The creation of a nature free of human influence

takes a lot of human work. This purification is coupled with the even more problematic violent policing of boundaries.

This is why it is important that both environmentalists and social scientists seek common ground. Perhaps there is hope: Aidan Davison (2008), studying Australian environmentalists' conceptions of nature, finds a complex interplay of dualist and non-dualist understandings of "nature" and "society". When expressing pessimism about the project of conservation, his respondents relied on an understanding of nature as external to human society. Asked to reflect on their own experiences, however, they produced a much more nuanced understand of humans-in-environments. Davison concludes that, even among people actively working to protect environments then, "ideas of untouched nature exist in complex interdependence with non-dualistic understandings of the seamlessness of social and natural existence" (2008, 1294).

Can we imagine an "impure nature", a hybrid type of game reserve that acknowledges the long histories of how humans, animals, plants, the sea and the river, all acting together, have shaped what St Lucia is today? One that acknowledges the people who lived there before the first white settlers arrived, the intertwined histories of colonial expansion, world trade and African politics, and later industrialisation, forced removals and conservation? What would such a game reserve look like?

It would have to acknowledge that environments and people are becoming together and constituting each other. The parks of today treat the relationship between people and environments as if the environment, the park, was already constituted for visitors who is to skim its surface, without leaving a trace, rather than treating the visitors as contributing to the on going formation of the park through their movements, as visitors, people, animals and plants forming a meshwork of "entangled lines of life, growth and movement" (Ingold 2011, 63) as Ingold has put it in another context.

It would have to move well beyond attempts at involving “local communities” in the creation of purified objects, and would need to accept that nature is but one of many possible environments, historically contingent on mass destructions and transformations. Such a project is important, not just in trying to avoid the conflicts surrounding many protected areas today. As repeatedly stressed here, a dualist ontology also lies behind the predicaments that have created the environmental challenges we are facing. Focusing our efforts on solving these problems by creating “untouched” wilderness only shifts focus away from where the real problem lies.

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NATHALIA BRICHET & FRIDA HASTRUP
PRODUCING GOLD FROM A GREENLANDIC MOUNTAIN

PRODUCING GOLD ON COMMON GROUND

After several hours of travelling, taking off from flat Danish soil, flying over the enormous white inland ice cap, abruptly pierced now and then by black cliffs, small lakes and autumn colored mosses and lichen, we arrived in Kangerlussuaq, Greenland, where the daily plane from Denmark lands on the airstrip left behind by US military. To reach our final destination – the remote Nalunaq gold mine in Kirkespirdalen in the southernmost part of Greenland where a week of anthropological fieldwork awaited – we further depended upon so-called “good weather”, another smaller airplane, a helicopter, a mining company boat, and a minibus, as well as people to run all of these machines. Almost as a prologue to our upcoming week, we found ourselves whirled around by complex relations between humans and the forces of nature and were completely dependent on the collaboration of others.

By the end of September the small plants in Kirkespirdalen had used up their chlorophyll and were slowing down and shifting their activities. The Nalunaq mine, too, had run out of steam – the British mine company that managed it had spent all the money invested and all profit procured, and at the time of our fieldwork the employees were in the process of packing up and closing down – all while hastening to process what remained of blasted ore in the mined mountain and preparing to pour the last doré bars.

A battered van took us the last 9 kilometers to the mine camp from the harbor where the mine company boat had anchored. Eddie and Bryan, two experienced employees who were returning from two weeks off in Lithuania and Ireland

respectively, were with us in the van, and when it came to a halt by the mine camp's centre, the two of them simultaneously marked our arrival, one of them by saying "welcome to hell!", the other exclaiming "home sweet home!" Getting out of the car, we all laughed – maybe at the synchronicity and seeming incommensurability of the expressions.

