

Ecocritical art in times of climate change:
Tracing ecological relationships between humans and
nonhumans through the hyperextension of objects

Thesis presented by

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The work presented in this thesis is the candidate's own.

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For my parents.

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Abstract

In recent years, climate change has expanded from a scientific to a broadly cultural concern, fundamentally questioning ideas of nature, society, and ecology. This thesis looks at the contribution of eco-art to the discussions, which seems to lag behind current discourses in ecocriticism. An analysis of selected "climate change exhibitions" shows that, despite its intentions, much of eco-art keeps recreating the modernist Nature-Society dualism which ecocriticism sees as the main obstacle for ecological thinking. Meanwhile, ecology models developed in ecocriticism are also far from resolved. A close look at Bruno Latour's Political Ecology and Timothy Morton's Ecological Thought reveals for example a theoretical alignment of ecology and democracy, which misjudges the behavioural capacities of ecological agents in practical ecology. The critique of eco-art and ecocriticism leads to questions regarding their contradictory artistic and political agency in environmental discourses. To address these uncertainties, an ecocritical art is proposed, investigating the identified problems in eco-art: aesthetic distancing, unknown subject-object relationships, fixation on local environments, and misreadings of practical ecology. Following Donella Meadows' "systems thinking" approach, the thesis suggests focusing on the investigation of concrete ecological agents and their systemic behaviour. Rather than theorising relationships between "closed" objects, it introduces the idea of the "hyperextended object". Hyperextension describes the investigative expansion of an object into an ecological agent, unfolding it contextually according to its social, material, and energetic relationships. The practical part of the thesis develops an artistic methodology, which traces and shapes hyperextended objects through long-term fieldwork, participant observation, site-specific performative actions, various documentary approaches, and their convergence in the exhibition. In two case studies exploring the (trans)regional infrastructures, socio-political ontologies, and ecological effects of two hydroelectricity projects in Iceland and Scotland, the process of hyperextension is shown to include the artist herself, as increasingly embedded ecological agent.

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1. Ecocriticism and eco-art in times of climate change

In the 21st century ecological crisis is nothing new, but it has taken on an unprecedented dimension and level of complexity. The latent and immediate problems challenging human civilisations in their current organisation are interdisciplinary and go beyond the specialist expertise of the natural sciences. Climate change, its exponential effects, and its related problems (food and water shortage, overpopulation, migration, loss of biodiversity, pollution, peak oil, peak minerals) are now the immediate concerns of governments and international institutions, including scientific, financial and military bodies and human rights organisations.¹ The Arctic, for example, over the past few years has become the focus of a continuous flow of conferences discussing geopolitical, humanitarian, security and technological challenges for this territory in a warming world, on top of reporting on biodiversity decrease and economic concerns. The complexity and scale of stakeholder interests here is immense. When entering a deeper discussion of fundamental systemic changes, which could solve ecological and social problems but at the same time must oppose the most powerful agents in current global and local economies, it becomes apparent that the evidence of climate change and the experience of its complex runaway effects are shaking the ideological foundation of a worldview shaped by capitalism: the illusory assumption that the Earth can sustain limitless growth, supply limitless resources, and cope with limitless amounts of waste. Upon this obviously impossible "truth" a globally dominating economic system and its socioeconomic, material, and cultural organisation have been built.

The first two chapters of this thesis introduce the ecological crisis circumscribed as "climate change" as a broadly cultural and systemic problem whose impact on the present and future organisation of human society is a most relevant topic to be discussed in contemporary culture, in ecocriticism, philosophy, and contemporary art. A selection of approaches will be outlined which attempt to conceptualise or visualise ecology, understood as a fully inclusive coexistence of humans, nonhumans, and their relationships. It will be shown that both ecocriticism and eco-art struggle with their own rhetorical instruments, definitions, and concepts influenced by a modernist worldview, and with the challenges of extreme interdisciplinarity and complexity when addressing the topic of ecology. The third chapter points out potential new lines of thinking and practicing ecology through various artistic research approaches. It investigates their potentials and limitations and argues for a deeper ecocritical rather than mainly aesthetical engagement of artists with the question of ecology.

¹ The wide range of institutions and organisations involved on the level of international cooperation is reflected for example in the list of partners of the United Nations' climate change summit in 2014. United Nations, "United Nations Partners on Climate Change", webpage entry, accessed on 25 Aug 2014, <http://www.un.org/climatechange/un-partners/>.

The position of this thesis is not that all contemporary art must today be engaged in the discussion of, or have an opinion about, climate change and ecological crisis. It does not promote the instrumentalisation of contemporary art in general as default problem-fixer and activist in this issue. However, it will maintain that, firstly, climate change is a contemporary reality with an effect upon human societies of such dimensions and actuality that it would be very difficult not to be affected by it politically, pragmatically, and artistically – as a contemporary artist, as a critical mind, and simply as a citizen. Secondly, if a certain branch of artistic practice, such as eco-art, explicitly sets out to engage in the current discussions of sustainability, climate change etc., then it needs to be critiqued not only from within its own discipline but also on the level and within the intellectual realm of the discourse it deliberately enters, namely in context with ecological sciences, geopolitics and ecophilosophy. The exchange between these fields of research has developed into a distinctly interdisciplinary and in this way new discourse. The cultural problem at hand, which is that we do not currently understand very well what ecology means as a concept and in practice for our present and future, is a problem far too difficult, too serious, and too actual to allow for a withdrawal into familiarly disciplinary thinking, melancholy lamentation, or merely entertaining utopianism.

"Eco-art" is understood in this discussion as an umbrella term for contemporary artistic practices that maintain an explicitly environmentalist motivation, formulating artistic positions from which to investigate human-nature relationships. These might include influences from land art and environmental art, public art, landscape photography, or relational art. Eco-art's self-declared main objective is, however, not sculpture, landscape, or spatial relations, but the investigation and representation of environmental concerns through artistic means, which can be more critically or more aesthetically interested.

"Ecocritical art" will be introduced in this chapter (and returned to in chapter 3) as a trajectory in contemporary art which brings together particularly analytical and conceptual strands of eco-art with practices exploring systems theory, complexity, geopolitics, post- and neo-colonialism, or institutional critique, without necessarily focusing on "Nature". Investigating systems of agents, they share an underlying core question: What does ecology mean in an age of climate change? How are things, forces, objects, people, and places relating to each other in a globalised world, what drives these relationships, and how will and can they change?

The objective of the first chapter is to contextualise eco-art with recent discussions of ecological crisis and climate change, to identify its imagined, actual, and potential ecocritical agency in correspondence with contemporary ecocritical thought, and to begin to differentiate more clearly between eco-art and ecocritical art.

1.1 Climate change as a cultural and systemic problem

*"The Earth is finite. Growth of anything physical, including the human population and its cars and houses and factories, cannot continue forever. But the limits to growth are not limits to the number of people, cars, houses, or factories, at least not directly. They are limits to throughput – to the continuous flows of energy and materials needed to keep people, cars, houses, and factories functioning. They are limits to the rate at which humanity can extract resources (crops, grass, wood, fish) and emit wastes (greenhouse gases, toxic substances) without exceeding the productive or absorptive capacities of the world."*²

In *Limits to Growth. The 30-Year Update* Donella Meadows and her co-authors concede that ecological crisis is at its core the result of a crisis of systemic thinking, and that therefore even the current mitigation strategies of green capitalism and environmentalism, as well as most technological advances, will most likely be unable to solve the deeper systemic problems of human organisation today. As long as they remain within the same logic of unlimited growth they are understood, in fact, as playing an intrinsic and reinforcing part in the multiplication of humanity's relational problems in the world.

*"A century of economic growth has left the world with enormous disparities between the rich and the poor. (...) When we, system dynamicists, see a pattern persist in many parts of a system over long periods, we assume that it has causes embedded in the feedback loop structure of the system. Running the same system harder or faster will not change the pattern as long as the structure is not revised. Growth as usual has widened the gap between the rich and the poor. Continuing growth as usual will never close that gap. Only changing the structure of the system – the chains of cause and effect – will do that."*³

Unchecked growth in a finite environment is problematic because it unavoidably leads a system to exceed the capacity of its "sources" and "sinks", and therefore to overshoot a tipping point and to collapse. As Meadows and her co-authors show, this can happen surprisingly quickly when growth occurs exponentially rather than linearly. It is also a structurally inbuilt problem:

"An economy will grow exponentially whenever the self-reproduction of capital is unconstrained by consumer demand, labor availability, raw materials, energy, investment funds, or any of the other factors that can limit the growth of a complex industrial system. Like population, capital has the inherent system structure (a

² Donella Meadows, Jorgen Randers, Dennis Meadows, *Limits to Growth. The 30-Year Update* (Vermont: Chelsea Green, 2004), 8.

³ *ibid.*, 4.

*positive feedback loop) to produce the behaviour of exponential growth. Economies don't always grow, of course, any more than populations do. But they are structured to grow, and when they do, they grow exponentially."*⁴

The dynamics of exponential and linear growth within a complex system of "stocks" and "flows" with heterogeneous growth rates, interrelated in numerous feedback loops, can be speculated upon by selective models using real or simulated data, but in "real life" their behaviour remains in large parts unpredictable, because many relationships characterised by individual system components are still little known. Climate change science has for example observed only very recently a number of striking examples for reinforcing feedback loops, such as permafrost melt and the resulting additional release of greenhouse gases into the atmosphere, or the accelerating effect of the darker colour of ice-free sea surfaces on the warming of the Arctic Ocean. According to Meadows, the speed with which tipping points are reached is frequently underestimated, even by experts, and the systemic causes and consequences of overshoot tend to be misjudged or ignored by decision makers.

*"Exponential growth – the process of doubling and redoubling and redoubling again – is surprising, because it produces such huge numbers so quickly. Exponentially growing quantities fool us because most of us think of growth as a linear process. A quantity grows linearly when its increase is a constant amount over a given period of time. (...) A quantity grows exponentially when its increase is proportional to what is already there. (...) When some factor experiences exponential growth, the amount of its increase rises from one period to the next; it depends on how much of the factor has already accumulated."*⁵

Given the ways in which our current economic systems fundamentally disregard the characteristics of exponential growth, feedback loops, and limits to sources and sinks, we could say that the delayed action regarding global ecological crisis today is at its core caused by a conceptual, culturally determined, and also strategically employed misunderstanding of dynamic systems behaviour. The structuralised lack of systemic thinking on the scale of ecology makes it still hard to recognise and discuss ecological crisis as an all-inclusive problem for human-nonhuman ecology, rather than as a specialist problem for "Nature" or "Environment". Meadows' critique of current economies, argued through her scientific analysis of systems behaviour, identifies a surprising limitation of our capacity to think ecologically. A closer look at the historical development of the idea of Nature reveals that this crisis of systemic thinking has been brought about and kept alive by modernist thought, which continues to be very influential in our everyday cultural thinking and acting. The modern idea of an endless, detached, utilisable Nature opposed to Society is historically and functionally closely related to the illusion of unlimited growth. This correlation of fantasies, and their ideological ties, are shown for example by Kerstin

⁴ Meadows et al., *Limits to Growth. The 30-Year Update*, 26.

⁵ *ibid.*, 19.

Stakemeier, looking at the history and co-evolution of industrialisation, romanticism, environmentalism, and art in the 19th century. Investigating the origins and development of "Nature" as persistent idea and as aesthetic object, she points out that art has been (or still is) not only a witness of modernism's unsustainable ideological entrapments, but also their active participant and co-creator. In her essay *Der Ausschluss der Natur (The exclusion of Nature)*⁶ Stakemeier describes the process of Nature's aestheticisation in a time marked by the mechanisation of labour, the objectification of the working subject, and the degradation of physical nature to mere material: Beginning with Hegel, formerly experientially explained relationships with nature, mainly defined through physical labour, were increasingly excluded from the experience of everyday life and were observed and theorised separately. In romanticism's counter-movement to industrialisation, these experiential relationships with the "natural world" were assigned to the realm of contemplation through art and philosophy, and artists were explicitly charged with the task of defining and narrating them in aesthetic form. This contributed to the evocation of a distant "fantasy nature". In modernism's project, the exclusion of Nature created the illusion that the physical parameters of the Earth were no longer constituting and determining the living conditions for humanity, but that they belonged to "another world" of recreation, entertainment, and dreams. With the advance of technology they were no longer a physically self-limiting control mechanism for the development of human economies. Consequently, these economies were set free to develop rapidly in the unbounded and unsustainable ways we are familiar with today.

1.2 Ecocriticism's re-investigation of ecology – towards a new worldview

The field of ecocriticism has provided a platform for expanding environmentalist discussions since the 1970s. With its origins in literature studies it has been nurturing and diversifying a continuous interdisciplinary discourse which considers human-nonhuman relationships from a cultural perspective, and includes the discussion and development of nature-philosophical and environmentalist theories. Ecocriticism continues to branch out and has recently become more involved in political theory, economics, art, and science. From James Lovelock's controversial Gaia hypothesis and Arne Naess' Deep Ecology to more recent post-growth and post-carbon theories, many ideas of Ecology have been under discussion in the past decades. In the context of this thesis and its search for new possibilities of understanding and representing human-nonhuman ecology through ecocritical art I will concentrate on four contemporary ecocritical positions which analyse, discuss, invent, and represent Ecology as system, and distinguish it explicitly from ideas of Nature or Environment: Kate Soper's theory of three natures, Donella Meadows' systems thinking approach, Bruno Latour's conceptualisation of Political Ecology, and Timothy Morton's discussion of ecological thinking and aesthetics.

⁶ Kerstin Stakemeier, "Der Ausschluss der Natur", In *Kunstforum International*, Nr 199 (Roßdorf: TZ, Oct–Dec 2009), 157–165.

1.2.1 Kate Soper's three natures

The historical development of the idea of "Nature" has been analysed extensively by philosopher Kate Soper. She identifies an internal split in the concept, resulting in three parallel aspects of nature in Western culture: "metaphysical nature", "realist nature", and "lay or surface nature".⁷ These are based on different disciplinary approaches and can subsequently lead to quite divergent ecological arguments. Soper reveals that the three aspects of nature are often used interchangeably without sufficient clarification of their conceptual distinction from each other, and emphasises the importance of paying close attention to the precise differentiation of the "three natures" in public discourses about ecology:

"An observance of a distinction of this kind between 'deep' and 'surface' levels of nature is (...) indispensable to the coherence of ecological argument. (...) it is only if we recognize a distinction of this kind that we can discriminate in the way required by green politics between what is and what is not changed when human beings modify nature."⁸

Soper's observations can be seen in a parallel to another conceptual threefold split, proposed not for nature but for ecology by Félix Guattari: In *The Three Ecologies* Guattari develops the similar but not congruent categories of "mental ecology", "social ecology", and "environmental ecology".⁹ Soper argues, like Guattari, for a simultaneous rather than separate consideration and use of the identified aspects, while calling for a more thorough recognition of their conceptual split.

Metaphysical Nature: *"Employed as a metaphysical concept, which it mainly is in the argument of philosophy, 'nature' is the concept through which humanity thinks its difference and specificity. It is the concept of the non-human (...). (...) the logic of 'nature' as that which is opposed to the 'human' or the 'cultural' is presupposed to any debates about the interpretations to be placed on the distinction and the content to be given to the ideas. One is evoking the metaphysical concept in the very posing of the question of humanity's relation to nature."¹⁰*

Looking towards ecological thinking, for Soper the divide between Nature and Society cannot be overcome by considering nature only as "metaphysical nature", because this aspect is defined by describing the relationship between two poles which remain "other", however closely they may be intertwined. As I will argue, the contemporary ecophilosophical models of Bruno Latour's Political Ecology and Timothy Morton's Ecological Thought consider the idea of Nature predominantly through this "metaphysical nature" aspect, but they also

⁷ Kate Soper, *What is Nature?: Culture, Politics and the Non-Human* (Wiley Blackwell, 1995), 156.

⁸ Soper, 157–158.

⁹ Félix Guattari, *The Three Ecologies* (London: Continuum, 2000), first English edition.

¹⁰ Soper, 155.

recognise, and battle with, the unsolvable contradiction within their missions to unthink Nature's separateness by thinking on behalf of Nature, which cannot think by itself.

Realist Nature: *"Employed as a realist concept, 'nature' refers to the structures, processes and causal powers that are constantly operative within the physical world, that provide the objects of study of the natural sciences, and condition the possible forms of human intervention in biology or interaction with the environment. It is the nature to whose laws we are always subject, even as we harness them to human purposes, and whose processes we can neither escape nor destroy."*¹¹

*"Nature is invoked in the realist sense not to discriminate between human and non-human being, but as the concept of that which is common to all animate and inanimate entities, and whose particular laws and processes are the precondition and constraint upon all technological activity, however ambitious (whether, for example it be genetic engineering, the creation of new substances and energy sources, attempted manipulations of climatic conditions or gargantuan schemes to readjust to the ecological effects of earlier manipulations)."*¹²

This would be the Nature that for example Donella Meadows and her co-authors emphasise in their research. *Limits to Growth* in particular focuses upon outlining the behaviour of those systemic components that are influenced but not (or not fully) controlled by human thinking or acting. The behaviour of these components is a given process, but it is not necessarily regular or predictable. A most interesting point in Meadows' work is that she introduces nonphysical components, perhaps even "metaphysical nature", as "realist nature": Within her definition of "stocks" and "flows" she includes levels of motivation, social equality, or knowledge – which constitute the processes of a dynamic ecology just like the "natural" materials and processes such as glacial meltwater and earthquakes. Thereby she recognises the overlapping of the three ideas of nature while placing emphasis upon understanding "realist nature" as the functional basis and reference point for the other two.¹³

Lay or Surface Nature: *"Employed as a 'lay' or 'surface' concept, as it is in much everyday, literary and theoretical discourse, 'nature' is used in reference to ordinarily observable features of the world: the 'natural' as opposed to the urban or industrial environment ('landscape', 'wilderness', 'countryside', 'rurality'), animals, domestic and wild, the physical body in space and raw materials. This is the nature of immediate experience and aesthetic appreciation; the nature we have destroyed and polluted and are asked to conserve and preserve."*¹⁴

Most of eco-art engages with "surface nature", whether in illustrative or critical terms. This aspect is overly rich in images and material to comment on, to represent, or to interpret, and

¹¹ Soper, 155–156.

¹² Soper, 157–158.

¹³ See also chapter 3.1.

¹⁴ Soper, 156.

entertains in a most seductive way. As Timothy Morton argues, the artistic engagement with "surface nature" is however co-determined and inspired by perceptive and experiential conditionings developed through individual and collective readings of "metaphysical nature", and at the same time participates, reversely, in articulating this metaphysical aspect itself.

Soper's observations could be taken as a strong recommendation for environmentalism, ecocriticism, and eco-art to be more critically aware of the disciplinary interests, rhetoric, and limitations adopted when speaking about and on behalf of Nature through one or more of these three aspects.¹⁵ For example, in contrast to eco-art's already close intertwining of "surface nature" and "metaphysical nature", the physical and energetic dependencies and deep processes of "realist nature" are not seldomly regarded as the expertise and responsibility of Science, as limiting the artistic imagination, or as being unrepresentable. This neglect of "realist nature" could stop eco-art from addressing the new systemic scale and characteristics of ecological crisis today, whose threat to human organisation lies not only in the symptoms visible on the surface (much of eco-art is commenting on and describing these symptoms), but more profoundly in the shifting of deep processes in "realist nature", caused at least in part by human activities: for example changes of climate, resultant chemical reactions in soil and water, altered food chains, and long-term geomorphological alterations such as rising sea levels and shrinking glaciers, or the exponential growth of consumption rates. As I will argue, eco-art would have more political and ecocritical traction if it would address more self-critically the implications of "metaphysical nature" for its observations of "surface nature", its own contribution to the construction of "metaphysical nature" through the generation of "surface" Nature images, and the partial eclipse of "realist nature" in its representations of ecology. This could bring eco-art to an interesting critique of the means and limits of aesthetics in the contemporary ecocritical context.

A similar unresolved tension between the three aspects of nature can be identified in contemporary ecology models developed by ecocriticism: As I will show on the examples of Bruno Latour's Political Ecology and Timothy Morton's Ecological Thought, they equally neglect the integration of realist nature, thereby proving to be incompatible with what I will call "practical ecology" – the (re)actions of causally related entities and processes, directly and indirectly experienceable on diverse spatial and temporal scales. The cross-disciplinary investigation and articulation of this "practical ecology" and its entities will later be discussed as a progressive methodological and conceptual approach of ecocritical art, striving to develop, employ, and represent systemic ecological thinking.

¹⁵ Soper, 155.

1.2.2 Bruno Latour's and Timothy Morton's critiques of Nature-Society dualism

One of ecocriticism's most significant recent contributions to contemporary thought is the radical critique of modernism's Nature-Society dualism, formulated for example by the philosopher and sociologist Bruno Latour and by the philosopher and English literature theorist Timothy Morton. Independently from each other both thinkers come to the conclusion that the romantic/modernist concept of Nature itself is an impasse, hindering rather than encouraging ecological thinking. They propose two models for an ecology "without Nature", which are both based on the idea of equally active human and nonhuman agents in close cohabitation, dismantling the traditional subject-object opposition of modernist thought. The discourses emerging from a critical analysis of Latour's *Politics of Nature* and Morton's *Ecology without Nature* and *The Ecological Thought* encourage a fundamental redefinition of the idea of ecology through an expanded awareness of systemic constellations of ecological agents and their behaviour.¹⁶ Discussing and problematising objects, subjects, collectives, and their agencies (drawing from actor-network theory, quantum theory, the theory of evolution, the critique of capitalism, and recently from object oriented philosophy), both authors emphasise the problem of subject-object relationships in a way that appears to be very relevant for central questions in contemporary art, regarding activism, aesthetics, and the interrogation of artistic agency. The most significant of these critical impulses and their relevance for ecocritical art will be discussed in chapter 2, along with the problems of Morton's and Latour's ecology models: Emphasising a reconstruction of "metaphysical nature" by employing and challenging selected images of "surface nature" they appear to neglect a full consideration of the "realist" aspects of nature, which would rigorously test their proposals against systemic processes occurring in practical ecology. Both ecology models rely for example on a theoretical democracy claim for humans and nonhumans, which, as I will argue, poses a number of considerable ethical and practical problems when seen through the lens of "realist nature".

Turning first, however, to a discussion of contemporary art's relationship with ecocriticism through aesthetics, the following subchapter will present Morton's analysis of ecorhetorics and their possibly problematic implications for eco-art's agency.

¹⁶ Bruno Latour, *Politics of Nature. How to bring the Sciences into Democracy* (Cambridge MA: Harvard University Press, 2004), first English edition.
Timothy Morton, *Ecology without Nature. Rethinking Environmental Aesthetics* (Cambridge MA: Harvard University Press, 2009), first Harvard Paperback edition.
Timothy Morton, *The Ecological Thought* (Cambridge MA: Harvard University Press, 2010).

1.3 Timothy Morton's analysis of ecorhetorics and "ecomimesis" and their distancing effect in eco-art

The arts are, in Morton's view, directly involved in ecocriticism because they explicitly or implicitly produce ideas and images of Nature: "(...) *it is in art that the fantasies we have about nature take shape – and dissolve*"¹⁷. As Stakemeier and Soper have described, the progression of capitalism, with art's contribution, supported the separating-out of an idealised aesthetic Nature beyond the physical, material world.¹⁸ This "fantasy nature", Morton claims in a parallel to Latour, does not exist (and never has existed) outside of our imagination. Reimagining and reinventing it for the sake of a well-meant environmentalist message in his view only reinforces the conflict between a Nature concept based on the modernist dualism of active subjects and passive objects, and an advanced concept of Ecology as a conglomeration of equally interactive entities: living and nonliving beings, habitats, and processes.

The old subject-object relationship between humans and non-human world material, marked by the alienation of Society from Nature, is problematised by most directions within ecocriticism because it is regarded as exploitative, destructive, and thereby as a major cause of environmental crisis. However, Morton argues that while environmentalist rhetoric – in ecocriticism and eco-art, as well as in popular science, green politics and the "greenwashing" campaigns of corporations – advocates a "being one with Nature", it does so by using rhetorical tools that derive from aesthetics and rely by definition on observational distance. He claims that it might therefore be altogether impossible to communicate a politically activating position of "being-one-ness" through the means of aesthetics. Eco-art's environmental images and texts are here under suspicion of encouraging a passive "romantic consumerism"¹⁹ whose comfort zone also includes familiar and sublime images of environmental crisis. Their intended "call to arms", aiming to alert and encourage audiences to change their harmful habits and beliefs, indeed often remains ineffective while the viewers get lost in the appreciation and sublime shudder of the aesthetic experience. As Kerstin Stakemeier puts it, environmental aesthetics can be stuck in a state of "idyllic inconsequence" ("folgenrelose Idylle").²⁰ This frustrating paradox may be an inbuilt mechanism of environmental aesthetics, according to Timothy Morton's detailed analysis in *Ecology without Nature*. He asserts that art is directly instrumental in creating and supplying the rhetorics with which a "nature beyond", rather than ecological thinking, continues to be articulated. According to Morton, realising and representing ecological thinking as a way of being in the world would first require the abandonment of the distancing concept of Nature

¹⁷ Morton, *Ecology without Nature*, 3.

¹⁸ Stakemeier, 157–165.

Soper, 15–36.

¹⁹ Morton, *Ecology without Nature*, 109–123.

²⁰ Stakemeier, 158.

itself,²¹ through a rigorous process of ecocritique and the deconstruction of the romantic and modern conceptualisations of Nature in context of their contemporary aesthetic and social histories.

Even without Nature, Morton identifies a problem with environmental aesthetics and rhetorics in that they attempt to dissolve the distance between the perceiver (subject) and the perceived (object) by introducing a shared medium for both (the environment). However, as aesthetic perception fundamentally depends on the production of distance, by dissolving one distance (to the object) the new model simply creates another distance (to the environment as "other"). The environment becomes the new object from which the subject must distance itself in order to imagine and perceive it. The rhetorics of eco-art's "nature writing" are thus based on yet another illusory image, merely relocating the idea of a "nature beyond" into the equally ungraspable notion of an ambient environment. Based on this analysis Morton makes the (challengeable) claim that art might by default be incapable of transporting the idea of a non-distanced nature or environment, and thus be altogether incapable of representing ecology. Curiously, while Morton elaborately analyses and criticises art's aestheticising engagement with "surface nature" as a romantic confirmation of Nature as distant "other", he repeats this projection process himself by developing a strongly romantic notion of "dark ecology"²² in his following book *The Ecological Thought*, as I will discuss in chapter 2.

"Ecomimesis" in nature writing and eco-art

In *Ecology without Nature* Morton's investigation of ecorhetorics and "ecomimesis" reveals important observations regarding the aesthetic tools available to artistic practices for creating the notion of environment. Drawing mainly from examples of Romantic poetry and literature, but also visual art, popular music, and film, Morton sets out to demonstrate how what he regards as the main objective of eco-art – the reconciliation of human society and nature through the evocation of a shared "environment" – is defeated by its own rhetoric device, which he calls "ecomimesis". Ecomimesis tries to conjure up an ambience that "goes beyond art",²³ and that is supposed to be not merely a construction of an image but also a non-aesthetic response to something "really" out there. Morton argues that this is impossible and a form of ideology in itself, because no art (and here he is including ecocritical writing) can escape its own rhetoric form.

"Ecomimesis is a specific rhetoric that generates a fantasy of nature as a surrounding atmosphere, palpable but shapeless. The ambient poetics that establishes this experience interferes with attempts to set up a unified, transcendent nature that could become a symptomatic fantasy thing. (...) Ambience compromises

²¹ This lines up with Bruno Latour's argumentation in *Politics of Nature*, that an effective political ecology in a "democracy of things" can only be developed by departing from the concept of Nature and by escaping from the dichotomy of nature and society, outside and inside, object and subject. See chapter 2.

²² Morton, *The Ecological Thought*, 59–97.

²³ Morton, *Ecology without Nature*, 31.

