

Chapter 3

Cartographies of Environmental Arts

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Because the concept in its unrestrained usage is a set of circumstances, at a volatile juncture. It is a vector: the point of application of a force moving through a space at a given velocity in a given direction. The concept has no subject or object other than itself. It is an act. —Brian Massumi.¹

This text functions as a cartography that is also an operating system. It is an exercise in how concepts migrate across art practices that deal with the environment and inform and condition the practices as ways of being involved in different material situations across differing scales. While it works in the midst of selected art works, Gilles Deleuze and Félix Guattari's philosophy is one underlying reference point even if at times left more implicit. Their work is particularly useful however as it facilitates the encounters of concepts with art practices and the sort of vectors that the epigraph from Massumi also points to: concepts map velocities that take place in territories and movements in and across territories, including passages in multiple other directions that extend the forms of sense and sensation that art practices are very good at producing. Hence, as expressed by Matthew Fuller who has already earlier summarised the possibilities of art methodologies in a precise way: 'Art methodologies convey art's capacities to enact a live process in the world, launching sensorial particles and other conjunctions in ways and combinations that renew their powers of disturbance and vision'.² The short sections in this chapter explore the various processes and dynamics, situations and localisations, planes of composition as well as institutional frameworks—even technologies—in which artistic practices unfold: in short, the sections map the temporality of the operating system as a process of organisation or a series of operations, rather than a structure.

PRACTICES, AN OPERATING SYSTEM

Textual practice—or what we can call conceptual practice to emphasise its material, locatable nature that itself can be a form of art methodology—becomes a way to tease out some of the qualities that are central in the visual, sonic, performative accounts that this chapter attends to as examples from current environmental art practices providing entry points to posthuman ecologies.³ The projects discussed in this short chapter express artistic relations to times, materials and political territory as ways to map the shifting dynamic scales of local and global, speeds and slownesses. These are forms of thinking that emerge in practice and their material situations. It's the practices that enable the emergence of conceptual territories as centres of concerns and of interest. In many ways, art projects become flexible, moving and collaborative exercises in mapping 'what is out there': these are the words used by Anna Tsing, Heather Swanson, Elaine Gan and Nils Bubandt in their introductory text to the volume *Arts of Living on a Damaged Planet* and in their use relate to the 'on-the-ground observations' and 'varied historical diffractions' in which we are constantly enfolded.⁴ Such arts of learning things 'out there' and 'in here' are also practical exercises about particular grounds, undergrounds, and the above-grounds of atmosphere and aerial vision. They are practices concerning companion species, some of which might be already long gone and dead. Practice binds these various sites into a circuit.

It is by now a truism to state that our environments are complex and constituted of multiple scales of reference, agency and time. Hence to speak of 'the environment' already starts off as too broad, so one must be quick to add: the place of practice involves the productive possibility of specifying, situating and allowing somewhat unexpected qualities to emerge, whether this comes out as a thing, a collective, an expression, or something else. And all this, the forms of practice—to be exercising, practising and engaging—sometimes take the form of a residency, sometimes the form of a temporary group, sometimes a dialogue, sometimes an encounter with other materials than humans. Artistic practice is often located in techniques such as focusing but it can benefit as immeasurably from *unfocusing*;⁵ to train oneself to observe what appears out of sight so as to cultivate an understanding of the structural complexity and agency of our environment and its various layers of activity.

To observe situations of space and place is often important for both artistic and conceptual practice too: to mark a territory in its dynamics. Tsing and colleagues write of landscapes as 'overlaid arrangements of human and nonhuman living spaces',⁶ and it is this sort of an involved relation to the landscape that, to me, feels most apt for thinking about the practices I am

concerned with. Landscapes as places and spaces, as technological and biological, signal an attachment to situated ways of doing. Naturally, not all landscapes are natural frontiers, and indeed in this chapter landscapes are treated more as mixed arrangements of knowledge and ecology. Laboratories, observatories and other institutional forms are referred to as particular historical models where perception or experimentation might take place, but also as places recreated, as adopted for artistic uses. These models seem particularly useful for understanding artistic practice in terms of posthuman ecology, as they are, traditionally, associated with the possibilities of rescaling, like Alice in Wonderland as the laboratory subject, as the observatory scientist par excellence. They take us higher, lower, deeper, involve us speaking to minerals, taking a breath of air with the wind, and seeing differently.