These words of welcome were said in a light and joking atmosphere, but nonetheless – and perhaps all the more important for it – these two radically different but obviously coexisting analyses of life in the camp became a guiding light for us. In order for us to engage with the workings of the mine, we learned upon our very arrival that we needed analytical apparatuses stretchy enough to accommodate the range of perspectives implied in Bryan and Eddie's words. We were excited and puzzled; how could the mine be referred to as both a sweet home and hell at the same time? How would we respond to the challenge of not going with only one or the other portrayal, perhaps fulfilling an already conceived idea of what a goldmine is and making just the kind of clear cut judgments that seem obvious when engaging with a notoriously polluting and extractive mining industry? And finally, what is gold in Nalunaq when it requires the combined forces of workers' heterogeneous ideas, explosives, cyanide, global capital, trucks and sometimes even anthropologists among many other things for it to be produced? To explore these questions, we needed to get out of the car, onto common ground, and engage with the Nalunaq mine, where a series of collaborations, local analyses and comparisons all went into producing gold in the middle of nowhere.

CURIOSITY AND CRITIQUE - GENERATIVE ANALYSES

The fieldwork at the Nalunaq gold mine is part of a research project about the processing of raw materials (www.naturalgoods.saxo.ku.dk). One of the central analytical tenets of the project is to try to keep our objects of study – four selected natural goods – "underdefined", thereby letting the practical and analytical processing of them coproduce what they are and become. In the case of gold, then, this implies that instead of starting out by looking for a fixed natural unit – e.g. a

chemical number – which can then be seen in different perspectives, our ambition is to disturb any such notions of pure or core objects and the idea that various perspectives are ascribed to the presumably stable object. The point here is to work productively with the stance of not yet knowing what is at the centre of our analysis – in other words, only to know just enough of the object’s contours to recognize it, and then focus on the processes that make it vibrant through internally heterogeneous qualifications emerging from the fieldwork. One implication of not having determined the nature of our object from the outset – i.e. asking what it also is – is that we try to direct acute attention to ways in which the object gets generated in the very processes of people’s engaging with it. This, we suggest, implies a kind of lateral curiosity where we depend upon the engagements of others in order to make our objects appear – objects that are born out of collaborative processes rather than being “theirs” or “ours” (Hastrup 2011). Lateral curiosity, then, is not just a matter of being curious personally, but also of trying to make our collaborators curious about the world we share and often take for granted and of being willing to consider alternative ways of living. It is an impulse to invite people into the dialogue and ask for their analyses, thereby potentially changing, affirming, reconsidering – if ever so slightly – what they make of their lives, while hopefully enjoying the exchange with the curious newcomers. Lateral curiosity nurtures a kind of common ground, collaborative in nature, and challenges stereotypes and smooth analyses (cf. Tsing 2005). As we see it, the underdefined nature of objects and the virtue of lateral curiosity make analytical work add to what is explored – though sometimes only for a moment – rather than deconstruct it. The objects of study, then, emerge as actual products of joined forces, exploring what else the world might be.

This brings us to another key point of our research as a whole: we are not out to unveil hidden information or dubious agendas of, say, the mining industry and reveal the ways that it might stabilize concerns as facts or construct its own truth. Such an ambition of unveiling, we think, would demand too settled an idea beforehand of what the object and its context(s) are. The generative approach that we argue for, where objects get made in the collective processing of them, implies

that our material or data if you like can only be seen somehow as “public knowledge” – that is, products of encounters in the field that have no given and external context, apart from the connections and backgrounds that we commonly create, highlight or ignore, whereby, of course, such connections can no longer be seen as contexts but become “text” (Brichet & Hastrup 2011).

This idea of “public knowledge” is not to preclude the possibility of critique nor of looking to the cultural history of phenomena, though. But it is an attempt to locate and practice such critique and history somehow within what is explored, thereby employing the field as a site where contradictions might arise, disagreements emerge and paradoxes queue up. Critique, then, is not a matter of distance or demolition, but rather an attention towards possibilities of thinking beyond the stereotypes – exactly the product of lateral curiosity.