*ecomimesis because the very processes that try to convey the illusion of immediacy and naturalness keep dispelling it from within.*²⁴

According to Morton, certain characteristic elements of ecomimesis can be identified, which can be found in nature poetry as well as in ecocritical writing and, as I will show later, in visual eco-art. Ecomimesis provides: authentication, evoking a situatedness of the author as witness; a shared time of reading and narrating, including the viewer or reader; "paratactic lists" describing the imagery of phenomena and surroundings; quietness (though not silence) that "*evokes the distance between the hearer and the sound source*"; an atmosphere or "ambience", created by the combination of the above elements.²⁵ Morton identifies a whole set of rhetorical tools used to achieve such a poetics of ambience. For the context of visual eco-art the most significant of these are "Rendering"; "the Aeolian"; and "Tone".

Rendering is described by Morton as the main process occurring in ambient poetics. Assimilating, editing and synthesising diverse single elements into a new whole, it constructs "*a more or less consistent sense of atmosphere or world*".²⁶ The notion of landscape for example is the product of a strong rendering. Ecomimesis renders by overwriting or smoothing-out particularities, creating an independent "reality". "*Rather than a weak representation, or imitation, this is a strong magical form, a compelling illusion rather than a simple copy.*"²⁷ There is no "real thing" out there corresponding to the environment that has been conjured up by ambient poetics, even though the single elements contained in the description might still be clearly recognisable. It is even of great importance for ecomimesis that they are recognisable and thus authenticating the rendering, as the ecomimetic objective is to give a convincing impression of "environment". "*The idea is that we obtain an immediate world, a directly perceived reality beyond our understanding.*"²⁸ For the same authentication reason "*the use of a living, breathing narrator (a kind of affective presence)*" is important "*to enhance a story's capacity to include the reader in the told story.*"²⁹ Rendering provides an immersive immediacy, made easily accessible for the reader or viewer. Even if its artificial construction is revealed, this is part of the aesthetic pleasure derived from the experience of ambient poetics. In visual eco-art, as I will show, ambient poetics can be identified for example in interactive installations and "environments" that create spaces for the viewer to inhabit, offering immersive sensual experiences (e.g. Olafur Elíasson, Tomás Saraceno). Documentary and pseudo-documentary accounts of the artist's own immersive experiences can often also be regarded as ambient poetic narratives, continuing in the tradition of Romantic "nature writing" (e.g. David Buckland and Chris Wainwright for Cape Farewell). From an ecocritical and activist perspective the problem with "rendering" is that it discourages a critical observation of the way in which the work's aesthetic representation

²⁴ Morton, *Ecology without Nature*, 77.

²⁵ *ibid.*, 32.

²⁶ *ibid.*, 35.

²⁷ *ibid.*, 54.

²⁸ *ibid.*, 35.

²⁹ *ibid.*, 35.

corresponds to the ecocritical context in which the work itself also participates: "*Rendering encourages us to switch off our aesthetic vigilance. But even if we know very well that it is a special effect, we enjoy the deception.*"³⁰

The Aeolian phenomenon comes "from nowhere" – it has no obvious source and thus appears disembodied, but is nevertheless bound to the space in which it is perceived. In ambient poetics, Morton claims, it creates the impression of a continuous process unfolding without the involvement of an identifiable author, or origin. The obscurity of the Aeolian's source, the inability to precisely locate it, gives rise to its synesthetic quality and to a holistic experience of intense aesthetic absorption. It can also have a strongly distracting effect on the perceiver. As Morton explains, "*Because we cannot directly perceive the source, those organs of our perception not engaged by the disembodied event become occupied with different phenomena.*"³¹ The phenomenon of climate change for example in my view has a strong Aeolian component – it is everywhere, but still quite easy to ignore. Morton suggests that both the pleasant entrancement and the disconcerting anxiety provoked by the Aeolian are based on a hesitation between its recognition as a "supernatural uncanny" and a "supernatural marvellous".³² He describes the supernatural uncanny as "*an unusual occurrence that is ultimately explicable*",³³ meaning that its source is only obscured and can be perceived following an expansion of the senses. The supernatural marvellous on the other hand is "*an event that must be believed on its own terms*",³⁴ as it has no source at all. Experience-able but unaffordable, "*the phenomenon does not reside in our world... (but) ...bisects it*"³⁵ into a here-and-now and a beyond. According to Morton, although ecomimesis usually claims that the source of a phenomenon can be discovered if we only make a better effort to look and listen, in the atmosphere it creates there remains an underlying sense of the inexplicable supernatural marvellous. On this "void" of unknowability, in his view, relies the "divine intensity" of ecomimesis, and our acceptance of its illusion.³⁶

Tone refers to a material and immaterial tension or intensity, describing "*the way in which matter is vibrating*".³⁷ According to Morton, it uses both the sensual body and its environment as descriptive material, expressing their shared involvement in the production and experience of an atmosphere. The strongly ambient effect of Tone is synesthetically guiding the subject's attention onto a "here-and-now of bodily sensation" in space.³⁸ Morton shows that Tone can be produced in a number of ways, for example by suspension, absence, positive and negative quantity, and pause. A suspension of narrative (in a textual or visual plot, or in a musical progression) can be achieved for instance by extensive descriptions, the fragmentation of visual presentation, or the withholding of information.

³⁰ Morton, *Ecology without Nature*, 35.

³¹ *ibid.*, 42.

³² Morton borrows these terms from Tzvetan Todorov. Referenced in Morton, *Ecology without Nature*, 43.

³³ Morton, *Ecology without Nature*, 43.

³⁴ *ibid.*, 43.

³⁵ *ibid.*, 43.

³⁶ *ibid.*, 43.

³⁷ *ibid.*, 43.

³⁸ *ibid.*, 46.

Tone slows down the event of perception, holding it "in limbo", often without ever offering a resolution.³⁹ Preoccupied by the experience of Tone, the reader or observer is held in an endlessly expectant, attentive but self-centered stasis and continues to linger inside this encapsulating atmosphere. In my interpretation one could say that the effect of Tone is an enduring feeling of romantic "Sehnsucht" (German for "yearning"; literally "addiction to longing") towards a beyond that is seductively suggested but remains out of reach. Climate change for example, as topic and phenomenon, could be observed as constantly presenting us with positive (staggering statistics) and negative (loss of the world as we know it) quantities, as well as with the interminable suspension of not knowing. It thereby induces a "toned", paralysed listening state, which is also an "aesthetic state" in Kierkegaard's sense: According to Kierkegaard, the aesthetic state is an experience of immediacy, in which the human being withdraws from ethical-religious decisionmaking and resulting responsibilities.⁴⁰

With his investigation of "ecomimesis" and its tools Morton demonstrates that ambient poetics in environmental art and literature has a tendency to wrap the viewer, listener, or reader in a world that is designed to be perceived so holistically and acutely that there is little room left for relating to this environment by actively contributing to its construction or by questioning it. This dominance of a reading mode is identified by Morton as an effect of "ecorhapsody" and "ecodidacticism". Rhapsody derives from the Platonic notion of mimesis as "*divinely inspired form of madness*";⁴¹ in which poetic power, inspiration and knowledge are transferred to the creative subject from beyond – they are not drawn from within the subject. In ambient poetics, "*poetic power derives from the environment*".⁴² As shown in Morton's example of the surrealists' automatic writing practices, the artist and his/her work become a (reading/writing) medium, transmitting between the immediately experienced environment with its inspirational powers, which dictate the writing, and the viewer/listener, who merely reads. The ideological problem with ecorhapsody's emphasis on an automatic state of perceiving and transmitting, so Morton, is the hierarchy it seems to imply regarding an already written "book of nature".⁴³ This hierarchy seems to say that an "ecologically correct" existence relies on the correct reading of what is already "out there", and that art is employed to help with the deciphering.⁴⁴ The situation is however problematically introverted, says Morton, because the environment to be read is already a construction, provided not by a "divine power" but through the ecorhapsody of an artist/poet, who has thus already rendered an image of the supposedly "out there", otherwise inaccessible, beyond. Morton thus identifies a strong "ecodidacticism" within ecorhapsodic accounts of environmental experience, occurring on two levels: On the one hand, the reader (or viewer) is explicitly made aware of Nature, which is supposed to have a concrete learning effect, heightening consciousness, and transforming a general, abstract awareness into a specifically and

³⁹ Morton, *Ecology without Nature*, 44.

⁴⁰ "Ästhetik", In Anton Hügli and Poul Lübcke (editors), *Philosophielexikon* (Reinbek: Rowohlt, 2001), 64.

⁴¹ Morton, *Ecology without Nature*, 55.

⁴² *ibid.*, 55.

⁴³ *ibid.*, 54.

⁴⁴ This is a common curatorial subtext in "climate change exhibitions". See chapter 1.4.

experientially informed one. This can include advice on how to look at nature, in philosophical terms, by means of technology or other media, or in the form of methodical documentation. On the other hand ecodidacticism is expressed in the explicit or underlying order to become active and change one's mind and behaviour, or simply *"to stop reading/looking and 'go out' into nature."*⁴⁵ For Morton, this command in the form of an aesthetic expression that is in itself "merely" to be read or looked at is paradoxical and unconvincing, and it therefore remains entertaining rather than activating.

From the artist, through the mental image or text, the possibility of ecocritical agency is passed to the viewer. Arguably this is all that eco-art can do without turning to activism, but the transmission of agency seems to be failing more often than not, and not due to a lack of artistic excellence but, as Morton seems to say, by default. The problem appears to be intrinsic to the artistically controlled and therefore only pseudo-rhapsodic rendering of a Nature fantasy and its didactically paradoxical call for direct engagement. Morton suggests that the internal conflict between form (ecomimesis) and content (ecodidacticism) in the end creates a "pristine zone" of practical indifference:

*"Even when the narrator is apparently screaming in our face (...), the message hovers off to one side. It appears to inhabit an entirely different dimension (...)."*⁴⁶

The effect of ecomimesis in eco-art thus appears to distract the agency of the viewer, and to weaken his/her motivation to make the transition from an attitude that experiences a rendered image or environment with "idyllic inconsequence" to a position that responds to the "non-aestheticised" acknowledgement of ecology with practical and personal consequences. In short, rather than developing an ability in the viewer to perceive and realise his/her own ecocritical and ecological agency, ecomimesis in eco-art seems to cause image-fixation and loss of agency, resulting in "romantic consumerism".⁴⁷ The question then indeed arises whether art is at all capable of articulating convincing aesthetic responses to contemporary questions regarding ecology that include, concern, and activate the viewer in the responsible ways that seem so necessary today. Can art provide an experience of ecological relationship, interconnection, and responsibility if this requires overcoming aesthetic distance? Morton believes that the modernist subject-object division (and by extension the Nature-Society division) may well be an inescapable and intrinsic concept for art, as the mediation of this very division, simultaneously bridged and recreated by aesthetics, constitutes artistic agency in itself. If we follow his argumentation, we can speculate that Morton's and Latour's intention to take the poles of subject and object, inside and outside, Nature and Society away, radically strips art of two essential navigation points onto whose relationship a large proportion of artistic questions and methodologies so far have been concentrating.

⁴⁵ Morton, *Ecology without Nature*, 62.

⁴⁶ *ibid.*, 63.

⁴⁷ "Romanticism is consumerism – consumerism is Romanticism. (...) a particular style of consuming that arose from the growth of consumer society through the long eighteenth century." Morton, *Ecology without Nature*, 110.

Taking Morton's well-argued scepticism regarding eco-art's ecocritical capacities as a challenge rather than as a predicament, the following subchapter will look at recent eco-art and "climate art" approaches with this problem of art-inherent aesthetic distancing mechanisms in mind. The analysis will explore whether the observations made by Soper, Stakemeier, and Morton regarding the conflicted production of Nature images can be recognised symptomatically in the positions presented by exemplary eco-art practices. It will look for indications of a splitting of Nature images into disciplinary aspects, for a neglect of "realist nature", for Nature-Society dualism, romantic consumerism, systemic thinking or the selective framing thereof, and for the rhetorical devices of ecomimesis. The thesis will then be able to ask more precisely whether eco-art can indeed be condemned as essentially counterproductive to ecological thinking, or whether its ecocritical capacity is still being reformed through the discursive transformation of current images of Nature, of Society, and of Ecology.

1.4 Is eco-art counterproductive to ecological thinking? A critical look at responses to climate change and environmental crisis in recent eco-art

Eco-art exhibitions highlighting environmental concerns have been shown in a multitude of constellations since the late 1960s when environmentalism as a topic began to enter politics as well as contemporary art. In 2009, the exhibition *Radical Nature* at the Barbican Centre in London provided a selective but still comprehensive overview spanning forty years of artistic engagement with environmentalism.⁴⁸ Eco-art, as mentioned before, can be traced back to eighteenth-century Romanticism and its nature-focused counter-movement to the beginning industrialisation and the environmental destructions that came with it. More recent artistic positions exploring questions of land use, environmental degradation, and ecopolitical power relations, for example in land art and public art since the late 1960s, are perhaps considered less "romantic" and more "modern" or even "postmodern" for their correlations with conceptual art, minimalism, Fluxus, and multimedia art. Their early period was marked by deep political, economic, and social conflicts with an obvious environmental dimension (Vietnam War, oil crisis, acid rain, anti-nuclear movement, human rights movements, beginnings of Green politics), as well as by rapid technological development. The engagement with the "natural environment" and its politics is therefore clearly not a new development in visual art. One of the biggest recognition problems for contemporary eco-art might be its dismissal as latecomer, as the mere repetition of 1970s themes. This has a point in regard to the ideas and terminologies used in many presentations of eco-art today, particularly the ideas of Nature and Environment, which might appear partly outdated. At the same time, the subject matter of ecological crisis regrettably has not changed in the last

⁴⁸ *Radical Nature: Art and Architecture for a Changing Planet 1969–2009*, exhibition curated by Francesco Manacorda, Barbican Art Gallery, London, Jun–Oct 2009.

decades, except in scale and in the breadth of our knowledge about it, as Meadows and her colleagues clearly demonstrate in *Limits to Growth. The 30-Year Update*. It could therefore be argued that any perceived missing contemporaneity in eco-art, its lack of "newness" in discussing ecology, is not firstly a problem of subject matter, but of internal critical discourse about eco-art's positions, methodologies, terminologies, and forms of representation when addressing ecological crisis. I will discuss this claim further below in reference to selected examples of recent eco-art strategies.

Over the past decade climate change has developed from a specialised research subject for climatologists and geoscientists into a mainstream political topic. In parallel with the increasing recognition, contemporary art, and specifically eco-art, has been asked to contribute creative responses to "the issue". This has brought forth a string of group exhibitions such as *EARTH: Art of a Changing World* in London; *Rethink: Contemporary Art and Climate Change* in Copenhagen; *Weather Report: Art and Climate Change* in Boulder Colorado; *Unfold* in Vienna (and travelling); *C Words: Carbon, Climate, Capital, Culture* in Bristol; *Still Life. Art, Ecology and the Politics of Change* in Sharjah, and many more, exploring and often claiming contemporary art's capability to address, discuss, represent, and influence or even fix environmental crisis on the scale of climate change.⁴⁹ Many of these "climate change exhibitions" have intended to raise public awareness of the cultural dimension of environmental crisis on a broad and accessible, sensual and entertaining level.⁵⁰ Curators, institutions, governments, sponsors, journalists and audiences have placed high expectations upon them. In curatorial statements, opening speeches and reviews they anticipated the production of solutions, the setting of examples, or the imagination of a better future. Despite the timeliness and the considerable visual spectacle of these exhibitions, their resonance in art theoretical discourse on the other hand has remained strangely weak at the time. Only gradually a deeper discussion regarding eco-art's conceptual contribution to the discourse of ecology and to the critique of Nature images has emerged, starting to foreground questions of political ecology, rather than of nature conservation. It has begun to operate increasingly in dialogue with contemporary critiques of neoliberalism and neocolonialism, and with certain strands of object oriented philosophy.⁵¹ These exchanges

⁴⁹ *EARTH: Art of a Changing World*, exhibition co-curated by Kathleen Soriano, David Buckland, and Edith Devaney, GSK Contemporary, Royal Academy of Arts, London, Dec 2009–Jan 2010.

Rethink: Contemporary Art and Climate Change, exhibition developed in collaboration between The Alexandra Institute, Statens Museum for Kunst, Nikolaj Copenhagen Contemporary Art Centre, and Den Frie Centre of Contemporary Art, Copenhagen, Oct 2009–Apr 2010.

Weather Report: Art and Climate Change, exhibition curated by Lucy R. Lippard in collaboration with EcoArts, Boulder Museum of Contemporary Art, Boulder, Colorado, Sep–Dec 2007.

Unfold, exhibition curated by David Buckland and Cape Farewell, University of Applied Arts Vienna, Vienna, May–Jun 2010, travelling internationally since then.

C Words: Carbon, Climate, Capital, Culture, exhibition and event programme curated by Platform London, Arnolfini, Bristol, Oct–Nov 2009.

Still Life. Art, Ecology, and the Politics of Change, 8th Sharjah International Biennial, co-curated by Eva Scharrer, Jonathan Watkins, and Mohammed Kazem, Emirate of Sharjah, Apr–Jun 2007.

⁵⁰ The terms "climate change exhibition" and "climate-change art" have been used widely by art critics and journalists. See for example: Madeleine Bunting, "The rise of climate-change art", *The Guardian*, 2 Dec 2009, accessed online on 26 Aug 2014, <http://www.guardian.co.uk/artanddesign/2009/dec/02/climate-change-art-earth-rethink>.

⁵¹ See for example:

T.J. Demos, "Art after Nature. The Post-Natural Condition", In *Artforum International*, Apr 2012, 191–198.

bring much needed conceptual challenges to contemporary eco-art and its presentation, where a reaffirmation of modernist Nature ideas can still often be detected, while explorations of the consequences of human-nonhuman ecology models or self-critical reflections of art's own conceptual insecurities regarding systemic thinking are less common. Morton's analysis of ecomimesis might provide one possible explanation why "environmental" eco-art has failed to engage audiences as profoundly and critically as expected or intended.

Another observation to make, in my view, is that site-specific public art and artistic fieldwork with an environmentalist agenda, as for example theorised and presented by Lucy Lippard,⁵² despite their important contributions to eco-art, methodologically and conceptually do not always distinguish precisely enough between the notions of "ecology" and "environment".⁵³ In the context of climate change, which is becoming a metaphor for the globalisation and "culturalisation" of a crisis that affects much more than "the environment", it seems to me that eco-art has to sharpen its awareness of this important distinction: While environment can be imagined and evoked spatially-atmospherically, as a "background", an encompassing but ontologically relatively unspecified container, ecology can be understood structurally and politically, as a precise system of functional cause-effect relationships, decisions, behaviours, and "infrastructures" which co-create and transform the physiognomy of environments.

To demonstrate this need for greater conceptual precision, I will look at three recent eco-art examples addressing the unprecedented challenge of climate change – presented as an individual exhibition, as ongoing practice of an eco-art organisation, and as a group exhibition. My critique refers to their explicitly ecocritical intentions and not principally to formal aesthetic considerations, which of course might still appreciate a work as aesthetically successful. Furthermore it is directed not only towards artworks but specifically also towards their visual and verbal presentation and curatorial framing as "climate change art" in the exhibition and publication context. The critique of eco-art offered here does not question the importance or validity of contemporary artists' and curators' varied engagement with climate change and ecological crisis – on the contrary. It fully acknowledges that the rethinking of ecology itself, the basis of ecocritical thinking for the future, is as new today for art as it is for

Mark Cheetham, Gary Shapiro, Amanda Boetzkes, Nikos Papastergiadis, Alan C. Braddock, and Charles Palermo, "Ecological Art: What do we do now?", *Nonsite*, 21 Mar 2013, accessed online on 26 Aug 2014, <http://nonsite.org/feature/ecological-art-what-do-we-do-now>.

The Anthropocene Project 2013-14, research project and exhibition programme, collaboration between Haus der Kulturen der Welt, Berlin, Max-Planck-Gesellschaft, Deutsches Museum, Rachel Carson Center for Environment and Society, Munich, and Institute for Advanced Sustainability Studies, Potsdam.

⁵² Lucy R Lippard, *The Lure of the Local. Senses of Place in a Multicentered Society* (New York: The New Press, 1997).

⁵³ While "environment" is most commonly defined as the "external conditions or surroundings" of a living being, "ecology" is described as "the set of relationships of a particular organism with its environment". The latter definition is, in my view, very localised and does not sufficiently acknowledge the interrelations of multiple ecologies of various types and scales, which can be observed in global ecological processes today.

"Ecology", In *Collins English Dictionary - Complete & Unabridged* (William Collins Sons, 2012), online edition, accessed on 26 Aug 2014, <http://www.collinsdictionary.com/dictionary/english/ecology?showCookiePolicy=true>.

"Environment", In *Collins English Dictionary - Complete & Unabridged* (William Collins Sons, 2012), online edition, accessed on 26 Aug 2014, <http://www.collinsdictionary.com/dictionary/english/environment?showCookiePolicy=true>.

science, politics, ecocriticism, and philosophy. My analysis attempts to discover where the current blind spots and conceptual contradictions of eco-art and its presentation, and perhaps also its fears, might lie. It looks critically at these works and formats, in order to spot distraction and romanticism, and in order to work towards a much-needed break-through enabling a more dangerously ecocritical artistic position and agency, not based on a fabulation of Nature but on the creative confrontation with scientific, political, and social realities on small and large scales. This is done with highest respect for the artists and curators mentioned, who are in the process of working through the current insecurities of eco-art and making them visible.

1.4.1 Ecology or Environment? Tomás Saraceno's *Cloud Cities*

Tomás Saraceno develops large-scale installations inspired by the physiognomy of soap bubbles and spiders' webs, evoking the dream of free-floating habitable spaces, and creating experimental and experiential models for the connectivity of social networks and ecologies. Following his participation in the exhibition *Rethink: Contemporary Art and Climate Change*,⁵⁴ which coincided with the United Nations Climate Conference in Copenhagen, Saraceno's work has been interpreted and presented as a visionary artistic-architectural response to current environmental challenges, particularly to the question of sustainable cohabitation, and has been very visible in the "climate change art" platforms of the past decade.

*"(...) Tomas Saraceno's floating sculptures and interactive installations propose new, sustainable ways of inhabiting the environment. (...) Building on the progressive proposals and theories put forth by R. Buckminster Fuller, Gyula Kosice, Yona Friedman and other visionary architects before him, Saraceno develops engaging proposals and models that invite viewers to conceptualize innovative ways of living and interacting with one another, and with their surroundings at large."*⁵⁵

The exhibition *Cloud Cities* in Berlin presented a collection of spheres of various sizes, constructed of transparent plastic sheets and wire ropes, and suspended and fastened within the very large exhibition space.⁵⁶ Some of the spheres could be entered, on ground level through a door, or above ground via an attached staircase. Others were inhabited by plants, more precisely by the epiphyte *Tillandsia* that survives without soil and absorbs water and nutrients through its leaves. Irrigation systems were provided for these plant spheres, as well

⁵⁴ Tomás Saraceno, *Biospheres*, shown in *Rethink. Contemporary Art and Climate Change*, Statens Museum for Kunst, Copenhagen, 2009.

⁵⁵ Tanya Bonakdar Gallery, "Tomás Saraceno. Biography", accessed online on 08 Mar 2014, <http://www.tanyabonakdargallery.com/artists/toms-saraceno/series>.

⁵⁶ Tomás Saraceno, *Cloud Cities*, exhibition at Hamburger Bahnhof Museum für Gegenwart, Berlin, 2011.

as ventilation systems for the larger walk-in spheres. Here, as well as in his exhibition *Biospheres*,⁵⁷ directly immersive environments were constructed for the viewers.



Figure 1: Tomás Saraceno, *Cloud Cities*, 2011, exhibition view, Hamburger Bahnhof Museum für Gegenwart, Berlin. Photo: Julia Martin.

Katharina Schlüter describes Saraceno's work in the catalogue as "biomimetic", and contextualises it with recent eco-art, reading him alongside Olafur Eliasson, Mark Dion, Tue Greenfort, and Simon Starling, who *"have produced nature-base (sic) works in which artistic illusions are created by natural means in order to call attention to the ecological problems of our globalized world. The natural reference enables these contemporary positions to involve the viewer in a bodily, sensual way while also articulating artistic criticism."*⁵⁸ Specifically regarding Saraceno she writes: *"The artist's works, which incorporate tendencies in science and architecture and, as works of art, explicitly implement natural principles in order to address immediate problems in our globalized world such as overpopulation, environmental pollution, and diminishing resources, are highly contemporary visions that embody current and potential discourses on the relationship between nature and society."*⁵⁹

From an ecocritical perspective, and read with attention to the complicated Nature-Society discourse presented in the previous subchapters, these paragraphs seem to contain conceptual insecurities regarding the perspective aspects of nature identified by Kate Soper. It is for example not very clear what "natural means" might be, and how eco-art's use of "natural references" and "natural principles" might involve the viewer quasi by default in a critical commentary on the world's most pressing problems. The text too quickly ascribes an environmentalist criticality to *Cloud Cities* that might not be intended or delivered by the artist, at least not in the unambivalent way which Schlüter outlines. If Saraceno's *Cloud*

⁵⁷ Tomás Saraceno, *Biospheres*, shown in *Rethink. Contemporary Art and Climate Change*, Statens Museum for Kunst, Copenhagen, 2009.

⁵⁸ Katharina Schlüter, "On the works of Tomás Saraceno", In Ackermann, Marion, and Daniel Birnbaum, Udo Kittelmann, and Hans Ulrich Obrist (editors), *Tomás Saraceno: Cloud Cities* (Berlin: Distanz Verlag, 2011), 245.

⁵⁹ *ibid.*, 246.

Cities were indeed offered as a "realizable utopia"⁶⁰ expecting to confront and solve the massively complex challenges mentioned in the essay, the work would have to be described as either extremely naive or devastatingly cynical: Overpopulation will not be sustainably mitigated by exiling people into flying cities, layering them on top of each other due to a lack of inhabitable ground space. Rather than trying to construct a straightforward environmentalist intention for *Cloud Cities*, it could be more interesting and ecocritically challenging to discuss the work as a satirical comment on technological societies' current escapism into geo-engineering and "green capitalism" fantasies in the face of unfolding ecological emergency – doing all they can to avoid admitting that our exuberant lifestyles will very rapidly have to change dramatically and concretely. In this case there would be an interesting ecopolitical traction in Saraceno's works, a subversive critique of an over-confident but clueless, entertainment-infected and technology-worshipping society that insists upon looking straight past its enormous, very stubborn, and very unglamorous problems. However, the artist himself speaks about his work in a way that doesn't seem to indicate the intention for it to be subversive or satirical: Saraceno's interview contribution in the *Cloud Cities* catalogue consists of meandering associations and thoughts circumscribing the imaginative context of his "flying cities" and emphasising their detached dreaminess in a way reminiscent of what Morton would call "ecorhapsody".⁶¹ Responding to the reception of his works as "realisable utopias", Saraceno carefully delineates his approach as more utopian than realisable:

*"In my work as a visual artist I do not set myself the objective of coming up with definitive answers. I don't like to use words like "solutions for habitation," nor am I under the illusion of being able to make concrete "improvements" in the life of humanity as a whole on the planet. Rather my works are trials, experiments for presumed and possible futures. (...) This is the objective of my artistic practice: awakening people to the interdependence of the different elements that make up the system in which we live – the interrelations between objects, natural phenomena and living creatures."*⁶²

Here Saraceno withdraws a little from his earlier enthusiastic gesture towards the powers of free imagination, but as a result also bypasses the possibility to push his work further towards a critical and performative satire of escapist fantasies as mentioned above. Today, Saraceno's cheerful and entertaining artistic-architectural visions are enjoyable as ideas and physical experiences but what is posited as their creatively liberating and stimulating effect for contemporary thought comes across as ambivalent: In the light of current research findings on climate change ecocritical discourse is becoming very conscious of the concrete and materially real problems posed by the climatic developments, as well as of the economic

⁶⁰ Schlüter, 244.

⁶¹ Tomás Saraceno, "Conversation between Tomás Saraceno, Marion Ackermann, Daniel Birnbaum, Hans Ulrich Obrist, and Udo Kittelmann", In Ackermann et al., *Tomás Saraceno. Cloud Cities*, 42–47.