Figure 3.1: Helena Hunter. Photo from the collections of the Natural History Museum, London.

Consider Helena Hunter's (2018) writing-with-minerals as an example:

unseen
 uncertain frequency
 hear it cracking
 these fragments
 sustaining shouts

what language
 for your atoms?
 slow in speech
 to reach you

time pressures
 issues of strength

what if we garnet
 a question for the sky?
 How to write interruption
 Ways of seeing variance
 not writing as a tool
 of measurement

The words that become concepts are situated in places and acknowledge the importance of 'where'—of geographies, places, and spaces. They also act as part of cartographies that draw a 'micro-geography of power relations that are simultaneously local and global'.⁷ Hunter's text performs a work of conceptual cartography that is not only about local/global but also about the various other sorts of condensations of time, movement, place and art practices as forms of ecological knowing. I argue that this is where environmental art practice—art methods—can engage in dialogue with work in environmental humanities to complement their understanding of what is at stake in the topics that are, well, for the lack of a better word, about ecologies. Many of the examples presented in this chapter give insights into what fieldwork entails in situations where the artist or the collective is acutely aware of the field they enter, transform, listen to and move with.

One of the insights emerging from theoretical and artistic activity in recent years has been that ecology is less a word or an analytical term denoting a thing than it is a way of looking at things in their relations, conceptualising and making sense of their multiple scales. In other words, diverse things and relations can be coined as ecology. Ecology is more like an operation. This realisation opens up a world: a world of relations, abstractions, spaces that turn into movements, import and export operations, materials and how they

are made data, then calculated, operated upon and made into further things. Ecology is productive, and it becomes an onto-epistemological framework, to think with Karen Barad. This stance does not work at a distance but is involved: 'knowing is a material practice of engagement as part of the world in its differential becoming'.⁸

As involvements, ecology can be seen in words, interactions, political institutions, art practices, environmental situations, financial systems, and it can also bind all of those together in what becomes the insight of ecological practice: to establish relations. There is an 'ecology of practices' that is not merely a description of the current state of how things are done but an identification of potentials and novel forms of emergent knowing.⁹ There are political ecologies and there are conceptual ecologies that are abstract yet connote a completely material force.¹⁰ Cultural ecologies allow literary texts to move from them being merely words.¹¹ Ecology can be general in its relational operation, and there can be thousands of particular and distinct material ecologies embodying a general operation.¹² Digital ecologies can be our infrastructure, and media ecologies embody worlds of techniques, technologies, relations and processes.¹³ What is not amenable to being named as ecology?

In the context of ecology in art practices, the evaluative criteria of who, where, when, how connect to ethical issues of why, why not; art connects to assumed liberties of experimentation, which are still constrained by their situations and infrastructures as conditions of the very same experiments.¹⁴ We could name many of them, but for example: funding systems, places, travel, time and lack of time. This sort of an ecology is where landscape and the laboratory are entangled,¹⁵ as some practices in bioart have demonstrated. But those terms of landscape—frontier, laboratory, museum, observatory and more—carry with them a whole range of connotations that are important when considering the wider field of knowledge about, and in, those border zones where geopolitics and environmental issues meet.

These brief parameters are an attempt to speak to the operations and even implicit operating principles. If preferable, we can even call them methods that are at play in the organisation of ecologies. Keller Easterling's thoughts are helpful here. She writes about cities as operative forms, and how one particularly useful method for understanding urban life is to train the eye to unfocus from the immediately visible elements of buildings to their slightly less visible operating principles, to better observe their operating systems and infrastructure.¹⁶ Transport this beyond the context Easterling means it primarily for. Consider it in relation to our topic at hand and consider it in relation to the particular operating systems, principles and, indeed, cartographies that are also formative of art methods. What are the modes of operating, being involved, thinking and reporting that form the backbone for these operations?