Indeed, in the Nalunaq mine, wreckage would be easy to pinpoint and criticize according to established notions of what makes a beautiful landscape, as would, in fact, recovery – but our challenge is to engage collaborators on site and explore the often ambivalent analyses that articulate the place as home and hell at once, thereby embedding critical reflection. This is a way of poking at the field that is intended to make people curious about their practices – potentially interweaving new analyses into existing ones. As we see it, this is a productive take on the discussion of representation – we are not out to first find and then limit our own biases and those of others so as to get at a more exact representation that builds on self-reflexivity, nor are we out to reveal where someone else has got it wrong so as to demonstrate how particular perspectives get (falsely) purified as truths. The notion of fieldwork material as public knowledge is a post-representational move that attempts to place the analytical processing out in the open, on the surface where things come together, instead of trying to peek behind the scene. The open, to be sure, can be ripe with conflict and diverging ideas, as of course with confidentiality and trust, but why not offer to explore and discuss these features? Engaging with extractive mining, we think, calls for and possibly poses a challenge to such willingness to explore the field as yet undetermined. What we try is to carve

out a room for conversation, spurred by lateral and generative curiosity, even about practices of ruination. Hell and sweet home, as we were reminded, were both qualifications of the machine that produced gold in Nalunaq. As we shall see, such conflicting analyses abounded. With these thoughts in mind, now let us turn to the interiors of the Nalunaq gold mine.

A LOT AND A LITTLE...

Some 20 kilometers of tunnel and slopes crisscross inside the mine. For a country like Greenland, where no towns are really connected by road to any other towns, this is a lot of road – even if we disregard for a moment the even more striking fact that it is all inside a mountain and thus not very visible from the outside. Nor, as it happened, from the inside, where driving up and down, and round in spirals in the worn out pickup truck was a truly disorienting experience. Even though we of course had some ideas in our heads about small gold jewelry objects and uniform gold bars in the cellars of banks, the first days in the mine really confirmed our idea of not yet knowing the nature of gold. We were amazed at what we saw in Kirkespirdalen. Compared to the smallness of a golden ring or even a gold bar, the enormous machinery and human labor engaged in producing gold at the Nalunaq mine seemed completely wild and, to be honest, quite out of proportions. A small village housing up to 130 people at its peak had been built, comprising barracks with single rooms for each worker, a fully equipped industrial canteen, bathrooms, a nurse's office, a fitness center, cleaning ladies, a harbor with a pontoon that had come all the way from Mississippi, machines and vehicles of various types and scales, a lab, a storage room the size of an indoor soccer field, containers filled with tons of explosives to blast the mountain into releasing ore, ore and even more ore, loads of which were moved around in trucks and along various conveyor belts inside the mountain. An underground processing mill, crushing the ore into small rocks and then dust, which gets mixed with water and cyanide that liquefies the gold, for it to solidify again, to finally be melted into gold bars, had been constructed inside the mine and now ran 24 hours a day.

We were certainly not aware of all this energy that it took to produce a monthly yield of approximately 20 kilograms of gold. The mill, as the workers called the processing plant, was adjusted according to the concentration of gold in the rock; in Nalunaq one thousand kilos of ore would eventually produce about 10 grams of gold on average. The massive discrepancy between a ton of blasted rock and 10 grams of noble metal and the effort it took to make the first into the latter somehow surprised us. The combination of large and heavy quantities and the smallness of the end product – costly enough, though, to have kept the mine running for almost a decade under shifting managements – brought home the point of exploring gold not as a given but as a contradictory and strange product. We felt thrilled and lucky, and slightly ashamed, that we had not really thought about gold in terms of the concrete efforts it took to procure it, except from a limited perspective.

During the first few days of our fieldwork, it only got more and more concrete. Instructions of how to use the mandatory emergency “life saver” to be worn on the belt that went with the working overalls, hardhat, hearing protection and security capped rubber boots, learning about the procedures of always keeping track of the number of people in the mine at any time, as well as about the huge quantities of food that were needed to feed the miners made it all appear as very serious business. On the other hand, we kept thinking and talking about it all as much ado about nothing. In a way, it seemed absurd comedy to us; all that machinery and the seriously challenging logistics to produce something small enough to fit in a shoebox, most of which is furthermore taken somewhere only to be stacked underground again in some high security hold. But then again, we discussed, maybe this is the way our global economy also works.