⁶² "Interview with Tomás Saraceno", *ArtSlant*, 27 Mar 2013, accessed online on 12 Mar 2014, <http://www.artslant.com/ny/articles/show/34218>.

and political constrictions, feedback loops, and contradictions between competing circulations of material and energy that are responsible for the escalation. In contrast to this "environmental realism" Saraceno's work and thinking inhabits a reality far away from the emerging material and social challenges and from the difficult existence of most people on Earth today. The artistic and political position expressed through *Cloud Cities* could in this way be regarded as not dissimilar to the positions behind geo-engineering "solutions" proposed to alleviate climate change, such as sending myriads of mirror particles into the stratosphere to reflect the sunlight back into space, with only limited knowledge about the ecological side-effects. Here, as in other utopian fantasies, new technological solutions are proposed without changing the economic production system they rely on. According to Meadows this does not take into account the overall limits to growth, defined as the limits of material throughput, and thus doesn't change the systemic problem behind the current ecological crisis. Likewise, reading Saraceno's *Cloud Cities* as potential prototypes for "sustainable ways of inhabiting the environment"⁶³ suggests that problems could be solved by simply detaching one's own reality and environmental experience from them. This is antithetical to systemic and ecological thinking.

If we look at *Cloud Cities* as straightforwardly utopianist and "biomimetic" as the work has been presented, there are several problems with the use of ecology as a metaphor for Saraceno's spectacular constructions. Firstly, they are too simple to count as comprehensive models of ecology. They are reduced to a single form, the perfect sphere, and its variations. The materials are limited, as well as the construction possibilities and the shapes that these objects can – for technical reasons – take on. By their materiality and concept, all these spheres are essentially the same, merely varying in size and pattern. This does not sufficiently consider the extreme diversity of ecologies of living and non-living agents, their divergent structural processes and forms of organisation, and the compatibility problems resulting from this cacophony of entities and forces. Secondly, the spheres are presented as a utopia that aspires to a complete physical and mental detachment from the ground and from immediate and intimate relations with neighbouring entities outside of these micro-environments. They thereby evade one of the most difficult questions in ecological thinking, namely how local ecologies relate to each other translocally, across vast spatial and temporal regimes. Saraceno's spheres are pristine and isolated in their beauty. The fact that they constructively and existentially depend *not* upon each other but upon the support structure of a quite different and non-flying building – the exhibition space as their "invisible" exterior container – is made to forget by focussing all the aesthetic attention on their beauty as single objects and their composition. Each sphere could exist by itself – inside the container of the gallery. While the spheres provide a rendered, controlled local environment for their few and selected inhabitants, the highly reduced inside-outside situation they create

⁶³ Tanya Bonakdar Gallery, "Tomás Saraceno. Biography", webpage entry, accessed online on 08 Mar 2014, <http://www.tanyabonakdargallery.com/artists/toms-saraceno/series>.

contradicts the intention of visualising the specific characteristics of codependency and ecological relationships between objects and beings in systems.



Figure 2: Tomás Saraceno, *Cloud Cities*, 2011, exhibition view, Hamburger Bahnhof Museum für Gegenwart, Berlin. Photo: Julia Martin.

While fully acknowledging the beauty and considerable fun factor of the installations and the dreamy enjoyment of such experiential fantasies of flight and weightlessness, I would regard the correlations made between Saraceno's spheres and ecology as a misinterpretation. They ignore what practical ecological relationships structurally entail: extreme differences, conflict, negotiation, entropy, and a realisation of codependency that is not always balanced, desired, or beautiful. In contrast, Saraceno's theoretically floating shapes are caught in the illusion of being autonomous, weightless, alone in the world, and free from negative agency or responsibility, just like their inhabitants: In the graphic representations of the installations visitors are shown as single contemplative figures, never as working, fighting, or in any way interacting people. *Cloud Cities'* spheres thus embody the "wrapping" effect of ecomimesis and of ambient poetics, which can also be detected in Saraceno's work as a whole. Ambient suspension can be found in his enigmatic photographs of a lone figure beneath a vast sky, mirrored in expansive sheets of still water, in his digital collages imagining the experiential atmosphere of flying cities, and in his sketch of a "community" locked inside a tiny drop, detached from its outside reality (see Figures 3 to 5, page 35).



Figure 3: Tomás Saraceno, *The Endless Photo*, 2006, c-print mounted on plexi and aluminium.



Figure 4: Tomás Saraceno, *Cloud City*, 2012, digital drawing/collage.

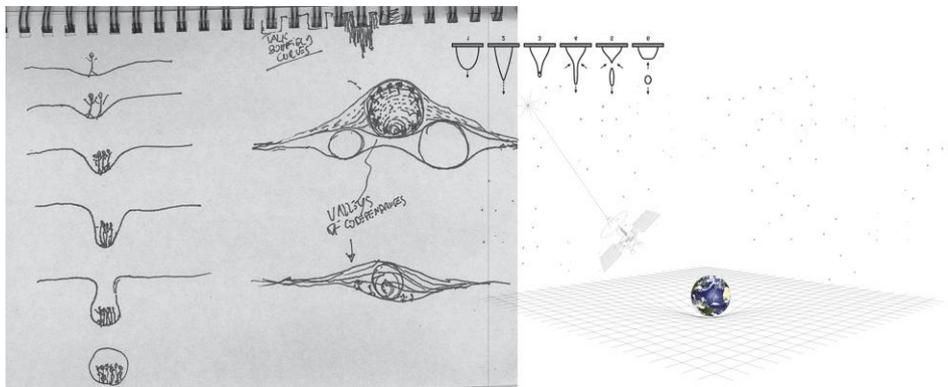


Figure 5: Tomás Saraceno, drawing/collage, no date.

Conceptually and formally, Saraceno's work as experienced and presented in *Cloud Cities* thus stays within the modernist tradition of (un)attainable utopias, of relation to Environment by "Sehnsucht", of creating closed objects that are only supposedly interdependent, and of maintaining the structuralised separation of Nature and Society. As self-contained environments, and in absence of a critical thread between the ambient state they evoke and the notion of escapism, *Cloud Cities'* spheres lose their potential ecocritical ambition and agency. From an ecocritical perspective, Saraceno's work in its recent interpretations misses a critical distinction between environment and ecology, and a deeper conceptual and political confrontation between its idealised system models and the characteristics and complications of practical ecology. So far, *Cloud Cities* creates and represents an artistically controlled "laboratory situation", similar to the one I will later identify in Bruno Latour's Political Ecology.

1.4.2 Field experience and its representation. Cape Farewell's "cultural response to climate change"

Cape Farewell is an eco-art initiative whose main goal is to encourage and present artistic responses to climate change, to connect artists and scientists, and to raise public awareness of climate change as a cultural challenge. The charitable organisation, founded in 2001 by artist David Buckland, offers field expeditions for artists, scientists, musicians, and cultural communicators, which have led to the High Arctic, the Andes, and the Scottish Isles, with the aim of providing the opportunity to witness climate change effects firsthand. During these expeditions, lasting between two and four weeks, the participants gather visual material, research data, inspiration, and create artistic interventions on site. The artistic responses to these field experiences have subsequently been presented in a number of Cape Farewell's travelling exhibitions, talks, and educational events, including works by Anthony Gormley, Sophie Calle, Mariele Neudecker, Rachel Whiteread, Mona Hatoum, Ian McEwan, Amy Balkin, and many more. The exhibition venues have been cultural institutions of a high standing and with an educational mission: e.g. the Royal Academy, the Southbank Centre, and the Natural History Museum in London, as well as university-affiliated galleries worldwide, for example in Vienna, Chicago, New York City, or Beijing. Cape Farewell is funded mainly by Arts Council England, by donations, and by the support of their collaborative partners, such as Eden Project in Cornwall. They are also working with a number of art colleges and schools in the UK (e.g. Wimbledon, Camberwell, Falmouth, Liverpool), offering workshops and short excursions in the urban environment. The organisation is based in London and has recently opened a North American branch, the Cape Farewell Foundation in Toronto. Their activities, and the spin-off projects initiated by participating artists or partners, are documented on their expansive website, in exhibition catalogues, and documentary videos. The participating artworks, and their curatorial framing as "climate change art", are therefore widely disseminated, also significantly as teaching material for art and design students, and are made very accessible for the interested

public.⁶⁴ Cape Farewell's popularity demonstrates that there is a demand for discussion, collaboration and learning between art institutions and science institutions, and also a substantial public and governmental support for such encounters on a grand scale. The educational efforts of the organisation are laudable in that they introduce new, especially young people to the discussion of climate change and contribute to keeping the topic very present in the institutional and public awareness.



Figure 6: Cape Farewell, *2010 Arctic Expedition, Svalbard*, 2010, Photo: Cape Farewell.



Figure 7: Cape Farewell, *Unfold*, 2010, exhibition view, University of Applied Arts, Vienna. Photo: David Buckland.

On the other hand however, I will argue that this high visibility is based on a popularising approach to climate change as well as to contemporary art, identifiable in Cape Farewell's representational rhetorics and the contents of its educational message. From an ecocritical perspective, the visual and verbal language which Cape Farewell and their institutional partners choose to present their "*cultural response to climate change*"⁶⁵ tends to reinforce rather than criticise a clichéd environmentalist Nature-Culture opposition, almost exclusively

⁶⁴ Cape Farewell, organisation's website, accessed 30 Oct 2013, <http://www.capefarewell.com>.

⁶⁵ The phrase is used in the title of Cape Farewell's exhibition catalogue *Unfold. A cultural response to Climate Change* (Vienna: Springer, 2010).

transporting a romantic and familiar understanding of "surface nature" as a sublime and endangered Other. It seems to me that Cape Farewell's rhetoric and aesthetics are highly successful in the public and institutional perception because they are repeating comforting renderings of human-nature relationships, even when pointing towards symptomatic environmental degradation, and thus fit seamlessly into the tamed ecopolitical positions of established art and science institutions, and of the imagined green capitalism promoted for our highly technologised societies. The eco-art approach presented through Cape Farewell does not explicitly challenge established metaphysical considerations of Nature, Society, and their relation, and stays well away from critically exploring the systemic correlations and complicities between "cultural responses" and cultural (economic, political) practices causing ecological crisis. On the upside, this "soft approach" of Cape Farewell's "cultural response to climate change" is widely accessible to a public that might not consider itself as particularly environmentalist or activist. On the downside, it obscures eco-art's potentially conflicted critical agency by not recognising the political conservatism inherent in its emphasis on a classically environmentalist and romanticised Nature-Culture dialectic. This is not necessarily only an artistic problem, but also a curatorial one: Cape Farewell's representation of the artworks, safely remaining in the ecopolitical mainstream, largely passes by a deeper discussion of the individual critical or subversive positions that some artists within the Cape Farewell network have actually delivered: The works of Amy Balkin and Ian McEwan for example both escape the temptations of illustrating a thematic context that is overly rich in visual possibilities. They focus instead on the intellectual human effort required in coming to terms with the destabilisation of what can be understood as the human project on Earth.

Amy Balkin's video *Climate Change 2007: Synthesis Report. Summary for Policy Makers* presents a recording of her straightforward reading of the entire summary of the IPCC Fourth Assessment report.⁶⁶ It highlights in a simple and powerful way the cumbersome and conflict-laden discourse in which the decision makers and representatives of the world have to be engaged in order to potentially change current systemic structures democratically. This process of excruciatingly slow negotiation and struggle for words, involving translation, misunderstanding and clashing of worldviews, can be seen simultaneously as the cause and the potential cure of our current and future relational problems. Difficult to endure and to understand, these communicative struggles nevertheless must be attended to.

⁶⁶ "The Intergovernmental Panel on Climate Change (IPCC) is the leading international body for the assessment of climate change. It was established by the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts." Intergovernmental Panel on Climate Change, organisation's website, accessed on 08 Mar 2014, http://www.ipcc.ch/organization/organization.shtml#_UyCbHZtT9FQ.



Figure 8: Amy Balkin, *Climate Change 2007: Synthesis Report. Summary for Policy Makers*, 2008, video still.

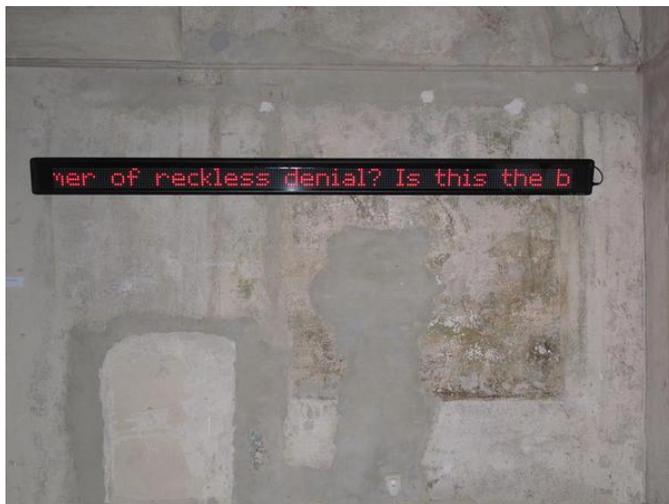


Figure 9: Ian McEwan, *The Hot Breath of our Civilisation*, 2006, text on LED display, installation view, University of Applied Arts, Vienna. Photo: David Buckland.

The writer Ian McEwan participated in Cape Farewell's Greenland expedition and responded with the short text *The Hot Breath of our Civilisation*. Running across an LED panel, it offers an observation of the human psychological condition in the face of possibly disastrous change. Rather than evoking an image of endangered environments or the backlash of Nature, McEwan considers how human individuals and their organisation, consciously or not, are standing in the way of their own rescue. The choice is ours, the text implies, all is not lost if we reclaim our own positive agency by changing our views and behaviour. The didacticism inherent in these statements could be read literally, or through the lens of a slightly satirical look upon the attempt to educate audiences through art and literature on such complex processes as climate change. The second possibility is not unlikely, as McEwan has later brilliantly expressed his scepticism regarding the ecodidactic integrity of both art and science in his novel *Solar*, which includes an episode directly inspired by his participation in the Cape Farewell expedition to the Arctic.⁶⁷

⁶⁷ Ian McEwan, *Solar* (London: Vintage, 2011), paperback edition, 45–80.

The positions of other artistic contributions produced in the Cape Farewell network, from an ecocritical perspective, can be considered as conceptually and methodologically more ambivalent. My critique refers in particular to their understanding and use of site-specific immediacy and artistic fieldwork, and to their reproduction of a distant, romantic Nature idea. The exhibition *Unfold* for example presents the artistic responses to Cape Farewell's sailing expeditions to the Arctic in 2007 and 2008, and to its hiking expedition in the Andes in 2009.⁶⁸ During these journeys, so the Cape Farewell website, "each artist witnessed firsthand the dramatic and fragile environmental tipping points of climate change".⁶⁹

Firsthand immediacy, in Cape Farewell's approach to artistic research, is regarded as an opportunity for acquiring a comprehensive experiential knowledge base upon which to develop artistic responses to the witnessed situation and its wider climate change context. However, it seems to me that this comparatively spontaneous intake-output dynamic happens much too quickly to allow for a deeply ecocritical artistic engagement. The field experience of the artists during a three-week guided expedition is short-term and event-based rather than process-based or indeed lived, as it is for the inhabitants of the visited territories. It could be questioned whether during such a short exposure to an overwhelming and alien place (such as the Arctic) individual perceptive and responsive automatisms, and ingrained Nature images could be overcome, enabling the artists to experience and process the dynamics of the visited site's ecology, rather than merely mirroring their own aesthetic and environmental relationship with it. A fieldwork approach based on long-term participant observation would be more appropriate for Cape Farewell's high ambitions regarding artistic research, which seem to imply that the expedition artists are able to deliver a true account of the critical situation "out there". Participant observation in the context of climate change, however, requires a commitment that, as could be argued, might go beyond the methodologies which artistic practice is able to provide: As a gradual, largely invisible process stretching over decades, climate change is notoriously obscured for the individual human, unless its observation becomes a life-long documentary project. The momentary glimpse and the spontaneous response, as artistic approaches to site context, do not necessarily deliver fundamentally new or revised realisations of what is experienced, or a critical reflection of the process and limitations of observation. Instead, quite often they produce a reconfirmation of what has already been known or thought about the site, and also a reconfirmation of Nature as aesthetic object. Admittedly, places like the High Arctic stun visual perception with their outstanding beauty and strangeness, and hence the seduction of surface scenery is almost inescapable, obliterating slower, less attractive, and less spectacular aspects of ecological processes in these territories.

⁶⁸ *Unfold*, exhibition curated by David Buckland and Cape Farewell, University of Applied Arts Vienna, Vienna, May–Jun 2010, travelling internationally.

⁶⁹ Cape Farewell, organisation's website, accessed on 30 Oct 2013, <http://www.capefarewell.com/art/unfold.html>.

Two exemplary works in Cape Farewell's *Unfold* exhibition use the aesthetic appeal and the perceived exotism of the Arctic landscape very literally as environmental background surface for their projects: David Buckland, founder and director of Cape Farewell, and curator of *Unfold*, exhibits a series of photographs documenting his on-site artistic intervention, in which he projected moving text fragments, written by Amy Balkin, onto floating icebergs in Greenland's Disko Bay. According to the artist, the texts on the icebergs are intended to "make us reflect on our consuming appetite and lifestyle", asking "Are we really willing to tempt the power of nature?".⁷⁰ As a second example, Chris Wainwright presents large-format photographs of floating icebergs at night, shot with either white flash or red flash. As stated by the artist and co-curator of *Unfold*, the images are thought to "reflect the dangers associated with the climatic changes affecting the planet".⁷¹



Figure 10: David Buckland, *Ice Text. Discounting the Future*, 2008, photographic print, perspex mounted, text by Amy Balkin.



Figure 11: Chris Wainwright, *Red Ice 3*, 2009, colour c-print on aluminium.

⁷⁰ David Buckland, "Ice Texts", In David Buckland and Chris Wainwright (editors): *Unfold. A cultural response to climate change* (Vienna: Springer, 2010), 36.

⁷¹ Chris Wainwright, "Red Ice – White Ice", In David Buckland and Chris Wainwright (editors): *Unfold. A cultural response to climate change* (Vienna: Springer, 2010), 98.

My main critical point regarding these two works is that by overusing one of the most iconic images of environmental activism – the melting iceberg – they flatten the ecological, cultural, and intellectual problem field behind climate change into rather simple artistic responses, which, considering the recent discourses in ecocriticism, very unselfcritically reconfirm the romantic/modernist distancing of Nature from Society. Both works present enigmatic, beautiful images of an Arctic maritime landscape that show the sites not as sites but as mere stage sets for two temporary artistic interventions. Apart from a single symbolic gesture, the interventions themselves offer no deeper exploration or imagination of their context, whether conceptual, metaphysical, or political. They contain no indication of how exactly the artists see our "consuming appetite and lifestyles" relate to the warming Arctic, or of what exactly they expect to be "the dangers associated with the climatic changes". The necessity of making these statements "in situ" in the Arctic, instead of in the places where "consuming appetites" are produced and maintained, is also not apparent as a potentially ecocritical position. Buckland and Wainwright here present an encounter with "surface nature" in the most polemical sense, using already iconised elements of a "sublime" landscape literally as screen for their projections. Curiously, the artists' experiential interactions themselves with this landscape are not made part of the image. The words and flashlights remain decontextualised and "free-floating", coming "out of nowhere" as an "Aeolian", ecomimetic phenomenon. As Morton has observed, ecomimesis has a distancing and paralysing effect: *"Even when the narrator is apparently screaming in our face (...), the message hovers off to one side. It appears to inhabit an entirely different dimension (...)."*⁷² The effect of the photographs' ecomimetic rhetorics thus seems to be that they do not invite or undertake a deeper engagement with the actual places they are showing, but confront the viewer with the impenetrable smooth surface of a distant nature as iconic, silent landscape, briefly lit but undisturbed by a passing thought. For the viewer, the photographs therefore become mere documents of an imagined personal and hermetic encounter.

In the exhibition catalogue the artists' brief written accounts of their field experience emphasise the personal risk involved in making these works on site:

*"(...) the captain of the Noorderlicht manoevered his vessel to within eight metres of an iceberg as it towers above us. It could flip at any time."*⁷³

*"I was acutely aware of the real possibility of these vast structures suddenly collapsing and capsizing our tiny vessel as I manoevered close enough to photograph them."*⁷⁴

The sublime shudder of the artists in their small boats, enveloped in their fascination with the Arctic, is delivering an atmospheric description of a personal encounter, but it adds nothing to a critical and complex understanding of climate change effects and the nature of their

⁷² Morton, *Ecology without Nature*, 63.

⁷³ Buckland, "Ice Texts", *Unfold*, 36.

⁷⁴ Wainwright, "Red Ice – White Ice", *Unfold*, 98.

subversive and immediate dangers for people. The melting of icebergs in the context of climate change is not dangerous or remarkable because one iceberg might sink a boat that happens to be too close at the time of collapse, as tragic as such an accident would be. The use of the artists' personal "daredevilism" as a way to illustrate the problems of a warming globe is, in my view, a rather irritating individualistic misrepresentation of the ways in which climate change is a threat, in particular to local populations in the Arctic, which have so far remained completely invisible in Cape Farewell's projects.

My reading of these two works might be a little too pedantic, but I think it is important to point out a tendency in eco-art to use personal narration and a superficial "field experience" in a way that on closer observation obscures or even falsifies the complex realities of local and translocal social-ecological relationships and avoids addressing more uncomfortable collective and individual responsibilities. The artistic adventure is here more in the foreground than the subject matter and critical context of cultural responses to climate change. Miwon Kwon, in *One Place after Another*, observes that "*It is now the performative aspect of an artist's characteristic mode of operation (even when in collaboration) that is repeated and circulated as a new art commodity, with the artist him/herself functioning as the primary vehicle for its verification, repetition, and circulation.*"⁷⁵ The presence of the artists in the Arctic, the dark water, the cold air, the towering ice, the individual risk involved, and certainly the act of projecting text or flashlights onto the ice, are irrelevant for the critical investigation of the vast problem field that the melting iceberg is supposed to stand for in the final image. This image conveniently excludes for example the noise of the boat's diesel motor and of the generator powering the projector, as well as the flight tickets for the international artists gathered on board of the expedition's environmentally correct sailing vessel. But Buckland's and Wainwright's background story of the heroic artist-explorer nevertheless has an effect on the viewer – a distancing rather than involving effect, as it provides exactly what Morton has identified as the characteristics of ecomimesis: authentication, evoking a situatedness of the author as witness; a shared time of reading and narrating, including the viewer or reader; "paratactic lists" describing the imagery of phenomena and surroundings; quietness (though not silence) that "*evokes the distance between the hearer and the sound source*"; an atmosphere or "ambience", created by the combination of the above elements.⁷⁶ The distancing and separating effects of ecomimesis, its celebration of fantasy Nature, and its hindrance of a critical, structural awareness of ecological relationships have been described above.

Buckland's and Wainwright's photographs and their supporting narratives are therefore, in a way that should be problematised, not trivial in how they demonstrate a way of seeing, framing, and transporting an entire discussion of climate change. The strangely broken dialectic between "firsthand experience" and critical response, as it presents itself here,

⁷⁵ Miwon Kwon, *One Place after Another. Site-specific Art and Locational Identity* (Cambridge MA: MIT Press, 2004), paperback edition, 47.

⁷⁶ see chapter 1.3.1.

points to a general problem with Cape Farewell's approach to place and context in their field expeditions, which are so central to the organisation's practice: The deep changes (of "realist nature") that the participants expect to experience on Cape Farewell's expeditions are inaccessible through this format of encounter, because they inhabit a different temporal scale. The firsthand observations made, for example when witnessing calving icebergs, relate to phenomena that happen regularly and quite "normally", but are now encountered by the expedition artists with the additional informational knowledge about scientific data predicting future melting rates. As a consequence the "normal" event is interpreted and pictured as a symptomatic effect of climate change. This is not wrong, but it is still an experience of "surface nature". The actual change that is occurring on site in "realist nature" through global warming – the exponential *acceleration* of the usual calving process – could only be experienced "firsthand" in form of a long-term consistent observational involvement with the ecology of such sites and events. The exploration process and its results here fall short of what Cape Farewell claims to accomplish with these field trips, namely an indepth understanding of ecological relationships. To *experience*, as an individual, ecology as a system might arguably be impossible altogether – certainly on the basis of a first and short encounter limited by multiple factors of inaccessibility.

The problematics of perception embedded in fieldwork have been discussed at length within the discipline of anthropology: James Clifford for example has described the "ethnographic self-fashioning" and the "ethnographic surrealism" occurring in the dialectic between anthropological fieldwork and its written interpretation.⁷⁷ In the field of contemporary art, Hal Foster, Miwon Kwon, Lucy Lippard and artists such as Renzo Martens have delivered very poignant critiques of the ethically difficult and potentially exploitative relationships between itinerant artists, local inhabitants, sites, and commissioners or hosts.⁷⁸ Given that even the expansive timescales used in anthropological research (counting in months and years, rather than days and weeks) and its highly methodical, scientific employment of participant observation are still problematised by the discipline itself as not being sufficient enough to develop an unbiased inside view of a social-ecological situation, the idea that artists, by ways of a vaguely unique artistic imagination and perception, will be able to grasp a place in its complex context instantaneously and without the experience of living in it, appears unlikely, and I suspect that this somewhat "neo-colonialist" claim in eco-art would not remain uncriticised if the field context was urban or ethnographical. Applied to the "empty" sites of Nature however, the superficial "tourist gaze", content with framing landscapes rather than exploring places, is often not detected as a misrepresentation of specific context, perhaps

⁷⁷ James Clifford, *The Predicament of Culture. Twentieth-Century Ethnography, Literature, and Art* (Cambridge MA: Harvard University Press, 1988).

⁷⁸ See for example:

Hal Foster, "The artist as ethnographer?", In George Marcus and Fred Myers: *The Traffic in Culture: Refiguring Art and Anthropology* (University of California Press, 1995), 302-309.

Miwon Kwon, *One Place after Another. Site-specific Art and Locational Identity* (Cambridge MA: MIT Press, 2004), paperback edition.

Lucy R. Lippard, *The Lure of the Local. Senses of Place in a Multicentered Society* (New York: The New Press, 1997), 263.

On Renzo Martens see for example: Pieter Van Bogaert, "On the Outside. Exteriority as a Condition for Resistance". *Afterall*, No 23, 2010, 120–129.

because there is no-one to protest and correct. Hal Foster's critique of the "*pseudo-ethnographic*",⁷⁹ directed at artistic methodologies employed predominantly in human, urban community contexts, could also be applied to practices intending to research human-nonhuman ecological relationships. In Cape Farewell's short expeditions, it can be argued, the witness observer perspective of the visiting artist is kept intact and unchallenged, and his or her imported (romantic) ideas of the visited site do not get the chance to be altered and expanded beyond the elated "touristic" experience – by time, active participation, and continuous or repeated exposure. Meanwhile, the general perceptive capacity of the "artistic gaze" is never questioned. Such passing engagement diverges dramatically from what Lucy Lippard has called "*place-specific, place-responsible art*", "*an art that reveals new depths of a place to engage the viewer or inhabitant, rather than abstracting that place into generalizations that apply just as well to any other place.*"⁸⁰ As a result of their only fleeting encounter, many of the works produced by Cape Farewell's participants may be "*about place*", but not "*of place*", an important distinction which Lippard emphasises in her observations of place-specific public art (see chapter 1.4.3). It is perhaps telling that the ecocritically more substantial works by Amy Balkin and Ian McEwan are not directly engaged with the Arctic as an imagined or experienced place. It should also be noted that most artists involved in Cape Farewell's trip to Greenland did not attempt to refer to the Greenlandic population and culture in their works, which would have been a possibility given the intention to raise awareness of the effects of climate change as they can be witnessed in this region. I see this omission of the social-ecological aspect on the one hand as highly problematic because it frames the situation of change not as it presents itself in the lives of the inhabitants of the Arctic, and distorts it thereby for an outside audience for whom this change often seems to be made relevant predominantly as a loss of visual stimulation (no more icebergs and polar bears). On the other hand, under the circumstances of limited time, experience, and contact possibilities it has perhaps been a better and more honest choice to remain focused on the individually witnessed surface of a landscape, rather than to present a pretended or imagined "insider" view of a place and community.