HEIGHTS, IN-DEPTH

Any kind of frontier, geographic space and place is anyway multiple.¹⁷ It is multiple and it is further multiplied in various visual forms many of which are not, increasingly, human readable. To detach the observation of such situations from that pair of human eyes and sensorium is somewhat necessary for a full grasp of the multiple scales that define those situations one enters, including in rural settings. It also means asking: how do we become multiple and multiply our points of view into movement of views? This is a good reminder that not merely the more recent inventions relating to machine vision and other automated and technological systems detach from the usual human perspectives, but we also can make use of other techniques that shift us in place.

To lift upwards. Observation takes off from the ground we usually have stabilised most of human perception on. Landscapes are primarily horizontal¹⁸ but sometimes the aerial is where one starts to survey a different perspective than the normalised human inhabitant. This survey is not merely one of controlling birds'-eye views (even if birds are perhaps in many ways apt references for philosophies of surveying immanence, including a brief appearance in *What Is Philosophy?* of the 'ironical soliloquy bird'). As Deleuze and Guattari point out, spatio-temporal dynamics of a concept's path of survey relates to how it is constantly 'in relation to its components'.¹⁹ The survey becomes then a term for this immanence of the field in which and of which concepts emerge; and it also becomes a term for the operation that does not presuppose subjects surveying their objects, but the co-constitution of both—a dynamics of formation as an act itself.²⁰

Geographies are constantly surveyed and mapped from higher up, from realities of satellites and drones but also other ways of moving upwards and in-depth. A more DIY version is to use kites. Tuula Närhinen speaks of her *LOCAL* project at the Centre d'Art i Natura in Farrera in the Pyrenees:

I let the turbulent mountain winds carry my DIY kite equipped with a video camera; painted and catalogued colour perceptions in an archive of water colours and photographs; extracted minerals from the rocks and used them as paint and followed the meandering creeks on their way from the high sources of melting snow through the meadows into the deep river valley. Walking, climbing and flying over the mountains turned my body into an instrument of observation as well: I felt the terrain under my feet, breathed in the air and absorbed the scenery through my eyes.²¹

While she is speaking about the body as an instrument, it appears there is more at play. It concerns a body that becomes moving, uplifted and somewhat



Figure 3.2: Tuula Närhinen, 'Local Winds' (2015). Courtesy of the artist.

equipped with an added awareness of what is more than just above our heads as if heads were always stable and resident at the same level of vision. With a change in perspective, or a change in its usual situation or relation to the world, the body becomes assembled as a vehicle that allows us to be moved outside the assumption that it is a stable centre of attention and more akin to a force field which allows us to understand and perceive other sorts of scales too. The body becomes less a substance than a hinge that itself enables more than meets the eye at first. Bodies jump, walk, accelerate, decelerate, ascend, descend and more. Thoughts follow a path of movement. I feel that this is also the point expressed by Rebecca Solnit writing about walking as this back and forth play between the body and the world, a shape-shifting in movement: 'Moving on foot seems to make it easier to move in time; the mind wanders from plans to recollections to observations'.²² Walking is one way—and a very good example—of moving the body and its thoughts, but there are also other activities that take us into different speeds and heights.

A process is set off that also launches more than a body that is normalised. There is always more to perception and what it can become, as Elizabeth Grosz writes in her account of the Earth and the emergence of arts as a territorial framing about this multiplication of the Earth. The Earth is enveloped in this potentiality to become always more:

The Earth can be infinitely divided, territorialized, framed. ... Framing is how chaos becomes territory. Framing is the means by which objects are delimited, qualities unleashed and art is made possible.²³

Indeed, the Earth is less discovered as a ground than constantly in creation; it is ontogenetic. The Earth creates its own potentials for discovery. It becomes a potential dynamics of ungrounding that sets in process much more than just something easily returnable to a body. Grosz continues by way of emphasising that what emerges is not merely the body—one's own body as such—but a force that pushes something else to emerge: 'exactly the opposite: it is linked to those processes of distancing and the production of a plane of composition that abstracts sensation from the body'.²⁴ In these ways, the body becomes one part of a longer chain of operations that starts to understand the varieties where perception takes place and at times is returned to one's own body. One sees with much more than one's own eyes, one sees higher up, from particular perspectives that open up a landscape.