Talking to miners, kitchen staff, cleaners, mechanics and others, gold was only rarely the topic of our conversation. People would tell us about their daily chores, about who was currently the mine’s champion of the pool table in the recreational room, or about their home town, whether in Greenland or elsewhere. Gold seemed strangely circumstantial, although it was the only reason that the mine camp and the jobs there even existed. “A pile of dirt, is all it is”, Bryan said, while continuously

telling us that we should really stay for the next and final pour of gold, scheduled a few days after we had planned to leave. Seeing that, Bryan told us, would be an experience of a lifetime. This, he went on, was when the “guys who have worked their butts off” saw for themselves that it paid. In the days following each pour pictures with miners holding the gold bars would pop up on people’s Facebook profiles, for a short while dethroning the beautiful landscape photos that otherwise dominated the virtual life of the Nalunaq employees.

What struck us was that gold was both articulated as the driver of the entire operation, emptying a whole mountain with a marvelous result that could be displayed in photos and that paid (almost) enough to keep the mine company in the business, and an incidental product that in a sense did not compromise the natural beauty of the area, which the employees preserved in countless other photos and continuously directed our attention towards, whether by pointing out stunning peaks or remnants of old Norse settlements. At Nalunaq people seemed to live well with this ambiguity.

ENVIRONMENTS AND EXTRACTION

Before visiting the Nalunaq mine we were asked by colleagues if it had been difficult to be granted access to the mine. We had also worried that the fact that the mine was closing due to bad economy would make the managers hesitant to allow visitors. However, access proved to be ridiculously simple – it just demanded a short phone call to the director of the mine and an email where the purpose of the visit was stated as an interest “in the social processes and relations that go into making pure gold (...) all the work, considerations and knowledge that are needed in order to make something appear as a so-called ‘raw’ material.” (excerpt of a letter to the director of the mine). After some days, not only a positive answer but also an invitation to be their guest was in the inbox. At first, only one of us (Nathalia) was going, but it so happened that both of us suddenly had the opportunity to go, which meant we had to get back to the director asking for another bed, worrying that we were stretching our welcome a little. He responded with even more generosity,

arranging for us to be picked up by the company boat at the heliport and have free board and lodging in the camp for a week.

After a few days in the mine, many different people began inviting us to the official Saturday bar night in the camp. In the afternoon, Peter, the director, had taken us on the 9 km scenic drive down to the harbor to check on the explosives that were stored there, but first and foremost he wanted to pick at an iceberg to get “some million year old ice to cool our drinks for tonight”. In the evening, we stood in the bar and small-talked with Peter, who was full of jokes. The atmosphere shifted between light and more severe, as our conversation evolved around Peter’s years in the foreign legion in Africa and as a parachute soldier in the British army, the Nalunaq mine and the mining industry seen from his view, more stories from his life, photos of his beloved dog back home in England. We knew and could sense that he was a demanding and much respected boss, but much to our surprise every now and then he mixed his conversation with conjuring tricks from his restless hands. After yet another trick, involving a pencil, a business card and a 100 kroner note, I (Nathalia) asked him “Peter, how come you actually let us come and visit the mine?” He looked at us and said “oh I must have been in a good mood, and you put in a very charming request”. We laughed, but then he continued, “well, you must have caught me at the exactly right time...maybe after a good pour...but yes, it would have been easy to turn you down, you must have introduced your project in a way that I liked”. “Well,” I responded, “I was actually also a bit worried that you wouldn’t like to have an anthropologist sneaking around”. For a few seconds his restless body stood still and he looked me right in the eye and said “Recently, I had an email from a Japanese film crew who wanted to make a film about the mine, but you know what?” he asked rhetorically, “they said the wrong word, the E-word”. I was a bit flurried by our precarious conversation, having a feeling of teetering on a knife’s edge, so I must have looked completely clueless – “Environment” he finally said with a serious mine. I got even more perplexed and instinctively did not really want to hear more. Fortunately he took up the thread and explained “people think that mines today are run like mines were run 20 years ago. And certainly mines used to pollute a lot, but today I’m under even more strict regulations than other industries.

We have to live up to a whole set of regulations, the mining industry is thoroughly regulated, I tell you; but of course I'm not doing any good for the environment – I'm making a hole in a mountain!". This, to Peter, was not exactly an environmentalist thing to do; but, he said, the environmentalists are the same people who keep buying laptops, cell phones and fancy wrist watches, the kind of products that have gold and other metals in them. The challenge, to Peter, seemed to be to accomplish the extraction with the least possible effect on the environment, the good old pristine nature of which cooled the beer as we spoke.