As Lippard has noted, "*A lived-in landscape becomes a place, which implies intimacy; a once-lived-in landscape can be a place, if explored, or remain a landscape, if simply observed.*"⁸¹ Which leaves the question what a "never-lived-in landscape" could be for the artist observer. From my own short experience of Greenland I can attest to a strong feeling of exclusion from any meaningful participation in its glacial landscape – an exclusion issued by the visual and physical power of the land itself, which in all its staggering beauty is also obviously dangerous and unnavigable for an unprepared visitor. To make the Arctic a place for an outsider would require a very long direct engagement with it, and it would fundamentally change this person's behaviour and perception, and his or her forms of response.

⁷⁹ Foster, "The artist as ethnographer?", *The Traffic in Culture*, 302–309.

⁸⁰ Lippard, *The Lure of the Local*, 263.

⁸¹ *ibid.*, 8.



Figure 12: Cape Farewell, 2008 Arctic Expedition, Disko Bay, 2008.
Photo: Kathy Barber.



Figure 13: Cape Farewell, 2009 Andes Expedition, Humantay Glacier, 2009.
Photo: Ana Cecilia Gonzales Vigil.

Some of Cape Farewell's visiting artists have taken their field experiences as a starting point for a continuous engagement with the encountered thematic and geographical contexts. In this way Cape Farewell might indeed have been an important catalyst for initiating and supporting artistic engagement with climate change and climate science. However, as an organisation of considerable public presence Cape Farewell can and should be criticised for using a rather simplifying rhetoric regarding the discussion and representation of human-nonhuman ecology, which presents the individual artworks, projects, and exhibitions too uncritically and too quickly as contributions to *"a new process of thinking where artists play an informed and significant role through creating a cultural shift, a challenge to evolve and inspire a symbiotic contract with our spiritual and physical world"*.⁸² Given Cape Farewell's claim that artists will inspire a "cultural shift" and a "new process of thinking" about ecology, it seems strange that the organisation does not enter a sustained critical discussion with for

⁸² Cape Farewell, organisation's website, accessed on 30 Oct 2013, <http://www.capefarewell.com/art/unfold.html>.

example ecocriticism, cultural theory, capitalist critique, or systems theory. Its absolute confidence regarding the ideological independence of artists (and scientists) and their capability to see and present "pure truths" by default, seems to make Cape Farewell blind to the possible exploitability of its projects by neoliberal attitudes supporting "green but harmless" eco-art events. Addressing a broad audience is important to raise climate change awareness, and Cape Farewell has been very successful at creating large and integrative platforms for this, supported by powerful institutions. However, from an ecocritical viewpoint its concern with highest-possible visibility does not seem to benefit the critical, theoretical, scientific, and politically challenging discourse it could and should be offering as well, as intrinsic part of any discussion regarding contemporary concepts of ecology.

Lucy Lippard has stated that it is the artist's job to teach us *how* to see.⁸³ This should translate today into a highly self-critical exploration by eco-artists not only of *what* we perceive of the environmental situation, but also *how* and *why* we perceive it in a certain way, identifying where the tools of aesthetics – especially when employed in the context of Nature and Environment – are limited. Cape Farewell however is largely promoting exactly the romantic consumerist view that has until now contributed to upholding the separation between Society and Nature with all its negative effects.

1.4.3 Local or translocal ecologies? Lucy Lippard's *Weather Report: Art and Climate Change*

I have above referred to Lucy Lippard's extensive long-term research into place-specificity in public art. Lippard has been one of the most influential and experimental curators of conceptual art since the late 1960s. She has written extensively about art and social change, feminism, site-specific and public art, maintaining an important critical voice as a thoroughly observant writer and committed activist, particularly in environmental and feminist debates. Her most widely known book is probably *Six Years: The Dematerialization of the Art Object*.⁸⁴ In the 1990s Lippard arrived at her definition of place – understood as a very specific and locally rooted site context – through her critical engagement with public art in a postmodern era: She is critical of how the word place is used in postmodern theory, which tends to posit placelessness as the contemporary mode of existence, performed for example by the visiting artist commissioned to create a work of art for the public domain. For her, the detachment and multicentrism developed through modern and conceptual art and postmodern theory has taken away from the concern and care that public art can express for a specific unique place and community, and from the deep knowledge of place that grows from such commitment. In *The Lure of the Local* Lippard describes her definition of public art like this:

⁸³ Lucy R. Lippard, "Expecting the Unexpected", In Lucy R. Lippard et al., *Weather Report: Art and Climate Change* (Boulder: Boulder Museum of Contemporary Art, 2007), exhibition catalogue, 11.

⁸⁴ Lucy R. Lippard, *Six Years: The Dematerialization of the Art Object from 1966 to 1972* (New York: Praeger, 1973).

*"My own short definition of public art: accessible art of many species that cares about, challenges, involves, and consults the audience for or with whom it is made, respecting community and environment. (...) Permanent and ephemeral, object and performance, preferably interdisciplinary, democratic, sometimes functional or didactic, a public art exists in the hearts, minds, ideologies and educations of its audience as well as in their physical, sensuous experience."*⁸⁵

The conventional approach to public art in her eyes often does not consider place and context thoroughly enough:

*"Artists confronted with a specific landscape are conventionally invited to impose their own visions upon it – an overlay of personal or conceptual preference. But what if the existing place demands to be considered for itself, not as a blank slate, but as an already evolved image with a history, that can be altered, even transformed, but never entirely erased? In this case, collaboration with those who are of the place, especially scientists who know it close-up, in excruciating detail, would make the whole enterprise far more complex and more layered. Collaboration is the social extension of collage."*⁸⁶

A place-specific, place-responsible public art is then for her the consequence of knowing and including the public and the history of the place they inhabit. This high mark is not often reached: "... a truly place-specific public art is still in its infancy. For all the art that is about place, very little is of place – made by artists within their own places or with the people who live in the scrutinized place, connecting with the history and environment."⁸⁷ For Lippard, to achieve an art that is of place, it must be specific and locally rooted rather than generalising and detachable: "... an art that reveals new depths of a place to engage the viewer or inhabitant, rather than abstracting that place into generalizations that apply just as well to any other place."⁸⁸ Because of its deep and active involvement in the analysis of local context, an art of place is regarded by Lippard as particularly well equipped to raise awareness of specific environmental concerns and to instigate change in collaboration with the people that will have to participate in these changes. Place-specific art is thought to have a heightened potential to unfold a grass-roots agency, which benefits environmental activism and enables positive changes on a smaller scale. Importantly, it directs the focus of attention away from the artist and towards the lived concerns of a place – it takes places and their inhabitants seriously as direct or indirect collaborators in the work and avoids the superficial and flatly aestheticising "tourist gaze". Place-specificity is thus seen by Lippard as the most effective and adequate approach for environmentally and socially engaged art.

⁸⁵ Lucy R. Lippard, *The Lure of the Local*, 264.

⁸⁶ Lucy R. Lippard, "Imagine Being Here Now: Towards a Multicentered Exhibition Process", keynote lecture, *The Falmouth Convention*, Falmouth, May 2010, accessed online on 08 Mar 2014, <http://www.thefalmouthconvention.com/keynote-lucy-lippard>.

⁸⁷ Lucy R. Lippard, *The Lure of the Local*, 263.

⁸⁸ *ibid.*, 263.

Lippard's detailed discussion of place is important to consider in the context of ecocritical art for two main reasons: On the one hand it demonstrates the potential of contemporary art to investigate ecology in a similarly thorough and progressive way as it has been investigating place, using the methodologies and experiences of conceptualism, from Land Art through to feminist and public art. On the other hand I think it can offer insight into why this potential has not yet been fully activated: I will argue that the notion of place itself, in the definition of Lippard which binds place strongly to the local and its history, seems to limit the capacities of eco-art to understand ecology as *translocally* as it presents itself in times of climate change. Eco-art's concentration on the local, the "deep map",⁸⁹ presents here a problem of introversion that hinders systemic thinking. While place-specific eco-art is proving to be uniquely capable of addressing and engaging its immediate environment, describing perhaps the micro-ecology of this place as habitat, it falters when asked to consider ecology on a global scale. If we understand ecology as a wide network of places that are obviously or subversively connected, place-specific eco-art can contribute to collecting knowledge about all these individual places, but this knowledge will remain incomplete as long as the outward connections of these places are not analysed and put on the local map as well. Doing this might cast a very different light upon a place, revealing a certain schizophrenic existence based on patterns of inward versus outward codependencies. In an era of climate change related global crisis – also financial crisis – we are learning by experience that places can be seriously affected by decision making processes that are located entirely outside of the action radius of local inhabitants (see Fukushima, EU agriculture policies, mega-corporations, pollutants in the food chain, stockmarket crashes). It is a characteristic of our current economic systems that causes and effects, losses and gains, are geographically widely detached from each other, that they are sometimes deliberately being made invisible to each other. To insist on place-specificity in the sense of the immediate local seems to me too limiting for an eco-art that aspires to rethink and relocate ecology and ecological agency for the 21st century.

Places are influenced from outside as much as from inside. They also have a wider action radius upon the outside than they might realise. They are part of a system of overlapping infrastructures, and no clear boundaries can be drawn around them unless deliberate exclusions are made. The generalisation of place, criticised by Lippard, might therefore not always be a flattening or a misrepresentation of place – it might rather be part of a necessary translation process, making the relationships between local places and their codependencies understandable and comparable. Each place may be unique but each place also shares some of its time, matter, energy and agency with other places. To delineate these translocal connections and look at their consequences critically would be the task of an ecocritical art

⁸⁹ "The strongest activism around place really starts from a center, a very specific place, in what William Least Heat Moon calls a "deep map." And then with really consciously lived experience, it moves out from there in ripples. A great way of learning where you are is to think in terms of those ripples and how they affect your center and where other rings intercede to affect you and the environment, and so forth." Lippard, "Imagine Being Here Now: Towards a Multicentered Exhibition Process", *The Falmouth Convention*.

that comes from a deep place-awareness but looks beyond the immediate local. We could thus say that for ecocritical art the investigation of ecological and social relationships would have to be based on the one hand on a deeply engaged localised place-specificity, and on the other hand on a conceptualisation of ecology as a system that is not restrictable to local place. This conceptual and methodological challenge can be observed as an emerging internal discourse in Lippard's exhibition *Weather Report: Art and Climate Change*.⁹⁰

Weather Report was presented from September to December 2007 at the Boulder Museum for Contemporary Art in Colorado, USA, as well as at the University of Colorado, the public library, the National Centre for Atmospheric Research, and on outdoor locations throughout the city. Curated by Lucy Lippard and realised in partnership with the Boulder based organisation EcoArts, it included works by 51 artists and art-science collaborations.⁹¹ The exhibition aimed to bring practitioners of the arts and the sciences together with scholars, politicians, educators, businesses and lay audiences, using the arts in particular to initiate discussion, awareness, and action between these groups in response to ecological crisis. As Lippard states in the catalogue, *Weather Report's* aim was "to communicate visually what we can barely comprehend" about climate change and its related issues, whilst being "beautiful, accessible, and alarming, but not alarmist".⁹² She describes the works and practices shown as "issue-oriented public art",⁹³ whose interdisciplinarity and collaborative methodologies are thought to be "better able to cope with the vast amount of information available" than art practices that stay within their own disciplinary borders.⁹⁴ Importantly, many of the exhibited works were the results of interdisciplinary working partnerships between artists and scientists exploring new possibilities for visual and non-visual dialogues around the topic of climate change. It has been Lippard's intention to "put together a show so varied that it cannot be dismissed as merely art, merely science, or merely agitprop".⁹⁵ In line with her distinctly explorative and inclusive curatorial practice,⁹⁶ Lippard brought together a survey show of recent and commissioned artworks engaging more or less explicitly with climate change. Many but not all of them were using a place-specific approach, and Lippard appears here to have expanded her original vision of environmentally and socially engaged eco-art quite widely, including participants such as The Yes Men, whose approach is not place-specific in the sense of "locally rooted". She also seemed curious how current "issue-oriented public art", alerted by the discussions of climate change, might enter a critical discussion with the now more established eco-art of the 1980s-90s. The roots of these practices, represented for example by Agnes Denes, Newton Harrison and Helen Mayer Harrison, or Mary Miss, lie in the history of conceptual art and its ambiguous relationship with modernism, as Lippard describes in *The Lure of the Local*. This legacy should lead to frictions in an emerging artistic

⁹⁰ *Weather Report: Art and Climate Change*, exhibition curated by Lucy R. Lippard in collaboration with EcoArts, Boulder Museum of Contemporary Art, Boulder, Colorado, Sep–Dec 2007.

⁹¹ For a list of all participating artists see Appendix.

⁹² Lucy R. Lippard "Weather Report: Expecting the Unexpected", *Weather Report: Art and Climate Change*, 5.

⁹³ *ibid.*, 5.

⁹⁴ *ibid.*, 5.

⁹⁵ *ibid.*, 6.

⁹⁶ Cornelia Butler et al., *From Conceptualism to Feminism. Lucy Lippard's Numbers Shows 1969–74* (London: Afterall Books, 2012).

discourse of ecocrituality where modernist thought is criticised for having constructed a rigid and exploitative division between Nature and Culture, environment and individual.

The future discussions brewing here have not yet fully surfaced, but in my view *Weather Report* could be read as the anticipation of unresolved conceptual questions within the aims, approaches, and terminologies of eco-art itself. Looking at three very different works as examples for the exhibition's wide spectrum of artistic approaches, the emergence of an internal ecocritical discourse can indeed be observed: Agnes Denes' *Tree Mountain* fixes an environmental concern to a specific place, but isolates it from its global political context. Mary Miss's *Connect the Dots. Mapping the Highwater Hazards and History of Boulder* inserts visual markers into the local urban landscape, precisely delineating the potential impact of catastrophic flooding, adding a historical as well as future-oriented layer to the current perception of this place. The Yes Men's *Exxon Vivoleum* challenges the ethical and ecological awareness of corporate and political decisionmakers by stretching their placeless, detached cynicism to the extremes and confronting them on their own turf, mirroring the twisted logic of their enterprises and exposing the places where such logic is invented and celebrated.

I will look at these works now more closely, trying to find out if and how their positions can go beyond the place-specific eco-art frame and expand their attention towards abstract translocal relationships, taking into account the seemingly placeless, "aeolian" causes of climate change and global environmental crisis. My interest lies with their potential ecocritical agency and its limits, seen through their open or hidden discourses of local place and ecology.

Agnes Denes, *Tree Mountain* (1992-96)

Agnes Denes' contribution to *Weather Report* consisted of drawings and photographs of her artistic land reclamation project *Tree Mountain* in Finland. Built between 1992 and 1996, this monumental work is "a huge manmade mountain measuring 420 meters long, 270 meters wide, 28 meters high, and elliptical in shape".⁹⁷ It was constructed on a former mining site and planted with 11.000 pine trees. It is a place-responsive and participatory artwork, although participation perhaps takes place more symbolically than actively: 11.000 people from all over the world became certified tree custodians. The elliptical planting pattern designed by Denes is described as "a combination of the golden section and the pineapple/sunflower system", and as "reminiscent of ancient earth patterns".⁹⁸ The artwork was declared a national monument by the Finnish Government, and is to be protected and maintained for 400 years.

⁹⁷ Lucy R. Lippard et al., *Weather Report: Art and Climate Change*, (Boulder: Boulder Museum of Contemporary Art, 2007), exhibition catalogue, 42.

⁹⁸ *ibid.*, 42.

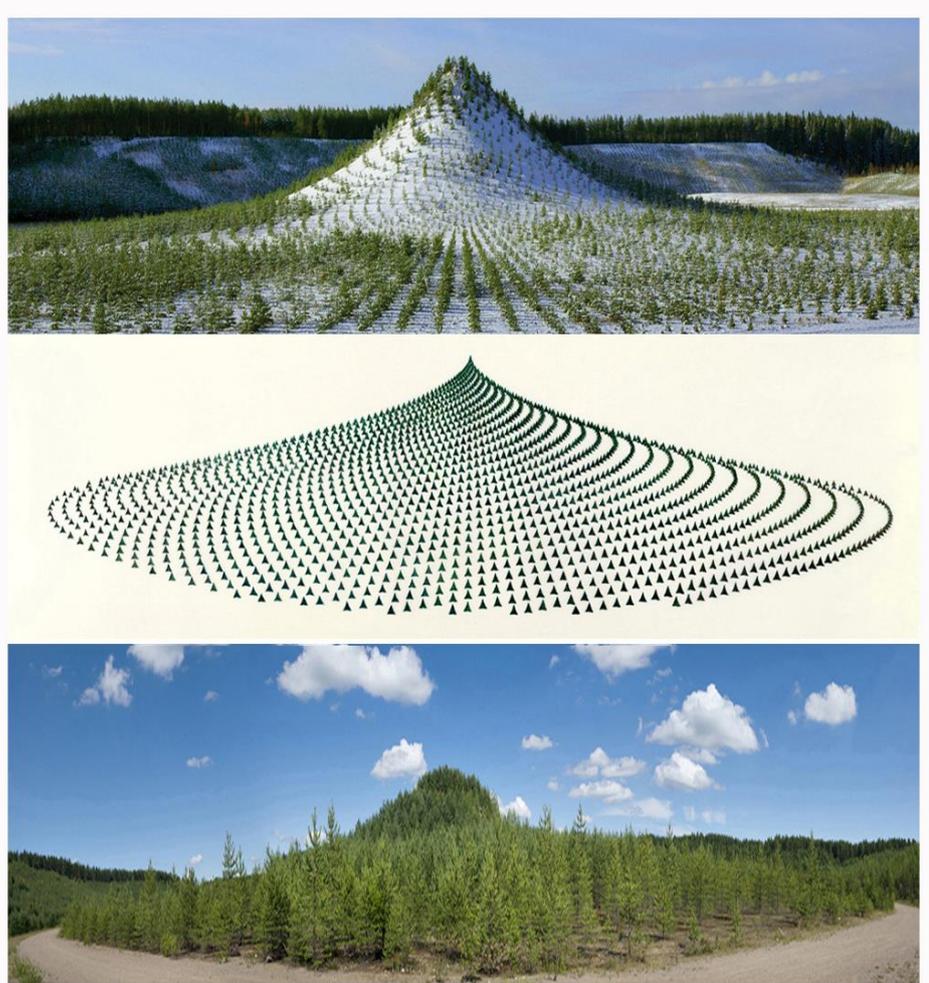


Figure 14: Agnes Denes, *Tree Mountain – A Living Time Capsule – 11,000 Trees, 11,000 People, 400 Years*, 1992–1996, Ylöjärvi, Finland. Documented here as digital triptych of drawing and two photographs, no date, courtesy of the artist.

From an ecocritical standpoint there are two main concerns with the work and its presentation. Firstly, the project's claim to create "*the world's first manmade virgin forest*"⁹⁹ is in scientific respect misleading, since "virgin forest" is a synonym for "old-growth forest":

*"An old-growth forest (also termed primary forest, virgin forest, primeval forest, late seral forest, or in Britain, ancient woodland) is a forest that has attained great age without significant disturbance and thereby exhibits unique ecological features and might be classified as a climax community. Old-growth features include diverse tree-related structures that provide diverse wildlife habitat that increases the bio-diversity of the forested ecosystem. The concept of diverse tree structure includes multi-layered canopies and canopy gaps, greatly varying tree heights and diameters, and diverse tree species and classes and sizes of woody debris."*¹⁰⁰

⁹⁹ Lippard et al., *Weather Report: Art and Climate Change*, 42.

¹⁰⁰ "Old-growth forest", *Wikipedia*, accessed on 08 Mar 2014, http://en.wikipedia.org/wiki/Old-growth_forest.

In a shorter definition it is "a forest in its natural state, before it has been explored or exploited by man".¹⁰¹ As a planted forest, however, *Tree Mountain* has not only already been explored but also created by humans, and has served as an artistic or activist symbol from the start of its existence. Its formal visual language appears at odds with the described ecology of untouched woodlands and with their behaviour as evolving ecosystems. The regularly spaced single-species tree plantation of Denes' work seems to present the very antithesis of a "diverse tree structure", and is functionally and visually more equivalent to the geometrical planting patterns of forest monocultures. While the positive effect of 11.000 trees on the climate is unquestioned, and while the participatory side of the project has helped to raise awareness of the importance of reforestation and long-term forest protection, its form is at the same time celebrating an aesthetics of industrialised tree farming, measurability, systemic control, and of lasting (visual) human imprint on the Earth.

The second point I would like to raise refers to the project's interpretation and representation. In 1992, on occasion of the Earth Summit at Rio de Janeiro, *Tree Mountain* was first presented as "Finland's contribution to help alleviate the world's ecological stress".¹⁰² Both in this declaration and in the formal language of the work, the project appears as a symbolic gesture, offering a monument for human good will:

*"Tree Mountain is the largest monument on earth that is international in scope, unparalleled in duration, and not dedicated to the human ego, but to benefit future generations with a meaningful legacy. (...) The project is innovative nationally and worldwide – the first such undertaking in human history. (...) It is designed to unite the human intellect with the majesty of nature."*¹⁰³

Most notable here is the familiar modernist differentiation between intelligent humanity and a distant, majestic nature, reproducing the Nature-Society divide even while claiming to overcome it. Far from evading the "human ego" and its political gesturing towards Nature, through this list of superlatives presented by the Finnish Ministry of the Environment and quoted in the *Weather Report* catalogue as well as on the project's website presentation, the work could well be understood as having been hijacked as an alibi ecological statement akin to carbon offset schemes, rather than as fundamental critique of the politics of resource-exploiting modern economies. Reclamation projects and artworks that are promoted in this way and do not reflect openly upon their possible ecopolitical instrumentalisation in my view might come quite close to lending themselves to greenwashing rhetorics. While presenting *Tree Mountain* both as a symbolic work of art and as a land reclamation project, Denes appears to have refrained from referring more directly to its site's problematic history and

¹⁰¹ "Virgin forest", In *Collins English Dictionary - Complete & Unabridged* (William Collins Sons, 2012), digital edition, accessed online on 26 Aug 2014, <http://www.collinsdictionary.com/dictionary/english/virgin-forest?showCookiePolicy=true>.

¹⁰² Lippard et al., *Weather Report: Art and Climate Change*, 42.

¹⁰³ Aira Kalela, Ministry of the Environment, Finland, 1996. Quoted in Lippard et al., *Weather Report: Art and Climate Change*, 42.

wider economic context, such as Finland's own involvement in mining and deforestation through its rare-earths-hungry technology industry, the continuous production of new reclamation areas through mining activity, carbon trading, or ecological degradation caused by tree farming. The rhetorics of the presentation in fact could imply that the symbolic plantation of 11.000 trees may be sufficient as a country's contribution to the fight against CO2 pollution, that the effects of ecologically disruptive behaviour can be healed and covered up by art, and that human creativity controls ecological processes. In practice, Denes' work effectively mitigates local environmental degradation such as soil erosion, but it doesn't lead the viewer further into a critical search for a deep cultural change. The pristine, powerful appearance of the project as living sculpture creates no mental or visual link between *Tree Mountain* and the forests replaced by biofuel plantations in South America or by fracking fields in Canada, and neither does it lead towards the social and economic conditions that cause deforestation. Although responding to the recent mining history of the site by "fixing" its negative effects, the work's aesthetic formality distracts from a translocal analysis of context beyond localised symbols, monuments, and metaphors. In 1992 it was the perfect project to adopt by a government to show off its greenness, because its potential political and environmentalist critique regarding questions of land use could be easily subordinated to its physical presence as environmental artwork. It could be argued that through its self-affirmative rhetorics and formally monumental, controlled beauty, *Tree Mountain* itself not only claims to offer the best possible response to the environmental concerns of its site but also regrettably shortcuts a deeper ecocritical discourse regarding its own possible political positioning and wider reaching agency. Aesthetically and rhetorically this has locked the work in an eco-art bubble – stunning and ecocritically less subversive and powerful than it could be.¹⁰⁴ Having said this, the most interesting and risky component of *Tree Mountain*, which has perhaps not been given enough attention yet, in my view is its temporal and social expansion – its ongoing tree custodianship, which formally though idealistically binds 11.000 people to the new forest, and to the fragile promise of looking after it. They might or might not, individually or collectively, in direct reference to *Tree Mountain* or not, produce and maintain the activist and inquisitive, translocally effective ecocritical agency which the project as a whole contains as a potentiality, but which its presentation, and the sculptural artwork alone, do not seem to bring forward in the same way.

¹⁰⁴ In comparison, Denes' well known *Wheatfield – A Confrontation* (1982) for example, in its different thematic and spatial context, has been very successful from an ecocritical point of view, as the siting of the work in downtown New York provoked a direct visual and discursive confrontation between the project's artistic and political statement and the urban economic situation it critically addressed.

Mary Miss, *Connect the Dots. Mapping the Highwater Hazards and History of Boulder* (2007)
Weather Report included ten site-specific works in outdoor locations throughout the city of Boulder, among them Mary Miss's *Connect the Dots*. In collaboration with hydrologist Steve Blake, Miss calculated the potential effect of a major flooding of Boulder Creek for the city, a catastrophic event that statistically has a one percent chance of occurring every 100 years.¹⁰⁵ Placing 300 blue disks on trees, pavements, and buildings at the exact height of the projected highwater mark, she created an imaginary waterline in the city's downtown open space. The project encouraged people to consider the impact of a seemingly unimaginable but scientifically not unlikely natural disaster upon their daily environment and their lives. *Connect the Dots* created a three-dimensional "walk-in" map, making an abstract scientific projection of future events experiential and public.



Figure 15: Mary Miss, *Connect the Dots. Mapping the Highwater Hazards and History of Boulder*, 2007, installation view.

Raising awareness of the volatility of water and the "constancy of change",¹⁰⁶ Miss's work, while being painstakingly place-specific, imaginatively linked the flood-risk situation of Boulder to experiences in places like New Orleans after Hurricane Katrina, and to the extreme weather and flooding scenarios hypothesised for a world affected by runaway climate change. The imaginary dotted water line, standing out in the daily experience of local places, appeared both concrete and abstract enough to form a lasting mental image in the viewer, which could virtually be applied to other locations as well, transcending the place-specificity of the original project. Mary Miss presents an artistic response to an aspect of potentiality in a concrete place that has not yet been experienced but appears as a lingering threat, both locally rooted and translocally expandable.

¹⁰⁵ Mary Miss Studio, *Connect the Dots. Mapping the Highwater Hazards and History of Boulder*, project brochure, 2007, accessed online on 08 Mar 2014, www.marymiss.com/products_images/pdf/project107.pdf.

¹⁰⁶ Mary Miss Studio, *Connect the Dots*.

The flooding event, which the project merely speculated upon, tragically happened in 2013 as a result of extremely heavy rainfall causing widespread flooding throughout Colorado. Boulder was the worst hit area and is still recovering from the damages.¹⁰⁷

The Yes Men, *Exxon Vivoleum* (2007)

The Yes Men are at first glance a surprising addition to the group of eco-artists assembled in *Weather Report* – but an important one, given their unique way to "focus attention on the dangers of economic policies that place the rights of capital before the needs of people and the environment."¹⁰⁸ Their practice is, according to themselves, deeply activist and more based in theatre than in visual art.¹⁰⁹ The Yes Men, Andy Bichlbaum and Mike Bonnano, take on fake identities, posing as members of organisations such as the National Petroleum Council (NPC), or of large and powerful corporations such as ExxonMobil. In their disguises they infiltrate conferences and business meetings and play pranks on the attendants, for example presenting sales products and business models to them that are in fact satirical comments on the questionable ethics and practices of commerce. While these "pirate" interventions in the world of big business have a distinctly humorous side, exposing the often absurd logic of profit-oriented entrepreneurship and the fallibility of people in powerful positions, they are at the same time addressing very dark realities of neoliberal decisionmaking mechanisms.