Higher up, Elena Mazzi with Sara Tirelli start to unfold the morphogenetic and dynamic understanding of a landscape in their work, *A fragmented world*. The work unfolds as a mediation between moving images taken from a geo-database used by geography and volcanology researchers, and what emerges as a simple hint of a narrative structure when the camera starts to zoom into a lone figure running through the landscape.²⁵ The breathing, movement and the bird's-eye view targeting of the subject itself becomes reminiscent of the ways in which aerial vision is a targeting vision while also resonating



Figure 3.3: Elena Mazzi and Sara Tirelli, *A fragmented world*, 2017. Installation view from the exhibition *Edge Effects: Active Earth*, Art Sonje Center, Seoul. Photo: Yeonje Kim. Used with permission.

with the point about shifting perspectives: higher, lower, slower, faster. An understanding of space and embodiment is also something that moves on different levels than the body itself, or where the body is an instrument that surveys, lives, moves across but also is enabled by the various geographies and localities. Large-scale stories such as the Anthropocene or the increasing human creation of uninhabitable wastelands come in smaller-scale versions, and in particular situations, or as Gan and colleagues put it:

Yet the Great Acceleration is best understood through immersion in many small and situated rhythms. Big stories take theirs from seemingly minor contingencies, asymmetrical encounters, and moments of indeterminacy. Landscapes show us.²⁶

Could one follow this line of thought to the other direction here too? Any extreme, even uninhabited landscape is never devoid of life and always part of the cultural techniques of geopolitical mapping. The Earth, as Benjamin Bratton²⁷ reminds us, is considered humanly important in terms of its territorial control as well as its particular resources that open up the underground to such depths of material excavation. These sorts of maps about frontiers were for their modern duration linked to colonialism and resource extraction. So, they are now too, as forms of neocolonialism in mining for fuel and nonfuel minerals for example.²⁸

So, what you see as the landscape is contingent upon how you visualise it. As scientific maps of resources, volumetric insights into the ground as harbouring gas or oil, as geologic strata that are quite literally fractured by hydraulic fracturing, making the landscape, the earth, to scream?²⁹ The unfocusing from the landscape to its constituent elements both upwards and downwards is one significant (and also rather literal) movement where bodies entangle with technological capacities. Perception is set in motion, while materials, but also their political ecologies, unfold as part and as co-constituent of that movement.

Downwards, one finds the other aspects of the geophysical environment, some of which are left as remnants of modern technological culture. To take these questions to geographies such as old agricultural sites, architectural ruins or old copper mines (as Mirko Nikolić does in '*earth wants to be free*')³⁰ starts to address a particular story about questions of geographic and legal territories and particular political technologies of inclusion and exclusion. But it also by necessity engages us in heightened perceptions of locality or localisation: we are exposed to histories of material transportation, use and resourcing of abstractions from legal questions of ownership to extending rights for nonhumans, and then questions of geopolitical lineages as well as speculative possibilities in art practice, all themes that emerge in Nikolić's practice too.



Figure 3.4: Mirko Nikolić, *earth wants to be free*, a 2-day camp symposium in Kemiö, Finland, May 2016. Photo: Salla Lahtinen / Frontiers in Retreat; HIAP.

FRONTIER, RETREAT

The shift from urban to the rural has entered many disciplines recently. Besides the usual suspects, media studies is refocusing on the infrastructures and political ecologies of landscapes outside the urban,³¹ geographical formations, and such. Similarly, parallel fields such as forensic architecture offer particularly apt tools to reveal the extended visual conditioning of legal and political struggles at the thresholds of usual political geographies.³² In art practices, this, for sure, is not a new feature but has been carried forward with many possible earlier reference points, not least Earth Arts.³³

Taru Elfving explains the centrality of the nonurban for art practices: the move outside the white cube is where the landscape, the terrain and the dynamic nature become part of the experimentation ‘within the frontier between the semiotic and the sensible, or between deconstructive and embodied/embedded methodologies, to name but a few’.³⁴ But less than deconstructive, one can coin these practices as additive: they add words, proposals, ideas, future trajectories, potentials and materials.³⁵ They survey the locations and landscapes in which they take place.