When, on the day after the bar night, Peter was leaving for some meetings in the capital Nuuk and in England, in an attempt to succeed in selling on the mine to another company, he said goodbye to us by half-jokingly advising us to sum up our fieldwork experience and what we had learnt about gold by, as he put it, "quoting the manager: It is all magic".

CONCLUDING REMARKS: ZERO IMPACT AND PURITY

A decade or so after the Chernobyl disaster, extensive and diverse fungal growth was detected on the inner walls of the power plant (Zhdanova et al. 2000). Apart from mocking our ideas about viable places this also reminds us of the plain fact, not particularly controversial, that all kinds of life are potentially connected to destructive effects. As such wreckage and recovery could be seen as part of life processes with all the death and decay these imply.

In this conclusion, we want to discuss the "magic" of Nalunaq as a matter of somehow exporting the wreckage it causes from the area. Commenting on the strict regulations that apply to the mining business in Greenland, the former CEO of the Nalunaq mine remarks that: "The problem is, if you do damage to the environment in the Arctic, it takes centuries to repair it, but if you do damage to somewhere like the UK - create a road, chop down trees etc. - ten years later you wouldn't know you had been there. This is not the case in Greenland." The environmental impact, then, was indeed thought into the Nalunaq mine project – actually so much that the

former CEO promised a zero tolerance policy towards polluting the environment. Some outsiders even suggested that this concern about environmental impact was part of the explanation for the lack of profit generated by the company. Wreckage and pollution by the activities in the valley were of great concern and countered by careful practices, actually to such an extent that I (Nathalia) recently heard a person from the independent environmental research agency under Aarhus University say: “minen har været uden væsentlige miljøproblemer (...) vi har lavet overvågning og der er ingen væsentlige effekter på miljøet af minedriften (...) der bliver ryddet op”. (“The mine has run with no considerable environmental impact (...) We have monitored the operation and there are no environmental effects to speak of (...) The area will be cleaned up”). Further, the installation of an underground processing plant in the mine “provides Angel [the mining company] with the ultimate environmental control to ensure that there is no damage done to the Kirkespirsdalen valley.” (<http://angelmining.com/>).

Even though these statements and processes of monitoring are very reassuring, they might also be deceptive because of their particular and limited scope. Maybe every drop of oil can be removed from the rocky ground of the valley, and maybe all the machines, broken or not, might be re-sold to projects in Africa or just around the fjord, where a new mining project might take off in the near future, and maybe the barracks might serve the municipality to rent out to nature lovers who could have a comfortable sweet home to camp in and from where to enjoy the stunning nature of the area, as was suggested by the director.

But one might ask if the practices of wreckage and recovery can really be properly explored on site? Do the collaborations – ruining or restoring – that we found to be generative of Nalunaq gold not take us way beyond the particular site of the mine where wreckage is seemingly under control? Upon every gold pour, the gold is immediately sent to Switzerland for further refining, to then enter the global gold market with fluctuating prices that have a very real impact on what goes on in the mine – making it, among other things, into a business that is no longer profitable. Employees fly around all of Europe to go home and come back home. This is to say

that although Kirkespirdalen is where Nalunaq is located, Nalunaq is also lots of other places, potentially doing its bit of wreckage and recovery elsewhere.

The analytical challenge, then, is not just to accept the coexistence of hellish and homely features in one place, challenging as that may be, but also of extending the object explored to other places where it also is. The object cannot be seen as self-identical. Challenging though this is gold provides us with an illustration of the fact that such lack of self-identity is valuable and indeed necessary. Pure gold, the Nalunaq manager told us, can in fact only ever be 99,999 % pure. A little something else is in even the purest of gold. If gold were 100 % pure, it would fall apart and dissolve into liquid. In other words, something other than the thing also makes the thing. In Nalunaq and beyond, then, objects come to be what they are because of what they are not, calling for a collaborative approach.

Our kind of analysis is basically an offer and an invitation to explore objects as always less than complete, and thus focus on worlds as very real contradictions in terms.

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