The work chosen for the *Weather Report* exhibition, *Exxon Vivoleum*, documents Bichlbaum's delivery of a keynote speech at GO-EXPO, Canada's largest oil business conference, in 2007. In his address to the 300 attendants, posing as a representative of the NPC, Bichlbaum "announced that current US and Canadian energy policies (...) are increasing the chances of huge global calamities", but "that in the worst-case scenario, the oil industry could 'keep fuel flowing' by transforming the billions of people who die into oil."¹¹⁰ During the speech, "commemorative candles" were passed around in the audience and lit, which were made of "Vivoleum", a fictive substance supposedly fabricated from the donated body of an equally fictive "Exxon janitor" who died after cleaning up a toxic spill. The video footage shows conference attendants contemplating the speaker's words and solemnly inspecting the "Vivoleum" candles, until the hoax was revealed and The Yes Men were removed from the premises. In *Exxon Vivoleum* Bichlbaum and Bonnano performed and caricatured the oil business' misogynist cynicism, and its lack of a sense of responsibility regarding climate change policies – in its own territory and using its own rhetorics and twisted logic.

¹⁰⁷ "2013 Colorado Floods", *Wikipedia*, accessed 08 Mar 2014, http://en.wikipedia.org/wiki/2013_Colorado_floods.

¹⁰⁸ Lippard et al., *Weather Report: Art and Climate Change*, 118.

¹⁰⁹ The Yes Men, artists' website, accessed online 08 Mar 2014, <http://theyesmen.org/faq>.

¹¹⁰ Lippard et al., *Weather Report: Art and Climate Change*, 118.



Figures 16 and 17: The Yes Men, *The Yes Men Fix the World*, 2009, documentary film, still images showing keynote speech hoax at the Gas and Oil Exposition conference, Calgary, Alberta, June 2007.

Beyond the direct climate change reference in *Exxon Vivoleum*, The Yes Men's practice as a whole presents an important and unique contribution to the *Weather Report* exhibition and its internal discourse of eco-art and place. The Yes Men's performative actions direct the audiences' attention away from their immediate everyday experience as "the local public" and offer them an inside view – however satirised – of the carefully guarded, exclusive, almost "virtual" (non)places where economic decisions with huge social and ecological consequences are made. Their temporary participation in these circles aims to expose the real existence of an undemocratic, oligarchic system of power, which operates completely detached from a sense of lived places but nevertheless strongly affects the local context in which the audience finds itself.

I have chosen these three works above as examples because they are representative for two main trajectories, and their overlaps, observable throughout the different artistic approaches in *Weather Report*, which enable an internal discourse of local place and ecology within the exhibition. One trajectory focuses on the local in an immersed, responsive, close-up exploration of environmental conditions, while the other aims to articulate and problematise the translocal, larger relational context of ecological crisis. This double-pointedness of the exhibition is already, perhaps even programmatically, laid out in its title, *Weather Report: Art and Climate Change: A report on the weather is a report on*

local conditions, while climate describes long-term atmospheric developments which are translocal and global and cause specific weather events to occur locally. This is a differentiation whose importance cannot be emphasised enough: It has become a mantra for climate scientists in recent years to stress the difference between weather and climate, as they are perpetually being confused, shaping opinions about climate change along the lines of "hey it's snowing, now what about that global warming nonsense".¹¹¹ In the context of eco-art, analysing more precisely the relationships between "weather" and "climate", between local experience and global awareness, might clarify which scale or lens width individual artistic approaches are using in their research, and whether these are adequate to the nature of the questions they investigate. A shift occurs between the local and the translocal in terms of scale but also much more complexly in terms of the qualitative parameters of their systemic organisation. To come to conclusions about global relationships from an investigation of the local is therefore as problematic and challenging as the other way around. What might benefit the local system might be disastrous for the global one, and inversely.

Weather Report. Art and Climate Change presents eco-art in a moment of searching for positions from which to address the culturally new phenomenon of climate change. The conceptually immensely relevant differentiation between weather and climate, local and translocal relationship patterns, seems to me to be a key point for ecocritical art to explore. Climate change and its context are decidedly not local, even though they have serious local effects. Eco-art's difficulties with the climate change topic and with emerging systemic views of ecology "without Nature" might therefore partly be read as a consequence of its long and thorough focus on environment as place, and on specific environmental concerns in the local site. This local itself does not become irrelevant through the parallel exploration of translocality occurring in the face of global crisis – but it becomes extended. In my view, an intensive place-based artistic investigation of social and ecological context in Lippard's sense can form the invaluable basis for understanding global systemic relationships by intimately knowing the behaviour of local agents, but also, and perhaps more importantly today, by intimately knowing the behaviour of translocal, virtual, and remote systemic agents, affecting multiple local places simultaneously.

¹¹¹ The term "climate change" is today preferred by most scientists because, in contrast to "global warming", it does not imply rising temperatures in every single place on Earth, but as a global average. Locally, a changing global climate and its weather patterns might have a cooling effect in some areas and a warming effect in others.

1.4.4 Eco-art's unrealised potential

Having looked at the examples above, and coming back to the question whether or not eco-art might be counterproductive to ecological thinking, a possible answer might be: Not categorically, but it is also by far not "pro-productive" enough. The closer look at recent eco-art in the context of ecocriticism leaves the impression that the programmatic expectations placed upon it, particularly in "climate change exhibitions" – to raise awareness, to provide new visions for a better future, and to also entertain aesthetically – can distract from a fundamental, self-critical artistic investigation of the conceptual challenges brought upon contemporary eco-art by ecocriticism and its new discourse of ecology. The critique of the idea of Nature, perhaps the most radical discussion in ecocriticism today, is attached to questions regarding the fundamental rethinking of subject-object relationships, of the individual, collectivity, agency, the sublime, democracy and conflict, the critique of capitalism, contingency, systemic relationships, modes of observation and participation, environment versus ecology, place and placelessness. Recent eco-art appears still shy to respond to this multitude of topical and returning questions for contemporary art, and to address them as positively challenging initiators of a necessary shift in its discourse of ecology. While concentrating on enhancing perception and awareness of environmental crisis and its symptoms, and perhaps preoccupied by the task of "teaching people how to see" and of showing them "how to do the right thing", eco-art and its curatorial presentation have been largely bypassing a self-reflective internal investigation of their own paradoxical position in the production of Nature images and aesthetic distance.

In her catalogue essay for *Weather Report* Stephanie Smith¹¹² critically observes that the representation of climate change topics in mass media (e.g. campaigns featuring celebrities, or Al Gore's climate change movie *An Inconvenient Truth*) can resemble "*green porn*': *sexy but superficial environmentalism that might help popularize issues like climate change and so lead to meaningful action, but might also merely offer a negligible hit of instant gratification.*¹¹³ Smith warns that this effect might also be an issue for eco-art:

"I worry a bit that those of us who are trying to address sustainability from within the visual arts are threading the same needle. If sustainability or climate change become art trends du jour, we risk providing a palliative to ourselves and to our audiences without contributing much to artistic production, nuanced debate, or lasting social change."¹¹⁴

¹¹² Stephanie Smith has curated exhibitions of environmentally engaged contemporary art, such as *Beyond Green: Toward a Sustainable Art*, Smart Museum of Art, University of Chicago, Oct 2005–Jan 2006.

¹¹³ Stephanie Smith, "Weather Systems: Questions about Art and Climate Change", In Lucy R. Lippard et al., *Weather Report: Art and Climate Change*, 14.

¹¹⁴ Smith, 14.

A popularising tendency could indeed be observed in a number of highly visible "climate change exhibitions" in the past years, such as *Unfold*, *EARTH*, or *Rethink*.¹¹⁵ On the other hand, more discursive exhibitions such as *Weather Report* have begun to reveal that artistically and ecocritically, contemporary eco-art stays below its considerable potential to discuss visions of ecology, complexity, and human-nonhuman relationships in times of global change. Conceptually and methodologically the conversations often struggle with climate change's most distinctive characteristics: its social and environmental multiperspectivity and inclusivity involving human and nonhuman agents, visible and invisible forces alike, translocally and transtemporally connected by the dynamics of growth and entropy.

As observed through the artistic examples in this subchapter, climate change as a cultural problem has been represented in contemporary art in a way that, from an ecocritical perspective, leaves many questions open regarding both the artworks' and their curatorial presentations' ecocritical agencies. A deeper critical discussion of contemporary eco-art's images of Nature, its conceptualisation of ecology versus environment, its employment of artistic methodologies such as fieldwork, and its consideration of translocal place-specificity seems necessary and promising. That there is a powerful ecocritical potential in recent eco-art becomes noticeable in the diversity of approaches searching for a grasp on the largely unknown and complex subject matter of ecological relationships; in the feeling of dissatisfaction with the subdued or simplified positions offered; in the conceptual frictions between artworks and curatorial subtexts; and in the emerging critical context shared with conceptual and public art, philosophy, ecocriticism, political activism, and science. As the examples in this chapter show, there is much to talk about, and much reason for being both optimistic and demanding in regard to ecocriticality in contemporary art.

1.5 Ecocriticism and its challenge for contemporary art

There are nine main points so far: 1. The current mainstream understanding of human-nature relationships is based on the modernist segregation of active subjects and passive objects, and leads to forms of consumptive behaviour that are exploitative and unsustainable. 2. This Nature-Society dualism selectively disregards aspects of complex systemic behaviour such as exponential growth, in order to keep operating as an open system based on the illusion of unlimited growth, and thereby hinders ecological thinking. 3. Art historically produces and underlines the (romantic) distance between Society and Nature through the means of aesthetics, and thus reinforces the subject-object division, even if, as in eco-art, the work intends to do the opposite. 4. Eco-art's evocation of environmental experience with the rhetorical tools of "ecomimesis" replaces Nature "over there" with an equally aestheticised and distant Environment. 5. Ambient environments weaken the

¹¹⁵ see footnote 49.

capacity to relate aesthetic experience to active personal behaviour change outside of this experience by locking viewers into a contemplative state. 6. Art is at the same time considered to be able to influence ways of seeing, to visualise, critique, and reinvent cultural concepts, and to have political and ecocritical agency. 7. In a time of global ecological crisis, when the re-evaluation of existing systems, and ecologically sensible behaviour changes are becoming paramount, maintaining the "illusory inconsequence"¹¹⁶ of art's production and representation of Nature or Environment seems outdated, politically reactionary, and irresponsible. 8. Eco-art needs to realise more critically its modernist legacy and its complicity with the production of Nature ideas that support established unsustainable economic systems. Ecocriticality questions contemporary eco-art's agency, its artistic and political position, and its aesthetic, methodological, and didactic approaches to ecological topics. 9. To expose itself to the conceptual and methodological challenge of ecocritical thinking and practice would seem to be the only way for eco-art to be progressive.

The limitations within eco-art's responses to climate change seem to be rooted in particular in its unresolved differentiation between a spatial-atmospherical description and evocation of environment and a structurally and politically defined exploration of ecology. As mentioned before, environment can be imagined and evoked as an encompassing but ontologically relatively unspecified container, while ecology can be understood as a precise system of functional cause-effect relationships, decisions, behaviours, and "infrastructures" which co-create and transform the physiognomy of environments. The ecocritical investigation of ecology, integrating the "metaphysical", "surface", and "realist" aspects of nature, and incorporating human and nonhuman, visible and invisible entities, requires new methodologies for artistic exploration, documentation, and representation that might be subversive, non-aesthetic, collaborative, activist, or scientific. The challenges and opportunities emerging from the critique of eco-art for ecocritical artistic practice and its exhibition will be explored further in chapter 3.

Having criticised the rather conservative position of eco-art from the perspective of ecocriticism, it has to be said that the "avantgarde" models of ecology such as Bruno Latour's "Political Ecology" or Timothy Morton's "Ecological Thought", are also afflicted with ideological attachments, blind spots, and unresolved questions, which might in return be in need of critique from the position of contemporary art. It now seems important to look at the conceptual, ethical, and practical problems that ecology models "without Nature" might pose for ecocriticism itself.

¹¹⁶ Stakemeier, 158.

2. Bruno Latour's Political Ecology and Timothy Morton's Ecological Thought: Two ecology models "without Nature"

Bruno Latour and Timothy Morton propose two models for ecology that radically replace what they identify as the modernist, romantic, and undemocratic Nature-Society dualism. The models are each presented as non-binary and yet non-monist concepts for human-nonhuman cohabitation, and fundamentally dismiss the idea of a distant, passive Nature separate from Society.¹¹⁷ Latour's and Morton's contributions are boldly interdisciplinary, experimental, and panoramic by methodology and outlook. They also, however, highlight the ethical difficulties emerging from the development of an egalitarian ecology concept, and the challenges of balancing political and cultural theory with the experience of practical ecology: Latour develops an extremely structured and bureaucratic constitutional process of "Political Ecology", while Morton's "Ecological Thought" replaces modernist structure and overview with an acceptance of unknowable interconnection and claustrophobic intimacy. Latour identifies fundamental shortcomings in a modernist worldview based on a linear progressive understanding of development and time, while Morton points towards the distancing and disempowering effects of Romanticism's evocation of a Nature "beyond". Both criticise Modernism and Romanticism for rigidly differentiating not only between Nature and Society, but also between (human) active subject and (non-human) passive object. In their view such a division hinders ecological thinking (Morton) and egalitarian, collective thinking (Latour), and is regarded as inherently hierarchical and undemocratic. My later discussion of the suggested correlation of ecology and democracy in their alternative models will, however, reveal a dark side of egalitarian ecological thinking that risks the loss of the Social.

The following critical look at Political Ecology and the Ecological Thought will identify lingering questions regarding the systemic agency of ecological entities, which are in my view of central importance for the investigation and representation of human-nonhuman relationships. These questions can inspire a discussion of creative and activist agency and its distribution, and are thereby critically relevant to ecological thinking and future-oriented decisionmaking in contemporary culture and politics. Referring back to Kate Soper's theory of three natures, as well as to Donella Meadows' systems thinking approach, this chapter will argue for an increased investigative emphasis on the systemic agency of "realist nature" when considering or constructing ecology models. The interconnection of Soper's three nature aspects is here thought to constitute "practical ecology": an occurring ecology that manifests itself as a participative, sited, contextual, and evolving system of human and nonhuman entities characterised by emergence, entropy, subjectivity, incompatibility, and limited lifespans. Against the observation of this practical ecology the "laboratory-based" concepts of Political Ecology and the Ecological Thought still need to be tested. My analysis

¹¹⁷ Bruno Latour, *Politics of Nature. How to bring the Sciences into Democracy* (Cambridge MA: Harvard University Press, 2004), first English edition.
Timothy Morton, *Ecology without Nature. Rethinking Environmental Aesthetics* (Cambridge MA: Harvard University Press, 2009), first Harvard Paperback edition.
Timothy Morton, *The Ecological Thought* (Cambridge MA: Harvard University Press, 2010).

and critique intends to pull them out of their metaphysical corner and to speculate upon the potential effects, opportunities and dangers of the new ecological thinking they promote. This is important, in my view, in order to avoid a modelised misrepresentation of ecological agents and the mere re-ideologisation of Ecology as a replacement for Nature, utilised as a political metaphor that doesn't quite fit the behavioural reality of the entities shaping actual ecological systems. In our time of acute ecological crisis and insecurity, advanced ecology models are desperately needed to help improving systemic thinking and to identify the "leverage points" at which currently problematic and unsustainable systems can be changed. These models however, as Meadows makes very clear, have to intimately know and correctly interpret and represent all their ecological entities and processes in their various aspects, in order to avoid that change is pushed in the wrong direction.

*"Leverage points are points of power."*¹¹⁸

*"Leverage points frequently are not intuitive. Or if they are, we too often use them backward, systematically worsening whatever problems we are trying to solve."*¹¹⁹

2.1 Critical discussion of Bruno Latour's Political Ecology

In *Politics of Nature* Bruno Latour develops an intricate constitutional system of organised coexistence, described as Political Ecology, which is built around the main philosophical claims of his work: the relational definition of actants, the critique of Modernism and its idea of a distant Nature, the rejection of modernist linear-progressive time, and the conceptualisation of the egalitarian human-nonhuman collective as early stage of a "good common world".¹²⁰ These propositions involve radical paradigm shifts regarding subject-object relations, fact-value distinctions, and Nature-Society dualism. The redefinitions which Latour suggests are profound, wide-reaching and provocative, and have been subject to discussion and criticism in sociology, natural sciences, art, political science, and philosophy.¹²¹

The discussion in this chapter intends to show that Latour's model considers ecology primarily through the "metaphysical" and "surface" aspects of nature and largely disregards the "realist" aspects expressed in ecological agents and processes. It is therefore unable to fully consider and integrate the requirements and behaviour of entities as they appear in practical ecology. Given the observational limitations of Latour's approach to ecology I am skeptical of his evaluation of the political agency of ecological entities, and of his refashioning of ecology as a fully democratic, fully political, fully conceptualisable

¹¹⁸ Meadows, *Thinking in Systems. A Primer* (Vermont: Chelsea Green Publishing, 2008), 145.

¹¹⁹ *ibid.*, 146.

¹²⁰ Bruno Latour, *Politics of Nature*, 239.

¹²¹ Critical points regarding Latour's work have been raised for example by the authors of *Bruno Latours Kollektive*. Georg Kneer, Markus Schroer, Erhard Schüttpeitz (editors), *Bruno Latours Kollektive* (Frankfurt: Suhrkamp, 2008).

constitution, a framing which appears more anthropocentric and "modernist" than the old division into Society and Nature. The argument focuses on four main concerns, addressing Political Ecology's new binary system of "collective" and "exterior reality", Latour's entirely relational definition of the actant, his concept of reversible nonmodern time, and Political Ecology's forced marriage of ecology and democracy.

2.1.1 Political Ecology's new binary system of "collective" and "exterior reality"

"Collective: To be distinguished first of all from society, a term that refers to a bad distribution of powers; it accumulates the old powers of nature and society in a single enclosure before it is differentiated once again into distinct powers (the power to take into account, the power to put in order, the power to follow up). In spite of its use in the singular, the term refers not to an already-established unit but to a procedure for collecting associations of humans and nonhumans."¹²²

The collective is of central importance in Latour's ecology model. It can be described as the producer, the vehicle and the representation of Political Ecology. Its product is *"nature according to due process"*,¹²³ describing a state of cohabitation reached by passing through several stages of assembly, evaluation, and exclusion. This process-nature is Latour's alternative to modernism's rigid Nature-Society dualism. In the latter, Nature is understood as an unquestionable "given", a static set of conditions marked by objectified, passive entities that remain unconsulted and silent. The collective on the other hand realises and performs the temporary unity of equally consulted human and nonhuman agents, following a strict *"set of procedures for exploring and gradually collecting this potential unification"*.¹²⁴ The first stage of the "due process", which Latour calls the stage of "perplexity", acknowledges that there are new and surprising applicants to the collective and reacts upon these unknown outsiders. The outside itself, the "exterior reality", keeps the collective debatable, attentive, and continually endangered by new propositions and applicants. In the second stage, called "consultation", the new applicants and the existing members of the collective share and debate their concerns. In the third and fourth stages, which Latour identifies as "hierarchy" and "institution", the "due process" eventually leads to an act of evaluation, prioritisation, and of inclusion or exclusion, temporarily establishing what or who can exist together inside the collective. At the same time it determines the content of the collective's exterior reality. For example, a democratic society (as existing "collective") that considers the construction of a new hydroelectric dam ("applicant") will go through a detailed process of consultation, evaluation, risk analysis, environmental impact assessment and so forth ("due process"), before finally deciding whether or not this dam and its attached advantages and disadvantages should become part of this society's life. If the dam is

¹²² Latour, *Politics of Nature*, 238.

¹²³ *ibid.*, 94.

¹²⁴ *ibid.*, 94.

included this means that other entities, those that are incompatible with the dam's characteristics and agency, are excluded by the same decision – for example the river system in its present form, the species and beings whose habitats are being destroyed, forms of local economy that become obsolete or transform with the socioeconomic developments set in motion by the dam and its wider infrastructure. They are externalised as "less important for the collective at this moment in time".

Importantly, for Latour the process of externalisation is an actively creative and conscious one – in contrast to the more common definition of positive or negative "externality" in economics, understanding it as an unintended byproduct of a decision.¹²⁵

*"(...) external nature is not a given, but rather the result of an explicit procedure of externalization (what one has decided not to take into account or what threatens the collective) (see also Enemy)."*¹²⁶

For Political Ecology's constitution to work as a dynamic model, the collective structurally needs an outside. Latour brings both into a "diplomatic" relationship by adding a loop function to the "due process" – the possibility of a re-application of excluded entities. The externalised entities, so Latour, do not disappear. They can and will become applicants to the collective again, restarting its constitution process by demanding to be taken into account. This is thought to prevent the collective from being completed too soon, or ever, and from becoming stagnant and oppressive. *"(They) are going to put the collective in danger, always provided that the power to take into account is sensitive and alert enough."*¹²⁷ For Latour, this sensitivity is a given. He also assumes that the externalised entities have enough strength to make themselves heard against a collective whose constitution process might have deselected the receptors required for remaining sensitive to these specific applicants. It might also have deselected the "spokespersons" of the excluded entities, which have a centrally important and also ambivalent function in Political Ecology, as I will discuss later. In short, everything that has been excluded from Latour's collective becomes part of an exterior reality which functions as a catalyst for continuous evolution, and as a waiting room for the applicants and re-applicants to the collective. It should be emphasised again that this exterior reality is created through the choices, hierarchisations, and the self-awareness of the collective itself – it is a product of the collective by non-selection, which brings us to the problem of internalisation of the exterior.

¹²⁵ "An externality is a positive or negative effect produced by an action without it being intentional on the part of the actor: for example factory production may also produce pollution (negative externality). Or, every person who connects to a network in order to talk to their friends, increases the total value of the network to everyone else (positive externality)." Robin Mackay, email to author, July 2014.

¹²⁶ Latour, *Politics of Nature*, 242.

¹²⁷ *ibid.*, 124–125.

The internalisation of exterior reality

Although Latour calls for the abolishment of dualism (between Society and Nature), he then introduces another inside-outside opposition, which now differentiates between a naturalised (institutionalised, established, normalised) state of collective coexistence, and the collectively excluded (abnormal, other) exterior reality of this assembly. The institutionalised collective presents a status quo, however temporary it is intended to be, in which discussions have been closed, compromises have been made, and the borders of the collective and its internal hierarchies have been established. This state becomes the "*self-evident, certain*" world of collective life in Political Ecology.¹²⁸ It seems to me that "*self-evident, certain*" means that a new "natural" state has been proposed for the collective, understood as normal – and that what does not belong to it must be deemed "unnatural", unnormal. This, I would argue, creates a reshuffled, fluid, but no less segregating dualism. As Latour himself declares, the "self-evident" as "natural" state is now located inside the human-nonhuman collective, it is socialised, while the "unnatural" is everything outside the collective: its externalised negation.¹²⁹

The dualistic relationship between collective and exterior could, however, also be interpreted as a self-referential unity which overcomes this dualism, if we assume the collective's full internalisation of exteriority as its inseparable shadow. The argument to be made here is that exterior reality, produced, perceived and described by the collective through its rejected applicants, cannot be completely externalised from the collective's awareness and memory. Although the members of the collective are shown by Latour as unsure and "perplexed" about what is stored in their exterior reality, it is hard to believe that they could be this ignorant: At the end of a lengthy, detailed consultation, evaluation, and exclusion process, erasing rejected entities from collective memory should be quite difficult. It could rather be expected that the negative imprint of the rejected lingers and potentially prejudices the collective's members against the re-application of these entities. From within the collective they are referred to as "the enemy",¹³⁰ (or the failure, the threat, the irrelevant, the strange). Latour maintains that exteriority is not a monolithic, passive outside, and that every appeal of externalised entities results in "*modifications in the list of entities present, new negotiations, and a new definition of the outside.*"¹³¹ The exterior is thus understood as entirely defined by the results of the collective's consultation process, which seems to suppose an absolute

¹²⁸ "(...) once the discussion is closed and a hierarchy established, the discussion must not be reopened, and one must be able to use the obvious presence of these states of the world as indisputable premises for all the reasoning to come. Without this requirement of institution, the discussion would never come to an end, and one would never succeed in knowing in what common, self-evident, certain world collective life ought to take place." Latour, *Politics of Nature*, 111.

¹²⁹ "Where does external nature now lie? It is right here: carefully naturalized, that is socialized right inside the expanding collective." Latour, *Politics of Nature*, 127.

¹³⁰ "Enemy: This word is used first to designate the exterior of the collective, which, unlike nature, has not the passive role of a given, but the active role of something that has been placed outside (...), that can put the interior of the collective in mortal danger, and, finally, something that may return at the following stage to demand its place as partner and ally." Latour, *Politics of Nature*, 240.

¹³¹ Latour, *Politics of Nature*, 125.

creative control of the collective over the exterior.¹³² The problem with Latour's collective-exterior relationship is then that it distorts the collective's idea of its outside: Externalisation creates an antipode to the collective that is merely a negative of the collective, and not equivalent to an actual and potential outside as it presents itself in practical ecology with all its unknown or unrecognised eventualities, contingencies, and entities. The collective can only imagine an exterior reality made of entities that it already knows because it has once rejected them. It can only see itself – as "us" and "not-us". The collective's internalisation of exterior reality, as it occurs in Political Ecology, thus does not solve the problem of dualism, but merely redraws the borders. The new "Other" now lies beyond those entities that have already a relationship with the collective, either by integration or exclusion.

Multiple collectives in practical ecology

The possibility of competing collectives and exteriorities is not explicitly considered by Latour in *Politics of Nature*. Nevertheless, his image of an always changing exterior reality, and the dynamic of his "due process" must allow for the existence of other, perhaps unknown assemblies: Only if there is more "out there" than the rejected entities of one specific collective, only if their sum is not identical with the whole of external reality, can the collective continuously be "perplexed" by genuinely new appellants. The activity of expelled actants in such an expanded, overlapping, multiple exteriority could then be imagined as not controllable by the collective. Free from the compromises of the collective interior, their encounters with entities bound to other exteriorities or collectives should be not only possible but very likely. Their unruly and obscure interrelationships, in my view, would describe and embody ecology in a more profound and complex way than Political Ecology's orderly procedures which focus on the development of one single, state-like, and essentially introverted collective. The existence of *simultaneous* collectives, rather than the existence of an exteriority as negative of the collective, as Latour describes it, puts the collective even more at risk: Rejected entities, instead of re-applying, or dissatisfied collective members, instead of compromising, could also simply apply to another collective, actively or passively resisting the first one.¹³³ The possibility of multiple collectives and withdrawing actants questions the straightforward workability of Latour's bureaucratic ecology model: It can be doubted for example that the process of consultation can still function with integrity when its members are not exclusively dependent on or interested in the common aims of one single collective, presented as the only vehicle towards the "good common world". This brings us to the question of how much the collective can really rely on the re-application of excluded actants that have lost their contexts and relations.

¹³² "The outside is no longer fixed, no longer inert; it is no longer either a reserve or a court of appeal or a dumping ground, but it is what has constituted the object of an explicit procedure of externalisation." Latour, *Politics of Nature*, 125.

¹³³ The construction of the Three Gorges Dam in China for example displaced over a million people, mostly without fair compensation. These externalised, unacknowledged lives and livelihoods might turn out to be lost to the "collective" of the Chinese state, because the individuals' will or ability to participate might have been irreparably harmed. Some might choose not to take part in the collective's project of a "good common world" any longer, and instead actively or passively resist it, for example by emigration.

2.1.2 The entirely relational definition of the actant

"Actor, actant: Actant is a term from semiotics covering both humans and nonhumans; an actor is any entity that modifies another entity in a trial; of actors it can only be said that they act; their competence is deduced from their performances; the action, in turn, is always recorded in the course of a trial and by an experimental protocol, elementary or not."¹³⁴

The rejection and re-application mechanism, sustaining Political Ecology's constitution and preventing it from becoming static, in my view cannot function with actants that disintegrate as soon as they lose their context and relations. I will argue that there would have to be an independent essence to actants that remains unrelational and unchanging, otherwise actants that have been excluded from the collective could never reapply, because they would merely cease to exist. Latour places great emphasis on the "haunting" of actants that are returning as applicants to the collective, and on their function in keeping it attentive, flexible and alert. Without this haunting, the collective process could easily lose its selfcriticality and momentum. Political Ecology's problem is now that it can have either entirely relational, essence-less, momentous actants which can be "disinvented" simply by expelling or ignoring them, or it can have the always returning, "undead", eternal actants. It cannot have both.