From the art market and discourse to cultural and political history, there is a lot at stake. At least since the emergence of the satellite era, frontiers have also been tightly marked for their geopolitical importance and for possible

resources (energy, minerals, etc.). Contemporary art and bioart practices have in this sense had to acknowledge that the local and the rural were already also marked by this particular history of planetary geopolitics. Frontiers carry with them the legacy of colonial expeditions and settlers moving in on indigenous lands—a frontier is what is declared as *res nullius*, whether such ever existed or not—and frontiers carry with them the connotation of military troop operations. Another concept of ‘front’ is borrowed from meteorology with some deliberate remediation of the military use of the term: ‘the interface or transition zone between two air masses of different density and temperature’ (as the *Encyclopedia Britannica* puts it). Political, military, meteorological terms mix. Similarly, art practices can be formative of what we perceive as frontiers of densities, intensities, masses and transformations. Art can be understood as a geographical concept constituted in particular zones, areas, sometimes rural and often uninhabited but always ecologically significant by virtue of their situatedness.³⁶

Traditionally frontiers such as forests have been central to the political definition of the territory and the polis. The foundation of the city has to do with techniques of managing the surrounding forests, and hence defining the borders of the political regime from what resided for such a long time as the imaginary of the forest, as the wild, uncontrolled multiplicity, ‘anarchy, shadows and the inhuman’.³⁷ What is important to note is that instead of merely marking the threshold of political order and its other, the frontier (such as forests but also other natural formations that are not necessarily inhabited by humans) are actually constantly produced, cultivated as such,³⁸ both in terms of their resources as well as landscapes, geopolitical zones, part of contemporary routes of transport, logistics, energy and so on.

Frontier is a particular situation that starts to open up as a political ecology, a spatial imaginary particular to the political history of liberalism (and its inherent link to colonialism).³⁹ And one can see how essential this is for decolonising and humanitarian projects that relate to European frontiers: for example, water frontiers, islands in the Mediterranean and other border zones, are intensively the places where the current geopolitical surveillance turns into the biopolitical control of refugees. In grim ways, some of this contemporary crisis is indeed about patterns of seeing and unseeing. Which capsized boat is being reported, or even rescued, is a matter of perception of liquid frontiers. Another aspect concerns mobility, represented by the different wall and fence formations and patterns of movement and preventing movement. Also retreat, a term easily understood only in its military connotations, becomes one way to think political and collective subjectivity while avoiding romanticising it.

To retreat is then not only a defensive gesture but marks a particular way of moving into a space and its political ecology. Retreat is then a sort of a temporally involved way of marking, inhabiting, experiencing and sensing

a space but also starting to address its multiple elements. These are not merely linguistic connotations or personal feelings about the space but an awareness of what it might mean as a meshwork of multiple forces: spaces are landscapes in the way outlined by Tsing et al.,⁴⁰ and they are entered more ethically with awareness of the onto-epistemological practices that acknowledge how knowing is materially involved in situations.

For some, to retreat is to focalise—a particular way of localising too, which extends to a set of practices. The artist duo, Nabb+Teeri, pitch such practices as a particular collective exercise in locations:

Focal practices gather human being around a focus that demands skills, traditions, and sociality. An example may be heating with wood since it engenders a bodily and skilful gathering around a meaningful practice that can be socially transmitted over generations. Focal practices mesh the practitioners into a collective and also non-human field of experience.⁴¹

But this exercise becomes more than mere phenomenological retuning. Nabb+Teeri ground their interest through the work of Antti Salminen and Tere Vadén who mobilise focality and related themes in their work on energy.⁴² Nabb+Teeri explain in more depth what focality means in terms of practice that relates to particular places but also is itself more akin to a co-determining practice in that material situation:

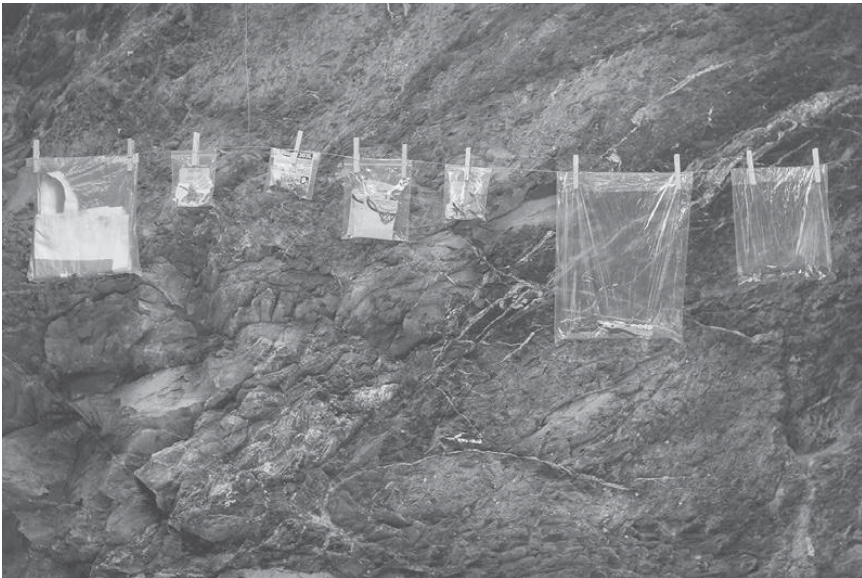


Figure 3.5: Nabb+Teeri, *Focal Exercises* (2015–2016). Photo: Courtesy of the artist.

Like localism, focality functions against con-distancing. Through training, a focal practice builds up a holistic skill, makes stronger its connections and centrifugal tendencies. A forester is challenged by the forest, and the forest in turn is challenged by the forester; the forester reacts with the store and the hearth, which in their turn change the timber and so on. If this mutual challenge can go on for generations, sustainable skills may be developed so that humans can live with their environments in ways that are both socially and ecologically sound. In this way, also, the human part of the challenge can be meaningful: it is not any more a technological enframing, but a developed part of the life of the local landbase.⁴³

But what is local? Here, local cannot, or should not, be set *against* global and as such, one needs to be aware of the complex cartographies where all entities (if one can call them such) are co-determining. Hence there is an interesting twist to continue to think how focality can be exercised as cartography in its own right. Collective practice starts to work around particular ways of making sense of areas—topographic maps, images, diagrams and such demonstrate how a territory can also turn into ways of passing on, connecting and collectively entering another visual level of what space is.

To retreat can mean to enter the multiple layers that define a space, including ones that escape the sensorium at first, and can then become images that continue a life of their own. The local itself then becomes understood as more than just what is here, catered to my senses. Indeed, this sort of an understanding is also necessary to avoid one of the seeming risks where retreat becomes a gesture of defensive bunkerism, as a sort of a version of survivalism where locality turns into an enclosure. Hence, a further question is necessary to guide the ethics of environmental art practice: how can situations of locality function as sorts of strategies for an engagement with the wider planetary situation? How is it possible to develop the cartography in ways where the local becomes more than its particular situation as self-enclosed entity?

LABORATORY, MUSEUM

What sort of institutional terms, practices and situations can multiply the local, or ensure it can scale up and down? Laboratories have acted as such places in many ways, while other sorts of scenes, such as tweaking the legacy of museums (Terike Haapoja and Laura Gustafsson's *Museum of Nonhumanity* for instance)⁴⁴ also challenges the assumed privileged of human history. Both 'human' and 'theory' are of course terms that were central to the modern institutional practices of the purification of nature out of

culture⁴⁵ but they also carry with them other possibilities as situations where classifications are rethought, histories are rearticulated and the rather messy situation of humans, animals, natural formations, geological durations and transdisciplinary forms of knowledge can pick up on the scalar effects and stage that either the lab or the museum offer.

‘Lab’ has become a term that has started to frame artistic activity too. The *Zooetics* project, a ‘cross-disciplinary exploration of future environmental fictions and models’,⁴⁶ is a particularly apt example of creating situations that work as laboratories—perhaps nodding to the lineage of art+technology that inaugurated this model during the twentieth century. But it also functions as a way of recreating situations where transdisciplinary knowledge is circulated while not contained inside institutional walls.⁴⁷ Laboratories were often anyway more than completely controlled and rationalised spaces. As historians of science have noted, the lab as *elaboratory* was one formative lab activity. Elaborating materials for medicine and chemistry, working with the variety of materials in ways that was not merely under human control; the elaboratory was a place to let things unfold in their own way, even if offering a stage by way of the thermomedia control⁴⁸ that allowed material transformations to be accelerated from Earth time to lab time.