In practical ecology, both of these actant definitions potentially distort the process of gradually improving, diversifying and widening the collective into a "good common world", as Political Ecology intends to do: With entirely relationally defined actants the collective is under extremely high pressure to make the right decision whenever rejecting appellants, because it does so for good. This might paralyse it into not deciding anything at all, or it might result in a desperate consensusing and self-streamlining of its actants and appellants, trying to avoid being expelled and thereby extinguished. With "eternal" actants, on the other hand, a wild expelling of whatever and whoever might be going on, because the actants are believed to all come back anyway, if not as individuals then as representatives of their category. This provides the legitimisation for a collective's unsustainable trial-and-error policy:

"Unlike the other forms of historicity that preceded it, (political ecology) can confide the questions it has been unable to answer today to the restarting, tomorrow, of the process of composition. It need not claim that the things it does not know at time t are nonexistent, irrational, and definitively outdated, but only that they are provisionally excluded beings on the path toward appeal, and that it will find these beings in any event on its way to $t+1$, since it will never be rid of them."¹³⁵

¹³⁴ Latour, *Politics of Nature*, 237.

¹³⁵ *ibid.*, 195.

I would like to problematise the re-application procedure of "eternal" entities to the collective, as described in the above quotation, from a position of practical ecology and its processes. In my opinion Latour underestimates the possibility that the provisionally excluded beings at t will not be able to be around anymore at $t+1$, because their exclusion from a particular collective, and the favouring of other actants in the hierarchisation process, has meanwhile caused their irreversible transformation, disappearance or extinction. According to Latour himself, who proposes the definition of an actant by nothing else but its relations, the form in which entities could reapply to the collective could never be the same as before, because the constellation of the collective itself, and the experiential situation of the rejected entity in exterior reality will have moved on from t to $t+1$. The "second chance" is thus always going to be a different chance, or even a "no-more-chance".

My main ethical-political concern regarding the logic of entirely relational actants is the underlying idea of completely "disinventing" some undesirable actants through their erasure from the collective. Such a radical step is introduced by Latour as part of the initial constitution process of Political Ecology. Despite the claim that rejected entities will forever haunt the collective, Latour also implies that some actants (which in his definition include concepts and ideologies, such as modernism) can be disinvented:

"Political ecology does better than serve as successor to modernism, it disinvents modernism."¹³⁶

"Disinvented" in its strong sense would mean, in my understanding, that an entity is not merely rendered dysfunctional or obsolete but that it is erased from memory, extinguished as an actant and as a potential future re-applicant to the collective. In his argument for Political Ecology Latour repeatedly comes back to his fundamental proposition that modernism never happened, that it has merely been an illusion, and thus indirectly suggests that history can (or should) be rewritten.¹³⁷

Graham Harman describes nonmodernity as Latour's central claim:

*"When properly unwrapped, the title *We Have Never Been Modern* contains the whole of Latour's philosophy. We have never been modern because we have never really made a purifying split between humans and world. For this reason, we cannot say that time passes in terms of irreversible revolutions, but only that it whirls and eddies according to shifts in the networks of actants. An actant is an instantaneous event, but also a trajectory that outstrips any given instant."¹³⁸*

¹³⁶ Latour, *Politics of Nature*, 193.

¹³⁷ *ibid.*, 130, 183, 193.

¹³⁸ Graham Harman, *Prince of Networks. Bruno Latour and Metaphysics* (Melbourne: Re-press, 2009), 68.

How does this problematise Latour's entirely relational definition of actants in their ecologies? If modernism is "disinvented" as actant, would that not mean that all the actants, which according to Latour's definition existed only because of and in their relation to modernism, are equally "disinvented" along with their specific agencies, ontologies and interpretations referring to it (e.g. as a Bauhaus chair, as production line, as monoculture, as Cold War)? If that is not the case, and if they can still exist and act unchanged as "re-invented", now "nonmodern" actants, it could either prove that they have an individual essence and are thus not entirely relational but operate as independent entities, or it could prove that they can be replaced as a whole, including their relations to whatever system replaces modernism, without any resistance or noticeable change (and are thus essence-less). The neat replacement of modernism with Political Ecology without apparent consequences for the entities involved would then mean that Political Ecology is effectively – and quite disappointingly – not different from modernism at all. This would make Latour's efforts to radically overcome old paradigms and behavioural habits through their revolutionary replacement with a new model obsolete. Obviously, it cannot be what he had in mind with his (perhaps strategic) claim regarding the "disinvention" of specific actants, such as certain adverse concepts or ideas, and modernism in that sense doesn't disappear with Latour's dismissal of it but merely changes its name to "disinvented modernism".¹³⁹

Latour builds his collective constitution process on the existence of always returning actants, but at the same time these entities are conceptually (as relational actants) or politically (as disinvented or replaced actants – modernism, Nature, subjects and objects, etc) denied this possibility in his own philosophical project of Political Ecology. This paradoxical moment in *Politics of Nature* regarding the historical presence and disappearance of actants seems to be related to, and repeated in, his concept of reversible time.

2.1.3 Reversible nonmodern time

Latour's concept of reversible time further complicates the split between returning and relational actants. As I will argue, it compromises the "due process" of Political Ecology's evolving collectives, and creates problems for the idea and practice of ecological sustainability. Latour describes "nonmodern" time as nonlinear, nonprogressive, and reversible:

*"(...) instead of a fine laminary flow, we will most often get a turbulent flow of whirlpools and rapids. Time becomes reversible instead of irreversible."*¹⁴⁰

¹³⁹ Contrary to Latour's iconic statement "*We have never been modern.*" I would maintain that historically we have very much been modern because we have presented, defined, and still remember ourselves as such, and we let its momentum guide our decisions. Modernism, and modern humans, have been powerful actants, even though modernism's own ideals and promises have not all been fulfilled. Agents and the residue of their agency linger in the collective memory beyond their lifetime. Would one say that Nazism did not happen, and that no-one was ever a Nazi, because as political project it luckily didn't reach its own ultimate goal?

¹⁴⁰ Bruno Latour, *We Have Never Been Modern* (Cambridge MA: Harvard University Press, 1993), first English edition, 73.

I would first object that Latour refers here only to the agency and lifetime of "eternal" actants understood as categories or "species". His proposition of reversibility becomes more obviously problematic when it is applied to individual actants, who then appear as replaceable, nameless, and abstract representatives of their supposedly homogenous "species". The "eternal" actant is useful in a system that relies heavily on representation, to the point where the representation formats of categories become more important and durable than the individual actants who determine the fate of their categories. "Whale" is then not a particular whale with its individual life story, but becomes the mere concept of "whale". Despite Latour's dismissal of the hierarchical subject-object dichotomy, this is objectification par excellence. Political Ecology in that sense appears to treat entities as means of history or of a "due process", rather than as ends in themselves. Applied to practical ecology, this abstraction of entities, however, distorts the observation of ecological agency in systemic relationships: Categories ("species") of entities carry the history of evolution, but their continued endurance depends on the individuals' behaviour and adaptability in the practical ecological context they find themselves in. For the individual actant, time remains a series of "irreversible revolutions", and he/she/it acts accordingly. For the historical category of the same actant time may "whirl and eddy" without such a limited directionality and pressure. In practical ecology, categories and individuals operate on different temporal and spatial scales and according to distinct, even contradictory motivations, which are nevertheless dependent on each other: From an evolutionary perspective, the survival of the species trumps the survival of the individual being – but the will to survive in the Now, upon which the species' future existence depends, is bound to concrete individuals. Their "survival instincts", expressed as specifically applied ecological agency, might be so self-centered that they might disregard their negative effect on, for example, habitat conditions. Unsustainable behaviour is often a result of such future-blind survivalism. On the other hand, prioritising the average benefit for an entire category over an individual beings' rights and freedoms can be ethically problematic, even independently of how democratically such decisions are being made. A gap opens up here between the actant as momentous individual and the actant as representative of an eternal category.¹⁴¹ As a second objection, therefore, the question arises if these two characterisations of actants and the specific motivations shaping their ecological and social agency can be equally accommodated within the decision processes of Political Ecology as a supposed democracy of humans and nonhumans.

With the idea of "reversible time" *Politics of Nature* reveals a strongly metaphorical approach to ecology, which develops Political Ecology as a constructed, rather than observed concept. Its images, clashing with the requirements and properties of practical ecology, can however significantly distort this model itself: How Latour proceeds for example from "*turbulent flows, whirlpools and rapids*" to "*time becomes reversible*" is not entirely clear.¹⁴² Either the river

¹⁴¹ "An actant is an instantaneous event, but also a trajectory that outstrips any given instant." Harman, *Prince of Networks*, 68.

¹⁴² Bruno Latour, *We Have Never Been Modern*, 73.

metaphor is flawed, or reversibility means something else for him than "making something un-happened". The uneven development speeds and lifespans of entities might very well create turbulences, but they are not directionless. Even a turbulent river still eventually flows somewhere, and not back and forth indefinitely. Entropy moves entities irreversibly towards disintegration. They resist it and succumb to it, each at their own speed. The idea of modernism ignores entropy and death, but its products and resources, its buildings, artifacts, people and customs, cannot – they change and decay despite modernism's intentions. An ecological view of time would acknowledge that although the linear, ever-rising arrow of modern time is a myth, there is nevertheless a directional flow of time for each entity and each assembly of entities in practical ecology, which significantly shapes their systemic behaviour.¹⁴³ This can lead to the experience of acute time pressure in collective and individual decisionmaking processes – a powerful actant in itself.

Acting in time

The "due process" shaping Political Ecology's collective requires, "(...) *that we not bring an end to perplexity too abruptly, that we not unduly accelerate the consultation, that we not forget to look for compatibility with established propositions, and finally that we not register new states of the world without an explicit motivation.*"¹⁴⁴ Latour proposes "due process" as "the equivalent of a state of law"¹⁴⁵ under whose procedural progression all the extremely unsynchronised entities involved in the collective can supposedly be aligned. However, this results in a much less liberated and diversified assembly than Latour announces, because in practice the procedure is in conflict with the actants' widely diverging time regimes. Political Ecology's assembly of a "good common world" for all entities is not guaranteed by merely following a "due process" for its own sake, but it must achieve the "good common world" *in time* – in the lifetime of all entities. In our age of rapidly diminishing biodiversity the urgency of acting in time on behalf of endangered species for example should be very obvious. Likewise, climate change has already brought us dangerously close to several tipping points (such as melting permafrost soils) beyond which the agency of systemic feedback loops will not only make changes irreversible, but also accelerate them exponentially.¹⁴⁶ It seems to me that in Political Ecology there is no reference point for "in time", because the model fully relies on the problematic idea of reversibility and re-application. It is considering the temporal compatibility of entities only as enclosed in a never completable, utopian collective process,

¹⁴³ What the river metaphor shows quite well is that reversal and regression, just as advance and progression, are relative to the standpoint of a fixed observer. If the observer left the river bank and moved with the same speed as the water – in the same trajectory as another entity – he or she would notice a quite different version of advance or retreat, and would perhaps be incapable of judging whether they had progressed or regressed, advanced or reversed.

¹⁴⁴ Latour, *Politics of Nature*, 119.

¹⁴⁵ "Due process: The expression, borrowed from law and government, is intended to stress, through contrast, the undue, surreptitious character of the habitual arrangements of the old Regime. Contrary to the distinction between nature and society, between facts and values, the powers of representation of the collective make it necessary to proceed slowly, according to due process, by offering the production of the common world the equivalent of a state of law. The contrasting concepts *de facto* and *de jure* are combined here in a single formula." Latour, *Politics of Nature*, 240.

¹⁴⁶ Donella Meadows argues that an incomplete understanding of exponential growth and feedback loops in systems is a main reason for misjudging what it means to act "in time". Meadows, *Limits to Growth. The 30-Year Update*.

and is not primarily concerned about the immediate survival of individuals under present or future conditions. Furthermore, "due process" makes the collective extremely unspontaneous, unintuitive, and slow to react upon situations in practical ecology. Importantly, this slowness paradoxically also makes it impossible to fully reverse any collective decisions made in this way: Progressing through the stages of perplexity, consultation, institution, hierarchy, and re-application, every decision made by "due process" involves and changes the internal constellation of the collective. These changes each have consequences for a multitude of interrelated actants whose reactions again have consequences for other actants. Reversing a decision to exactly the same situation as before, for everyone, would require innumerable new "due processes" and is thus practically impossible. It can therefore be expected that Political Ecology's democratic consultation mechanism will fail many entities – by accidentally or deliberately failing to act on their behalf *in time*. By neglecting the acute time pressure brought about by entropy, Latour problematically excludes time itself as a powerful agent and as concern for actants in the collective. If Political Ecology is allowed to linger at a self-justifying, controlled "due process" speed, this will fit the negotiation speed of its juries and representatives but not the life times and rhythms of all represented individuals equally. This sabotages the aim of creating a "good common world" for all entities.¹⁴⁷

The concept of reversible time as retro-linear time (going back on the time arrow) compromises and endangers the ideal constitution of Political Ecology for a similar reason than the concept of the entirely relational actant (see 2.1.2): If the (human) "spokespersons", entrusted with the collective process on behalf of all entities, act in the belief that time is reversible, and that it is always possible to try again or to fully compensate the effects of wrong decisions, their representation and judgment of entities – their contribution to assembling and ordering the collective "according to due process" – is fundamentally distorted, because it neglects to acknowledge the strong agencies of entropy, emergence, and contingency within the asynchronous, interconnected development speeds and lifespans of entities and their collectives. By relying on the regulated revision of collectives according to "due process", Latour remains locked inside the rather modernist illusion of a controlled laboratory experiment, patiently awaiting the collective's regular progressive movement towards a "good common world" – a misunderstanding of the complex behaviour of dynamic and multiple systems. The potential consequences of Latour's reading of nonmodern time could be irreversible and devastating mistakes regarding the collective's exclusion or inclusion of entities: A riverbed can only be redirected once. Fossil fuels can only be burned once. A living being can only be killed once. Nuclear waste and plastic bags will still haunt the world long after its creators have disappeared.

¹⁴⁷"Common world (also good common world, cosmos, the best of worlds): The expression designates the provisional result of the progressive unification of external realities (for which we reserve the term "pluriverse"); the world, in the singular, is, precisely, not what is given, but what has to be obtained through due process." Latour, *Politics of Nature*, 239.

It seems to me that Political Ecology's reliance on the concepts of the relational actant and of reversible time, as shown, makes it questionable whether the model is able to represent ecological entities and their complex behaviour as comprehensively as it would be necessary for a thorough investigation of the practical ecology of systems, and of sustainability. Latour is positioned here quite in contrast to theories of dynamic systems as for example developed by Ilya Prigogine.

"In deterministic physics, all processes are time-reversible, meaning that they can proceed backward as well as forward through time. As Prigogine explains, determinism is fundamentally a denial of the arrow of time. With no arrow of time, there is no longer a privileged moment known as the "present," which follows a determined "past" and precedes an undetermined "future." All of time is simply given, with the future as determined or undetermined as the past. With irreversibility, the arrow of time is reintroduced to physics. Prigogine notes numerous examples of irreversibility, including diffusion, radioactive decay, solar radiation, weather and the emergence and evolution of life. Like weather systems, organisms are unstable systems existing far from thermodynamic equilibrium.¹⁴⁸"

The question arises now whether Latour's controversial definitions of relational actants and reversible time lead him to a conceptual correlation of ecology and democracy that is too simply constructed.

2.1.4 Political Ecology's forced marriage of ecology and democracy

Practical ecology can be regarded as an unpredictable and largely unknown dynamic system without a singular purpose. The majority of its living and nonliving entities does not appear able to adhere to the principles and self-control of democratic procedures. Manipulative and strategic behaviour, opportunism, deliberate non-cooperation of actants in collectives, their self-interestedness in defending their ecological existence, and their contingency complicate the notion of Political Ecology, understood as being selflessly democratic and therefore "good".

"Common good: The question of the common good or the good life is usually limited to the moral sphere, leaving aside the question of the common world that defines matters of concern; the Good and the True thus remain separate; here we are conflating the two expressions to speak of the good common world or cosmos."¹⁴⁹

Although Latour here aims to integrate "realist" aspects of ecology (the True), the formal structure of the collective "due process" does not seem to allow these aspects to speak for

¹⁴⁸ "Ilya Prigogine", *Wikipedia*, accessed on 28 Aug 2014, http://en.wikipedia.org/wiki/Ilya_Prigogine.

¹⁴⁹ Latour, *Politics of Nature*, 239.

themselves and as themselves: When trying to imagine Latour's "due process" in practice and considering the actants that make up our current world, one cannot avoid being skeptical if and how they could reach the sky-high moral standards necessary to project and realise the "good common world": For this lengthy consultation process Latour presupposes (or demands) self-discipline, non-hierarchical communication, eloquence, the ability to abstract, synthesise and project ideas and observations, sensitivity, tolerance, interdisciplinary and specialised knowledge, rationality, self-criticality, fairness. A blanket prescription of "democracy" cannot guarantee these qualities for all participants in ecological relationships. In Latour's conceptualisation of ecology as product of a discursive process consultancy, representation, and negotiation are therefore delegated to "spokespersons". This has been criticised for giving an undue advantage to the (human) representatives – entities with the capacity to speak about and for themselves and other entities.¹⁵⁰ The representation requires translation not only from one language into another, but from non-linguistic and non-communicative modes of existence into discursive modes that may be entirely alien and irrelevant to nonhuman ecological agents. Even exclusively human democratic and representational systems have an inherent problem of translation and translatability which leaves room for the ignorance, inertia, and self-interestedness of their spokespersons. How can the spokespersons in a human-nonhuman ecology, handling vastly diverging time scales and mutually exclusive demands from actants be expected to be "true" to all entities? And could a collective process not also entail unsentimental decisions which threaten or end the existence of minority actants in the name of the "common good"?¹⁵¹

Expertocracy

Latour's central claim of human-nonhuman equality creates practical problems for his ecology model which are not so obvious while considering the nonhuman actant as a technological device, or as entity confined to a laboratory set-up. These nonhuman actants are still human-made and largely human-controlled. The full force of nonhuman agency and "voice" is felt when we consider the "realist nature" aspect of the former Nature actants: most importantly, the majority of them is not in the habit of negotiating and associating with humans and their conceptual ideas and formalisms. They are not diplomatic. Supposedly on their behalf, spokespersons represent the Nature actants' concerns, which is thought to be sufficient to allow them to "co-design" the ethical, motivational frame for the "good common world" towards which the collective's progression is oriented. How the spokespersons become qualified for this representational work, and whether the procedure does full justice to the entities' concerns, remains vague in *Politics of Nature*. The problematic reliance on

¹⁵⁰ See for example: Gesa Lindeman, "Allons enfants et faits de la patrie... Über Latours Sozial- und Gesellschaftstheorie sowie seinen Beitrag zur Rettung der Welt", In Kneer et al., *Bruno Latours Kollektive*, 339–360.

¹⁵¹ The Belo Monte hydroelectric project in Brazil, and the related political protests, present a current graphic example of how the introduction of one new member to the collective, following a "democratic" decisionmaking process, leads to the cultural and physical extinction of living beings and collectives, in this case including several indigenous Amazonian communities. International Rivers, "Belo Monte Dam", webpage article, accessed on 26 Aug 2014, <http://www.internationalrivers.org/campaigns/belo-monte-dam>.

specialised and somewhat obscure human representatives has been strongly criticised by Gesa Lindemann as an "expertocracy":¹⁵²

*"Extending the actor status to include things is of lesser concern for Latour – rather, he proclaims an elitist expertocracy. The goal is not to value things equally as actors. Things are at best actors of a second order, whose status as actors can be bestowed or stripped away by experts (scientists and technicians). The political and moral problem lies, as will be demonstrated, in that now human non-experts can also be classified as actors of a second order. Latour suspends in his political model the modern achievement of universal human rights."*¹⁵³

In asserting its democratic ideal as a central motivational and structural factor Political Ecology in my view remains too ignorant of essential behavioural and communicative differences between ecological agents, of the possibility of their deliberate noncooperation and plain noncooperability, and of the ambivalent power of expert spokespersons. This distorts the understanding of ecology quite severely, bending it towards a decisively anthropocentric interpretation of its systemic processes and entities, which are posited as contributions to a political project.

Explicit motivation and progress

The question arises then why the ideal of democracy and of the "good common world" is so essential for Political Ecology that it eclipses the observation of nondemocratic processes in practical ecology. It seems to me that the reason lies in the collective's own dynamic, its spiral progression aspiring to a continuous and ambitious self-improvement: Latour's collective alternates between moments in which it is "closed" and stabilised, and moments of insecurity, reconsideration and change, in which its development continues. This development follows the goal of defining and realising the "common good" (what ought to be) for a "common world" (what is).¹⁵⁴ However, instead of constantly progressing and self-improving (an actually quite modernist projection of Latour, relying on the collective's superpower moral capabilities of making "correct" decisions), it could equally be possible that a collective erodes and regresses when regularly deconstructing and reassembling itself. This deliberate loss of certainty therefore requires as balancing element a very strong romantic faith in the project of a "good common world" and in the "due process" leading towards it, supposedly consulting all entities equally. Without a shared acceptance of the "good common world" as ultimate goal and "explicit motivation"¹⁵⁵ Political Ecology is not manageable. This is a serious problem, because how can such a goal be formulated democratically between entities whose ways of existence and definitions of "good" in many

¹⁵² Gesa Lindeman, "Allons enfants et faits de la patrie... Über Latours Sozial- und Gesellschaftstheorie sowie seinen Beitrag zur Rettung der Welt", In Kneer et al., *Bruno Latours Kollektive*, 346.

¹⁵³ *ibid.*, 346. (translation mine)

¹⁵⁴ "I maintain that I am replacing the difference between the common world and the common good with the simple difference between stopping and continuing the movement of the progressive composition of the good common world (according to the definition given for politics)." Latour, *Politics of Nature*, 122.

¹⁵⁵ *ibid.*, 119.

cases strictly exclude each other? After all, the plenum also supposedly includes the voices of the most self-interested and uncompromising entities such as viruses, hurricanes, missiles, oil platforms, and ravenous polar bears. Do you choose the "good world" of the lion or of the antelope? Political Ecology assumes that the interest in a "good common world" is universal and that the process of striving for it suffices as "explicit motivation".¹⁵⁶ It accepts (or totally ignores) that the practical incompatibility of specific entity combinations necessarily means fighting to the death or gradually devouring each other, rather than civilised coexistence and debate. The "good common world", truly democratically produced by all existing entities, could turn out to be rather uncomfortable for humans. Thus it is tempting to "undemocratically" implement it beforehand as a utopian aim based on selected human standards, building the entire political ecology process on exactly the "givenness" of values and facts that Latour criticises.

Self-fortification and change

The selective system of the collective maintains a difficult balance between self-improvement and self-fortification. Latour's unquestioned faith in the collective members' shared interest in the same "good common world" seems to disregard the absolute will for political power and sustained dominance of some ecological agents over others, who develop very active strategies to stay in control of the collective, incorporating and neutralising potential applicants and dissidents by misusing the "fair" consultation mechanisms of "due process". The strategic fortification of institutionalised collectives against future destabilisation by rejected entities can be cleverly set up and built into the operational structures of the current collective: In an oppressive regime, any opening of the collective to potentially disruptive propositions automatically and structurally threatens the legitimisation of all members of the collective, and the existence of the collective itself. The fabrication of such existential co-dependencies naturalises the collective in its supposedly self-evident shape and makes it appear unquestionable. An example could be capitalist systems and their structural dependence on the idea of growth as the basis of a good common world. This fantasy relies on the (deliberately upheld) wrong assumption that natural resources are endless, as well as on the exploitation of semi-externalised entities who can contribute to the growth, but will receive none of its benefits. Economic growth as an established member of a capitalist system is impossible to extract without destroying the system's collective in its current organisation. None of the other members of the collective could initially have an interest in such violent change – at least not until an alternative scenario is offered which destabilises its dominant actant or changes its explicit motivation.¹⁵⁷

¹⁵⁶ "The question of what ought to be (...) is not a moment in the process; rather it is coextensive with the entire process (...)." Latour, *Politics of Nature*, 125.

¹⁵⁷ The behaviour of established powerful members of existing economic systems, and their essential inability to contribute to the systemic changes needed today without destroying themselves in the process, is investigated in Naomi Klein's most recent book *This Changes Everything. Capitalism vs. the Climate* (New York: Simon and Schuster, 2014).

Despite the benefits of development, a certain reluctance to quick change is important for the collective's maturity development: Maturity becomes impossible if the collective is thrown into complete reconsideration every single time there is a new applicant. Well-functioning alliances that are beneficial to all would have to restart at the bottom, just as any destructive elements that one might want to get rid of.¹⁵⁸ Self-fortification therefore explains a conservative, and also potentially aggressive momentum of collectives which Latour largely neglects: The established members' fear of losing their place in a collective that has reached an ideal (or at least bearable) compromise might severely corrupt their motivation for self-improvement. Depending on the preferences of its most powerful members the model collective could easily turn into a nightmarish totalitarian state that might be very comfortable for some, but an inescapable hell for others. In its corrupted version, the abstract formalism of the legitimising "due process" can cover up perverted consultation procedures in which nonconform, critical or otherwise "inappropriate" entities are branded counterproductive to the "common good" and expelled. Terror regimes "succeed" with perfected strategies of naturalised and rationalised exclusion from their "pure" collectives, implemented through the detachment of such violating actions from public consciousness, or their official implementation and thus de-tabooisation (making them part of a "due process"). Witch-hunting and genocide might come to mind as examples from dark times. Such dystopian outcomes are obviously the opposite of what Latour intends with the process of collecting a "good common world", but unfortunately it has to be said that his model constitution of Political Ecology, held up against an equal consideration of *all* entities' potential and actual agencies in practical ecology, does not manage to install democracy and the "common good" as entirely certain and automatically consensual motivations for the organisation of ecological coexistence.¹⁵⁹

2.1.5 Political Ecology "in theory", and practical ecology

Despite Latour's explicit rejection of modernism's images of progress, the collection process of Political Ecology itself contains a strong progressive trajectory. It replaces not the modernist idea of utopia itself but merely the appearance and feeling of this utopia:¹⁶⁰

"Whereas the moderns always went from the confused to the clear, from the mixed to the simple, from the archaic to the objective, and since they were thus always climbing the stairway of progress, we too are going to progress, but by always descending along a path that is, however, not the path of decadence: we shall

¹⁵⁸ Continuity, slow growth, and endurance are important factors in ecology. In ecosystems, a climax state is a point of temporary equilibrium and stasis. Participants of such a climax state would never deliberately destabilise their agreeable position. Without external intervention, a mistake must be made, so to speak, or a mutation must occur to re-mobilise the collective. Stasis, and the simple continuation of formerly unproblematic processes beyond a tipping point can however also lead to sudden collapse and change.

¹⁵⁹ This has also been argued by Keller and Lau: Reiner Keller and Christoph Lau, "Bruno Latour und die Grenzen der Gesellschaft", In Kneer et al., *Bruno Latours Kollektive*, 306–338.

¹⁶⁰ "We have changed futures at the same time as we changed exteriors (...)" Latour, *Politics of Nature*, 191.

*always go from the mixed to the still more mixed, from the complicated to the still more complicated, from the explicit to the implicit. We no longer expect from the future that it will emancipate us from all our attachments; on the contrary, we expect that it will attach us with tighter bonds to more numerous crowds of aliens who have become full-fledged members of the collective that is in the process of being formed."*¹⁶¹

Latour uses here the same "before-after" time concept as the moderns, and the same promise of progress, perhaps eager to demonstrate the superiority of his model for the cosmos over the modernist version. This reliance on progress or procedure is also manifested in Latour's strong emphasis on "due process" according to which the "good common world" of Political Ecology is to be constructed. It seems to me that the difference between the two ideas of progress lies merely in the characteristics of their projections for an ideal world: For the moderns it is a minimalist heaven of absolute unity, calculation, control and oversight, arrived at through the work of an elite that knows things homogeneously; for Latour and the nonmoderns, it is a complex inclusivity and happy discourse in a multitude of voices, a vibrant cohabitation of everything, arrived at through the collective activity of the public, or its committee of representatives, that knows things heterogeneously.

Problematically however, Political Ecology seems to describe merely a controlled, well-behaved and simplified laboratory situation, rather than the diversely motivated relationships forming practical ecology. It relies heavily upon the image of a polite applicant knocking at the door of an orderly city. When speaking of nonhuman applicants, such as hurricanes or viruses, this image is very misleading, as is the idea of negotiating with a hurricane itself. Latour's belief in the integrity and adequacy of the democratic procedures in his model leads him to neglect a consideration of violent conflict, ignorance, miscommunication, and deliberate non-cooperation as equal actants in their own right.¹⁶² He doesn't offer a convincing explanation why human actors should start thinking and operating in a human-nonhuman ecological continuum in which they are no longer special – but this is not necessary because the human privilege in the representative democracy of Political Ecology remains unchallenged. Having spectacularly opened up possibilities to think outside the old categories of Nature/Society, subjects/objects, facts/values, Latour seems to fall back on a tried-and-tested (and often failing) political model in only slightly modified shape – mainly renaming its components. But he cannot replace the characteristics and qualities of the participating actants and appellants in practical ecology. They remain as self-interested, uncooperative and mortal as before. Political Ecology existentially depends on collaboration and communication, but not all actants in practical ecology have the capacity to even consider this. In my view, ignorance of this political one-way-relationship dangerously distorts the understanding of ecology.

¹⁶¹ Latour, *Politics of Nature*, 191.

¹⁶² Donella Meadows on the other hand has integrated the possibility of such destructive forces in her concept of "stocks and flows", analysing the complex behaviour of dynamic systems. Meadows, *Thinking in Systems*.

Representative Political Ecology, idealistically understood as democratic process, can thus never refer to more than the metaphysical aspect of ecological complexity, namely the human way of making sense of it, influenced by the utopian imagination of a still-to-come, not an already occurring, ecological coexistence. Its procedures neglect entropy and the irreversibility of processes and decisions in practical ecology, as well as the ecological involvement of nondemocratic motivations as actants in their own right. It thereby remains unable to provide a comprehensive understanding of or constructive response to systemic agency and behaviour in practical ecology.

Despite all the critical points made, *Politics of Nature* offers a groundbreaking contribution to the discourse of ecology by provocatively experimenting with a deep questioning of human-nonhuman relationships, human identity and agency, on a multitude of ethical, political and scientific levels. It brings the discourse of ecology into the political arena, with at times quite frightening insights, and challenges a complacent society to pick up this "gauntlet" and take it as a starting point for reconsidering old ideologies which have led to very destructive habits. Considering Latour's Political Ecology in context with the agonisingly contradictory debates regarding appropriate response strategies to ecological crisis, his model paradoxically seems to describe a decisionmaking system that does not yet exist and that we should strive for, and at the same time already portrays our current grappling attempts to come to terms with an explosion of simultaneous propositions and concerns. Political Ecology, mirrored by actuality, presents both the utopia and the dystopia of an always too slow spiraling of "due processes", conferences, negotiations and broken promises, of trial-and-error, bureaucratic hyperactivity and individual inertia. Against political, social and ecological actuality, *Politics of Nature* is describing the cause and the possible solution of our problem simultaneously.

2.2 Critical discussion of Timothy Morton's Ecological Thought

Timothy Morton sets out to rethink ecology as an inclusive, immersive, nonhierarchical coexistence that is imaginable without the paralysing notion of a passive Nature. His ecology model, introduced in *Ecology without Nature* and developed further in *The Ecological Thought*,¹⁶³ rests on four main paradigms: Firstly, ecology can be understood as a "mesh" of temporary encounters of entities that remain "strange strangers" to each other. These strangers do not merge, and can therefore always be perceived as Other, but they constitute each other's environment and are thereby co-dependent. Secondly, there is no independent essence to things and beings, as everything in the "mesh" is intimately, environmentally interconnected – nothing exists all by itself. Morton maintains that the realisation of this simple statement is bound to fundamentally transform the way we think and construct the

¹⁶³ Timothy Morton, *The Ecological Thought* (Cambridge MA: Harvard University Press, 2010). Timothy Morton, *Ecology without Nature. Rethinking Environmental Aesthetics* (Cambridge MA: Harvard University Press, 2009).

world and our own position in it. Thirdly, the Ecological Thought is regarded as modern and future oriented. Abolishing the idea of Nature for the sake of an ecological "mesh" is thought to improve the modern project of "thinking big", overcoming its artificial divide between Nature and Society. Morton's position is thus, in contrast to Latour's, not based on a general critique of modernist thought. Finally, the "mesh" of ecology is described as inescapable, there is no exterior to it. Therefore the experience of ecological intimacy is also pictured as a "dark" and possibly uncomfortable, claustrophobic experience.

My critique of the Ecological Thought will concentrate on four main points: the aestheticisation of "strange strangers" and its paradoxically distancing effect within the "mesh" of ecology, Morton's romantic notion of inescapable "dark ecology" and its consequences for participative agency, the blurring of evolution and ecosystem development in Morton's reading of Darwin, and the problematic neglect of the Social in a "democracy without pity".

2.2.1 The aestheticisation of "strange strangers" in the "mesh" of ecology

*"The ecological thought imagines interconnectedness, which I call the mesh. (...) The mesh of interconnected things is vast, perhaps immeasurably so."*¹⁶⁴

*"There would be no mesh if there were no strange strangers. The mesh isn't a background against which the strange stranger appears. It is the entanglement of all strangers."*¹⁶⁵

The basis of Morton's ecology model is a flexible, vast, relational non-structure called the "mesh". It is formed and modified exclusively by the encounters of interrelated entities which he describes as "strange strangers". These appear to be less approachable than Latour's relational actants – unlike them, "strange strangers" do not negotiate. They cannot be rejected, or chosen and assimilated through consultation and compromise but can only be accepted – or "loved", as Morton suggests.¹⁶⁶ Despite their intimate interconnection their development is not mainly dependent on consequential relations with other strangers but paradoxically appears to happen independently and obscurely by way of spontaneous change. "Strange strangers", in Morton's view, are thereby volatile and largely unknowable:

*"We can't really know who is at the junctions of the mesh before we meet them. Even when we meet them, they are liable to change before our eyes, and our view of them is also liable. These beings are the strange stranger."*¹⁶⁷

¹⁶⁴ Morton, *The Ecological Thought*, 15.

¹⁶⁵ *ibid.*, 47.

¹⁶⁶ *ibid.*, 77.

¹⁶⁷ *ibid.*, 40.

*"(...) we might never know them fully – and we would never know whether we had exhausted our getting-to-know process. We wouldn't know what we didn't know about them."*¹⁶⁸

While including living as well as nonliving beings, on closer observation "strange strangers" differ significantly from Latour's very wide definition of the actant, which includes immaterial and abstract entities such as "exchange rate" or "fishing quota". The examples chosen by Morton focus almost exclusively on the coexistence of individual beings and their immediate surroundings. Drawing many of his examples from Charles Darwin's observations of co-adaptation between animals, or animals and their habitat, he seems to limit the "strange stranger" to physical beings and local environments, ignoring agents such as concepts, events, and forces.

*"All life forms are the mesh, and so are all dead ones, as are their habitats, which are also made up of living and nonliving beings."*¹⁶⁹

This problematically neglects the often obscure, subversive, and unmeasurable ecological agencies of abstract and immaterial entities. As a consequence, the motivational quality of the specific relations between "strange strangers", and of the processes that shape them, remains "unknowable" and beyond any other agent's influence. In Morton's model relations are described as fleeting encounters rather than as reactions leading to further reactions, steered by a multitude of forces and motivations. However, when thinking of Meadows' systems theory in this context, it seems that without the consideration of relational processes or "flows" as agents themselves the understanding of dynamic systems such as ecology remains incomplete. While in Latour's model the collective's inhabitants go to great lengths to actively "consult" and to get to know the "perplexing" actants applying for membership, in Morton's ecology "strange strangers" are perceived passively, on a level of (aesthetic) contemplation, in reaction to the experience that *"getting to know them only makes them stranger"*.¹⁷⁰ The declaration of entities as "strange" and inapproachable here appears to go hand in hand with the re-establishment of a romantic aesthetic distance, which isolates the perceiving entity within its ambient experience of an environment of unspecified, "strange" other entities. Although Morton asserts that "we ourselves" are also strange, and thus not distanced from the environmental mesh of surrounding strangers, I would argue that the perceptive mode of a subject that is able to judge someone or something as "strange" contradicts this claim. Highlighting the unfamiliarity of the mesh's entities as an element of wonder and sublime elusiveness, the notion of "strangeness" itself seems to have no constructive function in ecological thinking except to identify oneself as "not-strange", alone

¹⁶⁸ Morton, *The Ecological Thought*, 42.

¹⁶⁹ *ibid.*, 27.

¹⁷⁰ *ibid.*, 15.

within an environment of strangers, which is a distinctly romantic perspective.¹⁷¹ Here Morton's own critique of eco-romanticism, issued previously in *Ecology without Nature*, seems entirely forgotten. At the same time, the enveloping presence of the "mesh", perceived as a collective *event* rather than process, and as a quasi "natural" happenstance, is in my view the result of a strongly ambient rendering: As the Ecological Thought submits all entities to the concept of the mesh, the moment of their "enmeshment" is a moment of abstraction, aestheticisation, and de-individualisation, with the exception of the perceiving subject around which this environment is wrapped. The conceptualisation of the "mesh" is thereby Morton's very own ecomimetic moment.¹⁷²

The description of ecological entities as "strange strangers" produces and reflects an inherent aesthetic distance between entities, and thus does not overcome the dualism which Morton criticises in the modernist Nature-Society relationship, but merely replaces it with a more individualistic Environment-Self dualism, in which all strangers become environment to a centrally immersed but introverted self. Morton describes the unknowability of entities as an essential condition, but I would like to contest this view. It seems that "strangeness" is employed by Morton to handle what he identifies as the paradoxical distance between ultra-interconnected entities in the mesh: "*Interconnection implies separateness and difference.*"¹⁷³ However, it seems to me that this difference is not intrinsic and essential, but rather defined by "looking" ("*Each entity in the mesh looks strange.*"¹⁷⁴). It is the result of an individual aesthetic comparison between a "not-strange" self and the "strange strangers" in its encountered environment, and thus based on the subject's own characteristics and paradigms against which strangeness is measured. "Strangeness" seems to become the only qualitative differentiation that this lonely, immersed subject is able to make. This view of the other stops at the surface of entities, neither considering nor believing in a deeper essence, value, or agency. The actual "strange" entity and its potentialities, seem to be posited as inaccessible or in their specificity even irrelevant for the "non-strange" observer.¹⁷⁵ This perceived "strangeness" could equally be understood as an effect of the profound self-interestedness of the subject, and of a systematic construction of otherness which indirectly aims to maintain the status of the subject as "special". It seems to me that the "strange strangers" in Morton's "mesh" are profoundly isolated and withdrawn from each other because they are created as such *rhetorically*. Realising and naming the other as "strange" is an act of aesthetic and rhetoric institutionalisation which actively prevents attempts to familiarise and "un-strange" the other, following up on a first encounter.

¹⁷¹ Morton's key image for this experience is based on an excerpt from *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge. It is a potent image which he repeatedly quotes in his work, and it illustrates well what Morton means by ecological intimacy, environment, and strangeness. See 2.2.4 and Appendix.

¹⁷² *The Ecological Thought* also contains rather poetic passages of "immersive" nature experience, for example the author's own description of the milky way as seen from the Himalayan plateau (Morton, *The Ecological Thought*, 26). It is written exactly as the ecorhapsodic "nature writing" which Morton criticises as aesthetically distancing in his earlier book, *Ecology without Nature*. See 1.3.1.

¹⁷³ Morton, *The Ecological Thought*, 47.

¹⁷⁴ *ibid*, 15. (emphasis mine)

¹⁷⁵ It is not clear whether the same entity can be considered "strange" in different ways by different other entities, and whether this makes them a new "stranger" or not.

Problematically therefore, the "strange stranger" is indeed only what the observer wants (or is able) to see of it, with himself and his experiences projected onto the other. This echoes the relationship between collective and exterior reality in Latour's Political Ecology. *"The strange stranger (...) is something or someone whose existence we cannot anticipate."*¹⁷⁶ The distanced surface fixation on "strangeness" can only provide a superficial impression of potential ecological agency because it remains ignorant (and a stranger to) the "realist nature" aspect of individual entities: volatile and long-term dynamics which can affect and alter entities from within and cause them to act spontaneously and surprisingly. In practical ecology, where participative relationships outweigh contemplative or aesthetic relationships, it would seem, however, very important to understand these deeper behavioural motivations of an entity shaping its full potential agency (and potential hostility).

Defined by an aesthetic evaluation, strangers always will remain strange – but also somewhat entertaining: *"The encounter with the strange stranger breaks the cycle of sameness."*¹⁷⁷ Once again, the experience of strangeness appears to serve a continued romantic consumerism in "idyllic inconsequence", which has been identified by Morton himself as a main obstacle for the development of ecological thinking and acting. For Morton, aesthetic distancing is exactly not what the Ecological Thought is supposed to do,¹⁷⁸ but he fails to recognise the rhetorical trap he has built himself with the "strange stranger": The concept relies on the central importance of a subjective entity perceiving and defining the "strangeness" of others in an act of very straightforward evaluation and aestheticisation.

Besides distorting the view upon ecological agents and their potentialities, the aesthetic distance upheld between "strange strangers" excuses a withdrawal from constructive response and responsibility towards the relational structure of the "mesh". The mesh is posited as an automatic result of all strangers' collective "pointless" existence, rather than as a result of their strategic, future-oriented actions. This understanding derives from Morton's references to Charles Darwin's theory of evolution, as I will show later. Its inherent passivity encourages entities to maintain an "aesthetic state" of ambient dwelling in the present, and supports the cultivation of an "ambient" environmental sentiment rather than future oriented eco-systemic thinking and doing. I would argue that the underestimation of the potentially decisive agency of "not-doing", in particular, can have an erosive effect upon individual and collective agency. Problematically in the context of acute ecological crisis, it allows for the deterioration of the idea of a Social to be looked after, and of the capability to act with foresight, beyond intuitive reactions, in the direction of social and environmental sustainability and justice.

¹⁷⁶ Morton, *The Ecological Thought*, 42.

¹⁷⁷ *ibid.*, 47.

¹⁷⁸ *"Although the ecological thought is a form of reductionism, it must be personal, since it refrains from adopting a clinical, intellectual, or aesthetic (sadistic) distance."* *ibid.*, 77.

Observational distance within the "mesh" poses a problem for active engagement, but on the other hand vast ecological systems cannot be fully perceived, understood, and sustainably managed from a position of ultimate participatory immediacy (and self-referentiality) either. "Strangeness" could thus be employed as an important mechanism for increasing perceptive openness, enabling entities to see beyond their own toes. However, this requires not only the acceptance of (initial) strangeness, but also the strong motivation to overcome it by learning about the strange other as much as possible. In Morton's description of an always mysterious, unreachable otherness, however, "strangeness" appears to be at risk of producing a melancholic state that is "darkly" enjoyable, and that provides a convenient excuse for evading the challenges of actual encounters in practical ecology, indulging instead in slightly narcissistic romantic introversion. The implied system-immanent passivity towards entities other than oneself avoids taking responsibility for present and future encounters and is thereby highly problematic for the development of active ecological and political agency and responsibility in systems.

2.2.2 "Dark ecology", inescapability, and the loss of agency

While Latour is concerned with the procedural, almost rhythmic negotiations between a collective interiority and an unordered, unknown exteriority, Morton explores the relationship between environment and individual beings. The mesh of strange strangers is fundamentally inescapable, there is no exterior to it. Therefore the experience of ecological intimacy is also described as a dark and possibly uncomfortable, claustrophobic experience:

*"The ecological thought is intrinsically dark, mysterious and open (...). It is realistic, depressing, intimate, and alive and ironic all at the same time."*¹⁷⁹

The individual seems to be left drifting in a mass of uncontrollable and unknowable entities which constitute its environment. Importantly, it is surrounded but not fully belonging. This mesh of entities, if we compare it to Latour's political assemblies, comes about in a much more random way – it happens by happenstance, rather than by laborious construction. It also presents itself as one single vast collection without an exterior – similar to the projected "common world" of Latour's Political Ecology. According to Morton's thoughts on "dark ecology", it is however not necessarily a *good* common world, and there is no possibility to select or deselect its inhabitants. A potential outside of this mesh is impossible to consider, as no clear borders can be identified: *"At what point do we stop, if at all, drawing the line between environment and non-environment: The atmosphere? Earth's gravitational field? Earth's magnetic field, without which everything would be scorched by solar winds?"*¹⁸⁰

¹⁷⁹ Morton, *The Ecological Thought*, 16.

¹⁸⁰ *ibid.*, 10.

For Morton, ecological thinking does not aim to produce a positivist and upbeat rhetoric of harmonious environmentalism, but, in a slightly contradictory way, acknowledges and perhaps even celebrates also the negativity, the uncertainty, the uncanny, and the melancholic within the cohabitative mesh.

"The ecological thought concerns itself with personhood, for want of a better word. Up close, the ecological thought has to do with warmth and tenderness; hospitality, wonder and love; vulnerability and responsibility."¹⁸¹

The quote above however reveals Morton's problematic underestimation of incompatibility: Practical ecology demands a positioning of each entity towards the immediate others in a way that is situation-specifically appropriate and beneficial for this "subject entity" in this system in the short and long term. Considering the wildly diverse agents in practical ecology, this demand cannot always translate into warmth and tenderness, or into unlimited hospitality towards everything including flu viruses, bush fires, and aluminium factories. Morton's emphasis on personhood and positive intimate feelings here neglects, or downplays, the impulsive and aggressive politics of conflict and competition as active agents in ecology.

Ecology, the involuntary being with others, is imagined as an inescapable status quo, and appears in its very close intimacy as both sheltering and smothering, both as a comfort and as a constant threat. It is surprising therefore, that this explicit interest in the "dark" side of ecology does not lead Morton to a much more detailed discussion of conflict and incompatibility. Rather, the existential seriousness of this "darkness" is unhinged, because Morton provides an opportunity for its aesthetic experience, whether pleasurable or not. By thinking the Ecological Thought, the darkness and horror of ecological existence can be appreciated from a reflective distance as "noir" involvement.¹⁸² Ecological existence is thereby aesthetically framed as something more than a consciousnessless, mindless toiling and struggling in and among everything there is – it is made sublime.

"Isn't this the essence of ecological awareness? There is something sinister about discovering the mesh. It's as if there is something else – someone else even – but the more we look, the less sure we are. It's uncanny: there is something there, and there isn't."¹⁸³

With the concepts of strangeness and of darkness, the Ecological Thought resets the distanced witness-observer perspective towards Nature, which Morton himself criticises. From this withdrawn, detached position, conflicts can be noticed and described as "dark", but

¹⁸¹ Morton, *The Ecological Thought*, 77.

¹⁸² "Noir is the mode of dark ecology: in it, we discover that the detective's personhood ironically contaminates the scene. (...) Ecological awareness follows a similar path. Our ideas about having an objective point of view are part of the problem, as are ideological beliefs in immersion in a lifeworld." Morton, *Ecology without Nature*, 111.

¹⁸³ Morton, *The Ecological Thought*, 53.

there is no intention or possibility to identify and alter the systemic relations that cause them. The perceived inescapability of a melancholic "dark ecology", in which the self is surrounded by but forever alone among "strange strangers" can thus lead to a loss of political agency and participative interest, as described above. This hands-off description of ecological involvement, in a time of climate change, is politically and ethically problematic, ecocritically weak, and also highly romantic:

*"What makes humans human is not some Natural or essential component of being but a relationship that can never be fulfilled."*¹⁸⁴

2.2.3 Ecology and Evolution in Morton's reading of Darwin

*"Environments are made up of strange strangers. The phenotype produced by the genetic genotype includes the environment, like a beaver's dam or a mouse's nest. Environments coevolve with organisms. The world looks the way it looks because of life forms. The environment doesn't exist apart from them."*¹⁸⁵

Morton's concept of the "mesh" as an environment that consists of "strange strangers" is influenced strongly by his reading of Charles Darwin's theory of evolution. *The Ecological Thought* draws numerous examples for the co-evolution of living beings from *The Origin of Species*¹⁸⁶ to illustrate the notion of ecological interconnection. This is problematic for several reasons: Firstly, there seems to be a tendency in Morton's use of these examples to conceptually blur the processes of species evolution with those of ecosystem development, which is scientifically not entirely correct, or at least results in an incomplete description, since ecosystems are also equally and independently formed by non-living entities and forces, such as earthquakes, floods, and climatic shifts.¹⁸⁷ Secondly, the examples he chooses from Darwin to support his argument are meticulous observations of co-adaptive and symbiotic relationships between *living* beings only (and their habitats). He does not explicitly consider the relationships between objects and their "habitats" in the same ecological context of the "mesh", and thus leaves aside ecological relationships between non-living entities that are extremely important in the development of contemporary ecosystems: The co-developments between human artifacts and geo-chemical processes, for example, present still little-known but potentially very powerful driving forces in the recently announced Anthropocene. Despite his interest in non-living beings such as artificial

¹⁸⁴ Morton, *The Ecological Thought*, 112.

¹⁸⁵ *ibid.*, 51.

¹⁸⁶ Charles Darwin, *The Origin of Species* (London, 1859).

¹⁸⁷ "Evolution is the change in the inherited characteristics of biological populations over successive generations. Evolutionary processes give rise to diversity at every level of biological organisation, including species, individual organisms, and molecules such as DNA and proteins." "Evolution", *Wikipedia*, accessed on 3 Sep 2014, <http://en.wikipedia.org/wiki/Evolution>.

"An ecosystem is a community of living organisms (plants, animals, and microbes) in conjunction with the nonliving components of their environment (...) These biotic and abiotic components are regarded as linked together through nutrient cycles and energy flows." "Ecosystem", *Wikipedia*, accessed 3 Sep 2014, <http://en.wikipedia.org/wiki/Ecosystem>.

intelligence technology, Morton does not explore the particularities of intimate relationships between humans and human-made objects as explicitly co-constitutive of his immersive model of ecology. He considers a new concept of "hyperobjects",¹⁸⁸ acknowledging that the immersion in "things" is a distinctly contemporary ecological experience, but *The Ecological Thought* still misses an observation of how human-made objects embody a profound constructive or destructive ecological agency, or how the social codes and behaviours attached to them shape the relations between living and non-living entities, and form environments.¹⁸⁹ Thirdly, with Darwin *The Ecological Thought* refers to a fundamentally important but partly dated theory of evolution which doesn't yet expand on individual behaviour and learning as evolutionary factors and as agencies shaping ecosystems. In Darwin's time, the study of animal behaviour and adaptive learning was not advanced enough to discuss these in detail – Darwin himself was one of the first scientists to consider for example sexual display and related behaviour, such as courting, as a second important factor in evolution. Morton doesn't pick up on these early observations of agency connecting mutation, adaptation, and individual behaviour, which he seems to understand as coming too close to adaptationism. Instead, he tends to describe evolution as a passive, unconscious happening, emphasising the randomness and purposelessness of genetic mutation as an individually internal event. More recent biological studies have challenged this notion of exclusive internality, and have considered the reciprocal influence of environmental factors on changes of the genome, for example the impact of radiation or mutagenic chemicals in the environment.¹⁹⁰ These exposures, operating on the "realist" level of ecology, reveal the ecological co-dependence of evolution and mutation themselves. In *The Ecological Thought* they are however regarded as "happenstances", rather than as consequences of ecological relations that could be changeable.

It seems that Morton uses Darwin's theory of evolution to support his claim that the "mesh" of ecology is beyond anyone's control. This, I believe, is a dangerous underestimation of the constructive and strategic forces at play in the shaping of practical ecologies, their populations, and their habitats. These forces, ecological agents in themselves, include adaptation by learning, social relationships, communication, and choice, among others. They are based on relationships that are not all simply describable as automatised, mutational, or random reactions, but that in many cases require active decisionmaking. Hence, where Latour presents an overly structuralist political "design" of ecology, Morton's reading of Darwin seems to assign the ontology, the present and the future of ecological systems too uncritically to events that happen unpolitically "out of nowhere" – the "aeolian" element of ecomimesis is noticeable very strongly here in his writing.

¹⁸⁸ He later expands on these in another book: Timothy Morton, *Hyperobjects. Philosophy and Ecology after the End of the World* (University of Minnesota Press, 2013).

¹⁸⁹ Morton's conceptualisation of "hyperobjects" to some extent closes this gap, but even here, human-made objects are shown as unrelated to human action in that their behaviour has become uncontrollable and even unimaginable. See chapter 3.4.3.

¹⁹⁰ Morton mentions this, but does not follow it up further. For a basic overview of recent research in this field see "Mutation", *Wikipedia*, accessed 29 Aug 2014, <http://en.wikipedia.org/wiki/Mutation>.

The ontology of human-made objects in ecology, for example, is very different from the purposeless evolution of living beings. It challenges the general "absolution" from responsibility implied in the inescapability of the "mesh" and in the claimed unknowability of "strange strangers": Designed objects such as the Boeing 747 which Morton references¹⁹¹ are made with specific intention, therefore their agencies should at least partly be known even before they exist. Their purpose, their specifications and characteristics can be more than speculated upon – they can be manipulated and planned. This distinguishes artifacts from other ecological objects and beings: they carry within them a certain responsibility for the agency they have been endowed with, a responsibility that falls back on their makers (and users). A comprehensive ecological thinking should therefore not merely observe and endure the results of "purposeless" genetic mutation and accidental encounters, but analyse in particular also those ecological agents that are radically intentional, constructive, and purpose-driven: human-made objects, behaviour, learning, the Social. It could then investigate how their agencies are physically and socially connected with radically non-intentional entities such as ocean acidification, epidemics, or climate change.

2.2.4 The Ecological Thought and the Social: Democracy "without pity"?

The Ecological Thought dismisses Nature as a fantasy, but still appears to take Society, or the Social, for granted. Its understanding of ecology as a nonhierarchic, "democratic" coexistence, automatically provided by the shared immersion in the "mesh", leaves many questions open regarding individual and collective motivations for systemic behaviour in practical ecologies. I will argue that this problematically leaves an opening for the justification of a rather passively endured "*radical democracy that transcends the politics of pity*",¹⁹² and puts the Social as a potential structuring force for social and ecological justice at risk.

Apart from the theory of evolution, Morton's notion of ecology also draws inspiration from the discourses of object oriented philosophy. While not concerned with rescuing the idea of Nature, object oriented philosophy, however, does not easily lend itself to supporting the idea of ecological relationships, because its exploration of object relationships and the Social is conflicted: According to Graham Harman, on the one hand it does not acknowledge independently existing individuals as entities with an essence. For Morton this means that "*Nothing exists all by itself, and so nothing is fully "itself"*."¹⁹³ On the other hand, object oriented philosophy describes all entities as constantly withdrawing from each other.¹⁹⁴ Its understanding of entities and their relationships appears thereby as openly ambivalent – radically individualistic without supporting the idea of the individual. Morton's Ecological Thought seems to express exactly this conceptual bipolarity: Its "mesh", while ultimately and

¹⁹¹ Morton, *The Ecological Thought*, 63.

¹⁹² *ibid.*, 46.

¹⁹³ *ibid.*, 15.

¹⁹⁴ Harman, 132.

immersively relational, at the same time appears as fundamentally un-social through its insistence on "strangeness".

Several questions arise here: If all objects or entities are strange and withdrawn, and if all objects are wrapped in other objects, but not permanently or reliably,¹⁹⁵ if there is no foreseeable structure to relations, if relations between "strange strangers" cannot be anticipated – how can the observable alignment and coordination of entities as a *social-ecological* system with all its rituals be explained? If we hypothesise that such coordination is based on a shared aim or intention, how does this social impulse arise and how is it actively maintained and protected against tensions and alienation? Surely, the observation of a Social is not sufficiently explained as merely coincidental, passive coexistence in a random mesh. There is more effort, reflection, compromise and manipulation required for living together, especially when future-oriented, speculative, and non-intuitive behaviour is asked for. But is the mountain's relation to the village at its foot already a social one? Is intimacy necessarily social, and is distance always un-social?