For a longer period, laboratories also included an etymologically bootstrapped link to natural formations too—in other words, they were not necessarily seen as two separate spheres of messy nature versus the ordered laboratory, even if in many ways the lab took that place gradually. Considered ecologically, the laboratory was already in the landscapes, always-already before the current fever involving living laboratories.

In 1815 Sir Humphry Davy stated that ‘the soil is the laboratory in which the food is prepared’. In 1860, in a very different scientific context regarding the physical geographies of the sea, Louis Ferdinand Alfred Maury spoke of the sea as ‘a laboratory in which wonders by processes the most exquisite are continually going on’, as a sort of a model for understanding atmospheric movements.⁴⁹ One is tempted to start unfolding the story of contemporary islands, water routes and more through such ideas.

Indeed, reverse from our current laboratory fever some one hundred years and a bit more and shift the focus to Bangor in Wales and to Sir William Thomson, 1st Baron Kelvin of, indeed, *the* kelvin fame of temperature measurement, but who also worked with maritime compasses (as an early example of planetary media). When opening the new physics and chemistry labs in 1885 at the University of Bangor, Thomson seemed to be offering a rather extended way of understanding the link between emerging forms of knowledge and nature:

The laboratory of a scientific man is his place of work. The laboratory of the geologist and naturalist is the face of this beautiful world. The geologist's laboratory is the mountain, the ravine, and the seashore. The naturalist and the botanist go to foreign lands, to study the wonders of nature, and describe and classify the results of their observations.⁵⁰

Of course, one has to be aware that maps and knowledge of foreign lands, frontiers and wonders of nature were tightly integrated into the power systems of empires, colonial trade routes and outposts and capitalist mechanisms of profit and security. Following on from that particular modern legacy, there are several interesting developments that link the laboratory to a particular stance of resistance to modernity, embracing interdisciplinary knowledge and interested in a particular way of ensuring the global circulation of that knowledge. More recently and in artistic contexts, Bureau d'Etudes speak of the Laboratory Planet as the particular twentieth-century inaugurated global network of research sites, governance, military and surveillance, resource extraction and supply routes and such that offer a different way of looking at questions of planetary scale.⁵¹ The Laboratory Planet is one way of narrating the effects of capitalism and technological forms of knowledge as a global system that establishes natural formations and localities as part of its circulation. Laboratories were always already the place where nonhumans made an entry to modern forms of knowledge. Could it also be adapted as a counterforce, a stance to interrogate such forms of operation knowledge, mobilisation of natural resources, and possible interventions into the assumed planetary systems that also reshape localities?

The Laboratory maps across planetary space and becomes one way of articulating what forms of knowledge are necessary for us to 'scale up' to respond to the particular difficult, complex and multilayered problems of the Anthropocene. In critical contexts, the laboratory might be a useful term to understand how scales can shift and local and global are conditions of each other. Concerns, methods, practices can become transportable. Situations and knowledge about them can be refocalised in other situations. A hinge emerges. Laboratories are, as such, not merely enclosures but a term for this movement across situations as well as in many cases across disciplinary knowledge. The sort of experimental practice that the lab seemed to denote becomes spread out in those situations at frontiers, in localities and in other sites that connect to a network of circulation of ideas and practices.

WHEN AND UNTIL WHEN?

This chapter has mostly spoken of places and sites, and how particular situated practices are articulations of multiple ecologies: ecologies of terminology and institutions, natural histories and cultural sites, embodiment and technology. But they also embody time while mapping the emerging potential of what is to come, instead of mere descriptions of what is already in existence.⁵² These are ecologies of practices in landscapes which unfold in time, and hence also are practices which are by necessity involved in rescaling the temporal: they involve the artist or the practitioner interrogating not just what, but when and how slow, how fast, for how long?

Across institutional situations, poached terms, local uses articulating planetary routes, and many other affordances of contemporary environmental art practices, ecologies also articulate times. What time does one occupy? In contemporary art theory, the issue of time or contemporaneity has become central again, with the emergence of various material notions of time. As Cox and Lund put it, time has become more complex and problematised:

Temporality under these conditions becomes a more open process, less deterministic, or straightforwardly causal in activating the movement from cause to effect, more performative and open ended in the production of meanings.⁵³

The different slownesses and accelerations of art practices are worthy of attention as they also reach out to thinking the nonhuman through time. Dynamic natural formations have a different sort of a temporality that is at stake in many of the environmental art practices, and in order to reach out to the planetary scales, one also feels through time. The Anthropocene, one could argue, is a particular way of experiencing social time through geological durations that have become accelerated. Mineral durations are part of how historical sites of mining are brought into contemporary aesthetic-political discussions. Historical sites are opened up not merely through human narratives but through their nonhuman inhabitants of flora and fauna. One narrates through figures that occupy a different scale, and hence a different rate of perception. As Joanna Zylińska has articulated, scale is central to the ways in which our spatiotemporal dimensions, perceptions and observations can move the ladder up and down, shift across different registers of matter and allow us to shift back and forth between what is assumed to be our perception and other perceptions, or durations.⁵⁴

In which ways are temporal coordinates part of the operating system and the methodology of environmental arts? To acknowledge the alternative rhythms and temporalities of the environments of practice is also to acknowledge the intensive dynamics of the nonhuman world. Places, spaces and

situations do not solidify only into stable matter or things but are also active as environments that have a time of their own, a theme that forms a central part of how we should consider posthuman ecologies: multiple layers of time, dynamics and duration that extend much further than the anthropocentric bias would allow.

NOTES

1. Massumi 1992, 5–6.
2. Fuller 2008, 45.
3. The text draws on work created as part of the Frontiers in Retreat project (<http://www.frontiersinretreat.org/>) that ran in 2013–2018 and with a central node of the project in Finland, at the Helsinki International Arts Programme (HIAP). The project description emphasises the forms of collaborative and multiscalar operations that are also the focus of this article: ‘the five-year long collaborative enquiry into the intersections of art and ecology, is entering its final year. During its first four years, the Frontiers network of remote residencies has strived to generate a more complex understanding of the entanglements unfolding between locally articulated ecological concerns and larger, systemic, global processes’. (quoted from the project website).
4. Tsing, Swanson, Gan and Bubandt 2017, G3.
5. Easterling 2014.
6. Tsing et al. 2017, G3.
7. Braidotti 2006, 91.
8. Barad 2007, 89.
9. Stengers 2010, 2017.
10. Guattari 2000.
11. Zapf 2016.
12. Hörl 2017.
13. Fuller 2005.
14. See Deleuze 2004, 98. Deleuze refers to the method of dramatisation as the nonrepresentational form of spatio-temporal dynamism that can be seen as the generative aspect of Ideas as differentiation; the intense life of concepts.
15. Beloff, Berger and Haapoja 2013.
16. Easterling 2014.
17. Massey 2005.
18. Lippard 2014, 10.
19. Deleuze and Guattari 1994, 20.
20. See Massumi 1992, 5–6.
21. Närhinen 2014.
22. Solnit 2002, 22 on ebook version.
23. Grosz 2008, 17.
24. *Ibid.*, 11.
25. Mazzi and Tirelli, 2016.

26. Tsing et al., 2017, G5.
27. Bratton 2015.
28. Cubitt 2016.
29. See Parikka 2014.
30. Nikolić 2016.
31. See, for example, Starosielski 2015.
32. Weizman, 2017.
33. See the work of Robert Smithson, Lucy Lippard, and others.
34. Elfving 2018, 65.
35. cf. Stengers 2017.
36. I am here also thinking of Richard Skelton's *No Frontier* (2017) art work, http://www.frontiersinretreat.org/activities/richard_skelton_no_frontier.
37. Tavares 2018, 163.
38. Tavares 2018, 166.
39. Povinelli 2018.
40. Tsing et al. 2017, G4.
41. Nabb+Teeri 2015.
42. Salminen and Vadén 2015.
43. Nabb+Teeri 2015.
44. Haapoja and Gustafsson 2016.
45. van der Tuin 2018, 270.
46. See the project description online at <http://www.frontiersinretreat.org/activities/zooetics>.
47. Jutempus 2014–2018.
48. On temperature and media, see Starosielski 2016.
49. Gooday 2008, 789.
50. Quoted in Gooday 2008, 789.
51. Bureau d'Etudes 2018.
52. Stengers 2010.
53. Cox and Lund 2016, 31.
54. Zylinska 2014, 26.

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