Morton's key image for the "democratic", social experience of ecology through the encounter with "strange strangers" is a passage from Samuel Taylor Coleridge's poem *The Rime of the Ancient Mariner*.¹⁹⁶ It describes, among other episodes, the protagonist's nightmarish and yet strangely elating "environmental" experience of being immersed in a sea swarming with water snakes.

*"Coleridge's critique of sensibility is directed toward creating the potential for a radical democracy that transcends the politics of pity. (...) The moral is about the traumatic encounter between strange strangers. (...) Coleridge brilliantly imagines the proximity of the strange stranger, who emerges from, and is, and constitutes, the environment. (...) What the Mariner learns is how true sympathy comes from social feeling – the awareness of coexistence. The ecological thought needs to develop an ethical attitude we might call 'coexistentialism'."*¹⁹⁷

The experience of democratic, "compassionate" cohabitation going "beyond condescending pity" is here equaled to an experience of inescapable intimacy, and thus non-hierarchy, with other beings. However, I would argue that this refers to an intimacy only with the *thought concept* of the "strange stranger", the concept of strangeness itself. It doesn't refer directly to the individual entities evoking this "*social feeling – the awareness of coexistence*"¹⁹⁸. In the individual aesthetic and sensual, "environmental" experience of being immersed in strangers, these strangers remain an undifferentiated environmental mass. In Morton's

¹⁹⁵ Harman, 215.

¹⁹⁶ Samuel Taylor Coleridge, *The Rime of the Ancient Mariner*, 1834, accessed online on 31 Oct 2012, <http://www.poetryfoundation.org/poem/173253>. Excerpt in Morton, *The Ecological Thought*, 92. also discussed in Morton, *Ecology without Nature*, 127–128, 157–159. See Appendix.

¹⁹⁷ Morton, *The Ecological Thought*, 46–47.

¹⁹⁸ *ibid.*, 46–47.

interpretation Coleridge's water snakes present a mesh of slimy beings – not a group of individual and distinguishable water snakes. They are only relevant because they provide an ambient experience for the Mariner – they are his environment in a certain personally formative moment. When individual beings become mere environment however, the idea of democracy has been warped. While the Ecological Thought exaggerates the difference between the immersed subject and its environment, it ignores social differentiation within this environment itself. Morton means, perhaps, that the "social feeling" of the Ecological Thought enables us to understand and accept the unresolvable difference of our neighbours, even in closest cohabitation. But should an ethical attitude be developed out of a sympathy towards a concept of "strangeness", rather than towards the actual beings which might after all refuse to fit neatly into this formalised idea? An individual being might very well be different, but not at all strange – or strange, but not radically different. It seems to me that there is a danger here for Morton's "coexistentialism" to turn into narcissism. The feeling of enmeshment seems to become stylised as a sublime, self-affirming and aesthetic experience. The world, the environment, begins to revolve around the sensitive but self-centered and passive observer. Morton himself senses this split in the mesh when he describes democracy:

*"Democracy implies coexistence; coexistence implies encounters between strange strangers. (...) Democracy is based on reciprocity – mutual recognition. But since, at bottom, there is no way of knowing for sure – since the strange stranger aspect of personhood confronts me with terrifying darkness – the encounter at its zero level is a pure, absolute openness and is thus asymmetrical, not equal."*¹⁹⁹

In a "radical democracy that transcends the politics of pity"²⁰⁰ each entity has to defend its own interests against an undifferentiated and indifferent environment of individualistic others. Morton assumes that this strife will be guided and buffered by compassion – by identifying with the "strange stranger" – and by a universal "love", including the love of darkness and irony. Instead of discussing the particular fragility of the Social, increased by the challenges of nonhierarchic ecological thinking, Morton claims that the Ecological Thought is *per se* "democratic", and therefore "social" with a positive connotation, and that any darkness (or brutality) in ecological thinking can be regarded as contributing to this democracy:

*"The ecological thought includes negativity and irony, ugliness and horror. Democracy is well served by irony, because irony insists that there are other points of view that we must acknowledge. Ugliness and horror are important, because they compel our compassionate coexistence to go beyond condescending pity."*²⁰¹

¹⁹⁹ Morton, *The Ecological Thought*, 80.

²⁰⁰ *ibid.*, 46.

²⁰¹ *ibid.*, 17.

In Morton's example of the Ancient Mariner however, compassion with the undefined and unknowable mass of water snakes is a misunderstanding: what the Mariner really feels and expresses in this strange moment of horror, being "*alone, alone, all, all alone*",²⁰² can only be self-pity. To me this sounds potentially terrifying: a democracy of panic-stricken individuals fighting for survival, and of reflective but only self-interested, passive witness-observers indulging in melancholy while their world falls apart.

Within the logic of the Ecological Thought itself, the sheer possibility of democracy is in fact questionable: If the "mesh" is already inescapably constituting and determining all relationships, wouldn't this replace the need and possibility for democratic decisionmaking? Does democratic decisionmaking not become pointless against the allinclusivity and passivity of the Ecological Thought, which already prestructures and explains everything there is and can be? It could be speculated that the Ecological Thought is more interested in the aesthetic and intellectual human experience of a theoretical concept of ecology which superficially fits the ideal of a nonhierarchic democracy,²⁰³ than in the critical analysis and conceptualisation of practical ecology as a system of very diverse and inherently incompatible entities, including the reality of undemocratic forces as well. As in Latour's Political Ecology model, the assumed correlation of democracy and ecology in the Ecological Thought appears artificially constructed when considering the behaviour and characteristics of entities in practical ecology.

2.2.5 The Ecological Thought and practical ecology

Morton's description of ecology as immersive, endless mesh acknowledges and endures the staggering complexity and obscurity of entities and their relations to a high degree, for the price of giving up any notion of systemic overview. In particular the consideration of a dark and uncomfortable side of ecological "enmeshment" is an interesting addition to the usually "bright green" tenor of ecology models in ecocriticism, including Latour's optimistic "good common world" projection. However, the lack of ecological cause-effect-structures in Morton's mesh supports the cultivation of a vague ecological sentiment rather than eco-systemic thinking and acting based on the notion of consequence and responsibility: It allows entities to adopt an unengaged witness-observer perspective and remain in a state of directionless dwelling. Morton's intimate "coexistentialism" here suddenly loses all its immersiveness and is revealed as a distanced "parallelism" in which ecological involvement can be theorised but not practiced: The entities making up the ecological mesh do not socially live with each other, but merely side by side. The separateness of the self is deliberately being upheld to maintain the position of a subject as a witness observer, involved but not participating in his/her environment – probably motivated by a not irrational fear of immersiveness turned perverse or self-destructive:

²⁰² Coleridge, *The Rime of the Ancient Mariner*, 4.232. See Appendix.

²⁰³ "Ecology is a matter of human experience." Morton, *The Ecological Thought*, 12.

"Collective intimacy can't be about feeling part of something bigger or losing yourself in an intoxicating aesthetic rush: that way fascism lies."²⁰⁴

This evasion of a more participative attitude is presented as maintaining critical distance, but can also have a destructive effect upon individual agency and upon the idea of the Social. Passivity however seems rather problematic in a time when well-considered constructive action is needed to prevent further escalation of ecological and social crisis. Pessimistically proclaiming the general unknowability and essencelessness of entities, Morton ignores the investigative possibilities of participant observation as an empirical, messy, undistanced and perhaps disillusioning way of getting to know entities as best as one can.

Morton's references to the theory of evolution and object oriented philosophy seem to provide the Ecological Thought with a new "givenness", experienced in the inescapability of the ecological "mesh", to which consciousness has access, but agency doesn't. From a social and ethical perspective such unquestioned "givenness" must be handled with great care in the context of proposing a new ecological worldview and indeed thinking mode, because the structuralising forces and motivations that shape these human-nonhuman ecological relationships remain only vaguely addressed by Morton. Apart from "love" and "compassion", obviously they also contain brutal, indifferent, selfish, and undiplomatic forces. Having dismissed "strange strangers" as unknowable, Morton leaves the constructive role of the Social in an ecology without Nature largely uninvestigated, and instead seems to assume that the Ecological Thought automatically expresses the "ethically correct" social values of humanity, which previously formed a corrective to the indifferent "laws of Nature": democracy, compassion, individual freedom, aesthetic enjoyment. None of these are found in the same distinction outside of human society. The question of what is "social" if there is no "natural" anymore however should not be so easily put aside by simply meshing both together: It provides the key to what might constitute the specific ecological agency, constructive responsibility, and survival strategy of human beings.

The subjective enjoyment of the dark melancholy of nonstructure and purposelessness in the Ecological Thought in my view problematically erodes the anti-entropic, constructive motivation needed to uphold the idea of the Social and to generate the specific knowledge required for making positive, active changes. Lacking a joint motivation for developing future-oriented ecological agency, and knowing too little about the participants of practical ecology, Morton's Ecological Thought could be said to produce an introverted, perhaps even narcissistic idea of ecology. It thereby, in fact, delivers an illuminating account of ecological experience in the postmodern psyche, describing the current depression and confusion we find ourselves in when trying to rethink ecology from a position of perceived inescapable immersion.

²⁰⁴ Morton, *The Ecological Thought*, 126.

2.3 The limits of theoretical ecology models

As the world is currently experiencing through the runaway effects of climate change, ecology in practice differs greatly from its theoretical, politicised and poeticised model versions, as "vast" as they might be. It seems that despite their many references to environmental crisis, despite the timeliness of their proposals and their alignment to intensifying climate change discussions, and despite their political and critical intentions, Latour's and Morton's concepts of ecology must also be understood as entirely theoretical. They use the term ecology as a metaphor for a metaphysical cosmology based on the dismantling of Nature-Society dualism, which, similar to the flawed river metaphor, doesn't quite fit the realist observations and demands of contemporary practical ecology.

The deepest problem of Morton's and Latour's dismissal of Nature-Society dualism might be, as Lindemann has noted, that the proposed alternatives with their levelling of human-nonhuman hierarchies theoretically allow not only an "upgrading" of nonhumans, but also a "downgrading" of (some) humans.²⁰⁵ Therefore, Latour and Morton can only think their models safely as long as they are built on an absolute, and perhaps naive, belief in the strength and universal applicability of democracy for all beings. Despite their elaborate critiques of anthropocentrism and modernist ideology they do not seem to be worried that their projected democracy is a human invention that is neither eternal and unquestionable, nor automatically "good" even. Historically, it is a culturally determined agreement and framework for human behaviour in a certain cultural and political setting. Especially given the rather violent history of modernism, which could to some extent be read as a history of democracy's failures, it is surprising that Morton's and Latour's models still put all their faith in democracy and build their new concept of ecology onto it. This fundamentally clashes with practical ecology: The majority of coexistential negotiations between humans and nonhumans occurs on an entropic, physical all-or-nothing, life-or-death level, not on a conversational level. The scales, timeframes, and complexity gradients of entities' concerns, and the vocal "frequencies" at which they can be articulated are often incompatible and untranslatable even by expert "spokespersons". The resulting inability to achieve an equal level of communication between ecological entities cannot entirely be blamed on human ignorance, on modernist dualism, or self-centredness, but is intrinsic to the notion of ecology: The functioning of ecosystems depends heavily on widest-possible diversity, and therefore also on maintaining the diverse forms and time regimes of characteristic expressions of agency. A "parliamentary" democracy with the centralising capacity to "level" all these conflicting demands in order to decide ecological processes collectively would have to substantially interfere with individual entities' forms of expression, disturbing the overall functioning of the system. A "basis-democratic" system on the other hand could result in a majority rule in which, considering the existing ecological entities through their realist

²⁰⁵ Lindemann, In Kneer et al., *Bruno Latours Kollektive*, 339–360.

aspects, humanity might not have the upper hand. Therefore, an ecology model sitting on the presumption of being able to represent and enact democracy on behalf of all involved entities equally, and still privilege the human, is bound to be an ambitious but dangerously flawed construction.

Through the analysis of Latour's and Morton's conceptual models for ecology it becomes apparent that the dismissal of Nature-Society dualism leads to significant insecurities and paradoxes regarding the characteristics and behaviour of ecological agents and their relationships. Morton and Latour speculate about their behaviour from their own disciplines' knowledge bases, but run into problems when confronted with the realist aspects, complexities, and actualities of entities in practical ecology. Both of them misjudge the involvement of ecological agents: Morton underestimates the agency of passivity and withdrawal and their erosive effects upon collective systemic behaviour. Latour on the other hand overestimates the structuralising powers of the collective and the integrity of spokespersons, and neglects the indifference or subversiveness of individual agents. Importantly however, both models for a human-nonhuman ecology without Nature also challenge us to consider once more the role of the Social, and what is or should be "human" in our ecological relationships and expression of agency – despite and because of ecological interconnectedness and evolution's aimlessness. This unspoken anticipation of an essential reimagination of the Social within ecology concepts might turn out to become their main challenge for contemporary ecocritical thinking and practice.

The two ecology models discussed show that while ecocriticism delivers here a very poignant critique of modern societies' culturally determined idea of a distant Nature and of hierarchical, exploitative human-nonhuman relationships, the alternative, more egalitarian concepts for human-nonhuman ecology are in a conflict regarding how to handle the newly recognised "voices" of nonhuman ecological agents. They balance precariously between, on the one hand, constructing an equally ideologised system of cohabitation that misrepresents the full ecological agency of its entities by presupposing their will and ability to compromise, and, on the other hand, allowing ecological forces that have a destructive effect on the Social and on human agency to unrestrictedly express themselves by not recognising their potential to do so.

The central point of critique, in my view, must therefore be that ecocriticism, confined to the laboratory of cultural theory, apparently doesn't know its ecological agents well enough – humans as well as nonhumans, and the forces and processes that connect them. This seems to open up a wide field for ecocritical art to explore: Who exactly are the agents in ecological systems? How do they act, potentially and actually? How do they relate, temporally, spatially, personally, or conceptually? What is the Social in an ecology without Nature? And, described and embodied by all these entities, what is Ecology?

3. What is ecology? Systems thinking in ecocritical art and the hyperextension of objects

The investigation of current approaches to the question of ecology in eco-art and ecocriticism so far has identified a need to improve and specify the practical knowledge of ecological agents, their relationships, and their behaviour in and as systems. Both the old idea of "Nature" and the idea of political ecologies "without Nature" seem to not know their entities well enough. Drawing a parallel to Kate Soper's observation of a three-fold split of Nature we can argue that this limited knowledge is a consequence of approaching ecology through the same three aspects or disciplinary frames, viewing it as either "metaphysical ecology" (abstract philosophical models reflecting human cosmological and political constructions, such as offered by Latour and Morton), "realist ecology" (projections and narratives of long-term processes delivered by empirical sciences and systems theory), or "surface ecology" (investigation of symptoms, pointing towards short-term or local processes through eco-art, environmentalism, journalism, activism, "lay" presentations in natural sciences).²⁰⁶ Ecology's aspects thus still correspond to the specialisms and methodologies of the main research disciplines which have historically defined the idea of Nature: philosophy, natural sciences, art. While undoubtedly there are, and always have been, cross-overs between their approaches, the understanding of ecology is nevertheless often limited by their "departmentalised" knowledge of entities – a limitation manifesting for example in flawed metaphors, utopian projections, and a prevailing anthropocentrism in the reading of non-human ecological processes. This detection of three distinguishable approaches to ecology results in the observation that Ecology is a human concept as complex and constructed as the controversial Nature idea, and that the three aspects have to be brought and thought together in order to comprehensively explore the relational system they all attempt to describe. Rather than merely replacing the idea of (threefold) Nature with the idea of (also threefold) Ecology, it would be necessary to rethink the perceptual triad itself, by thinking each aspect through and with the others, never in isolation.

The question of ecology today is therefore also a question of the organisation and development of inter- and transdisciplinary research, and of systemic thinking. The artistic, curatorial, and philosophical practices of eco-art and ecocriticism, described in the chapters above, have started to work in this direction, but their contributions, however important, only mark the beginning of a long journey for interdisciplinary ecocritical research and practice. This chapter will highlight the importance of accurate systemic observations for future-oriented thinking and acting in times of ecological crisis, and will present examples of ecocritical artistic practices and methodologies which explore the systemic behaviour of agents in practical ecology in detail through concrete case studies.

²⁰⁶ Derived from Kate Soper's concept of three natures, these aspects of ecology are, likewise, reminiscent of but not entirely congruent with Felix Guattari's three ecologies (mental, social, environmental ecology), as mentioned in chapter 1.2.1.

3.1 Donella Meadows: The importance of thinking in systems

The actuality of ecological crisis today increases the pressure on ecology models to be "accurate", and to make sure that any adaptation measures derived from them in order to change existing systems do not "*push the change in the wrong direction*".²⁰⁷ Donella Meadows' systems-theoretical approach to ecology has made clear why an enhanced accuracy regarding the observation of agent behaviour is crucial: In her analysis of dynamic systems she has demonstrated that misjudging or misinterpreting the behaviour of a single component of a system can make it impossible to understand, predict, and manage the system's behaviour in its entirety, with potentially catastrophic consequences.²⁰⁸ In times of exponentially developing ecological crisis, such mistakes are simply no longer affordable.

Meadows takes a systems theorist's view of entities in ecologies. She describes them as part of "stocks", which are considered as the basic, perceptible, measurable elements of any dynamic system. Stocks constitute an accumulation of entities over time which fluctuates according to the "flows" of material and energy within the system. The speed and direction of flows is in turn influenced by the level and behaviour of the stocks. In Meadows' system models the entities forming stocks are not only physical things, such as material objects, but also, for example, a quantity of information, of wellbeing, or of motivation:

"A stock is the foundation of any system. Stocks are the elements of the system that you can see, feel, count, or measure at any given time. A system stock is just what it sounds like: a store, a quantity, an accumulation of material or information that has built up over time. It may be the water in a bathtub, a population, the books in a bookstore, the wood in a tree, the money in a bank, your own self-confidence. A stock does not have to be physical. Your reserve of good will toward others or your supply of hope that the world can be better are both stocks.

*Stocks change over time through the actions of a flow. Flows are filling and draining, births and deaths, purchases and sales, growth and decay, deposits and withdrawals, successes and failures. A stock, then, is the present memory of the history of changing flows within the system."*²⁰⁹

The theorisation of entities as collective participants of stocks moved by flows leads to an observation of their behaviour in systems which challenges the proposition of an ultimate immediacy of relational actants (Latour) and strange strangers (Morton): Meadows shows that stocks react with a delay to the flows that are active in systems; they serve as buffers or shock absorbers. This adds a very important detail to the consideration of ecology which has been rather neglected by Latour and Morton: the agency of time.

²⁰⁷ Meadows, *Thinking in Systems*, 146

²⁰⁸ Meadows et al., *Limits to Growth. The 30-Year Update*.

²⁰⁹ Meadows, *Thinking in Systems*, 17–18.



Figure 18: Blackwater dam and reservoir, Scotland, 2010. Photo: Julia Martin.

"Water in a reservoir behind a dam is a stock, into which flow rain and river water, and out of which flows evaporation from the reservoir's surface as well as the water discharged through the dam."²¹⁰

Studying the behaviour of dynamic systems in temporal terms, and explicitly taking into account the vast and nonlinear time scales of processes in realist ecology, Meadows focuses particularly on the surprising effects of exponential rather than linear growth and on the individual, hardly predictable reaction times of objects in complex assemblages with other entities. To consider a system- and agent-specific delay of agency, or a contingent sudden outbreak of agency, significantly complicates the manageability of ecological agents.

In regard to decisionmaking in practical ecologies, for example in environmental planning, Meadows' analysis highlights the necessity of investigating entities and their individual and "stock" behaviour empirically and in great detail, taking into account situation-specific tipping points, leverage points, feedback loops, contingency, and the capacity to overshoot and collapse as integral possibilities of systems behaviour. In addition to the close focus on stocks as collective entities and on their relational movements in flows, she insists that it is equally necessary to maintain the overall perspective of systems thinking, which connects one specific system with many others, forming an ecology of multiple ecosystems on different scales of observation and operation. This translocal, transtemporal overview can lead to an awareness of the potential and actual incompatibility of corrective changes to specific systems on global versus local levels: Meadows' multi-scalar ecological view acknowledges and problematises the possibility that the dynamics driving positive change in large-scale and small-scale systems, such as practical adaptation strategies, can in fact eclipse each other.

²¹⁰ Meadows, *Thinking in Systems*, 18–19.

3.1.1 Systems thinking and sustainability

As spelled out in the most recent report of the Intergovernmental Panel on Climate Change,²¹¹ human society is entering a phase of deep structural changes, whether planned or catastrophic. To understand the agencies at play in such changes within practical ecology in as much detail as possible, and to avoid constructing ecology models with further inbuilt systemic problems is therefore important not only as an intellectual challenge, but as foundation for the projection of future scenarios of change, and for the effective adjustment of currently unsustainable practices.

In the examples of eco-art and ecocriticism referred to above human and nonhuman ecological entities are posited as active agents. However, considering their future-orientation they often appear as surprisingly passive and even *re-active*, rather than as strategically co-creative of their habitats. Change appears as something that happens to entities from outside, and is not explicitly considered as a consequence of previous actions or non-actions of these same entities. In eco-art practices such as Saraceno's and Cape Farewell's, change is evoked as a magical leap into a better reality, creating the illusion of unlimited changeability and failing to notice how such projections might distract from the identification of less attractive but potentially more effective "leverage points" for systemic change. In the ecology models of Latour and Morton, on the other hand, the possibility of envisioning, planning, and implementing systemic change is limited by ecological coexistence itself – its "democratic" enmeshment, its "due process", and the romantic consumerism of its entities.

In Morton's *Ecological Thought* for example, the ultimate immediacy of entities in the "mesh" is incompatible with perceiving, considering, and acting upon the demands of systemic relationships which go beyond direct individual experience. His "strange strangers" remain introverted and distanced, contemplating only their individual relationship with their environment. Rather uninterested in their own impact upon other entities, they appear to be ignorant of the problematics embedded for example in the agency of not-knowing and not-doing. The inertia of their embeddedness and of a passive witness-observer perspective dissolves any agency that strives to be consciously directed towards change. Taking responsibility for strategic and visionary decisions, which might have to be entirely counter-intuitive for an individual in its momentary environmental setting, can probably not be expected from the encapsulated "strange stranger".²¹²

The relational definition of Bruno Latour's actants, although it allows for a very pointed observation of characteristics in a certain moment, makes it impossible to trace entities through their evolving cause-effect-relationships over time, and thus to consider them in

²¹¹ Intergovernmental Panel on Climate Change (IPCC), *Fifth Assessment Report*, 2014, accessed online on 12 May 2014, <http://www.ipcc.ch/report/ar5/index.shtml>.

²¹² Meadows' colleague Jay Forrester for example describes complex systems as "counterintuitive". Meadows, *Thinking in Systems*, 146.

Jay Forrester, *Principles of Systems* (Cambridge, MA: Pegasus Communications, 1990), first published 1968.

regard to sustainability questions. The main problem with actants in regard to sustainability and strategic planning is that they cannot be held accountable for their past activities, because their actant-ness, always only relative to an immediate situation, continuously ceases to exist. Neither can they be expected to act for the future, because it is impossible to know which constitutive relationships they will be engaged in next, and therefore, how they will exist and behave. Actants, in their extremely situation-specific characterisation, only exist in the moment, they have no potentiality.²¹³ According to Latour's definition they can be understood as active but ahistorical. As a consequence, it can be argued that they are probably incapable of and inaccessible for the planned development of sustainability strategies.

As the comparison with Meadows' stocks and flows highlights, Political Ecology and the Ecological Thought describe agency as quasi automatic effect of an entity's momentous immersed existence in the Now, without taking into account its individual reach into the past and future. The specific characteristics of planning agency, and of responsibility regarding the future (both related to the idea of the Social), are here not sufficiently discussed – leaving aside for example an agent's potential capability to reinvent its own characteristic agency, even counterintuitively, in order to create a new future scenario for itself. This seems to me an area of acute interest, considering the increasing pressure to plan and realise a sustainable organisation of human-nonhuman coexistence.

3.2 Critical points regarding ecology concepts in recent eco-art and ecocriticism

Four critical points can be identified at which contemporary eco-art and ecocriticism might still be in the process of gaining more clarity regarding their understanding of ecology. While these points are not all equally and generally applicable to the diverse positions in eco-art and ecocriticism discussed in this thesis, they nevertheless present recurring conceptual insecurities in these examples' discourses of ecology.

3.2.1 The conceptual distinction between environment and ecology remains unrealised or fuzzy.

While ecocriticism and eco-art critically address the problems of presenting an aesthetically distanced and objectified Nature, their alternative models and images tend to replace the idea of Nature with the idea of Environment without entering an actual discourse of Ecology.

²¹³ "While rejecting power as an explanatory concept, Latour also dismisses the related notion of potency or potentiality, so central to the history of metaphysics. Since Latour is committed to a model of actants fully deployed in alliances with nothing held in reserve, he cannot concede any slumbering potency lying in the things that is currently unexpressed. To view a thing in terms of potential is to grant it something beyond its current status as a fully specific event." Harman, *Prince of Networks*, 28.

The idea of environment is supposed to accomplish a radical shift in the perceptive relationship between (human) observer and (nonhuman) observed, because it immerses the former in a conglomeration of "natural" as well as "non-natural" entities. However, this immersion is paradoxically as isolating as the previous distanced observer perspective towards a Nature "over there". The circumstance that an environment is experienced individually, while Nature "over there" was supposedly a collective experience of Society, does not change the distanced observation mode. An entity perceiving or witnessing an environment is here immersed passively but does not structurally participate in the differentiation of what surrounds him or her. We have seen for example in Morton's "mesh", in Saraceno's spheres, and in Cape Farewell's expeditions that the promised immediate contact between observer and environment remains individualistic, re-active rather than participatory, and mostly unidirectional. As with Latour's external reality, which is revealed as negative image of the collective, the image of a personalised immediate environment wrapping around a central observer cannot contain those ecologically active entities that are imperceptible for the witness observer in the moment of immersion, for example because they inhabit a different temporal or spatial scale, or because they only affect other entities in this environment.

The notion of *environment*, as formulated in the presented examples of eco-art and ecocriticism, is therefore the experiential or imagined, individualised, but structurally unspecific description of an immediate habitat, focused on only one systemic constellation which its witness-observer inhabits, at least in the moment of description. Qualitative or quantitative changes to an environment's internal constellation do not make a difference to its definition and function as environment. At the same time, without the observer as its focus point the concept and reality of this particular environment falls apart as a whole, because it is evoked through an aesthetic relationship with the experiencing observer. In contrast, the notion of *ecology* is a functional description of ongoing specific cause-effect relationships between ecological agents, which traces the dynamics and behaviour of individual, collective, multiple, and competing systems. Their observer can be integrated in the described ecology, contextually, structurally, or environmentally, or can be situated entirely outside of its observational frame. Ecological agents are thus understood systemically as multi-directionally related to each other by their agency, and not as singularly related to an observer whose environment they constitute.

The investigation of *environment* is centered by the condition of the perceiving subject inside its habitat, while the investigation of *ecology* is decentered, exploring the relationships between all entities and places forming each other's habitats and also destroying them, with or without the participation of the perceiving subject. Ecology is therefore, so to speak, a different research question.

3.2.2 Place-specificity and place-responsibility as "ecological" approaches are defined as local.

The notion of environment contains a strong notion of place – the individual placedness of the centrally important observer. Eco-art practices that employ place-specificity and place-responsibility with emphasis on the local explore ecological relationships from this centrally placed observer perspective. The close attention paid to local context is to some extent shifting the focus away from the condition of the observer and towards a greater differentiation of his or her environment, perceived as place. Place-specificity can therefore provide important specifications regarding local micro-ecologies. However, the insistence on place as local, as articulated for example by Lucy Lippard, is at the same time reconfirming the experience of an immediate and immersive individual environment, now as a slightly more detailed, more complex image. With the confinement to the local environment place-specific practices cannot sufficiently explore ecological relationships that are effective beyond the local. They evade a full investigation of the translocal outreach of ecological agencies, as well as the implications of global hypercomplexity for the local, and the possibility of decentered systemic changes on larger scales. This has become apparent for example in Agnes Denes' *Tree Mountain*. Fieldwork practices working with participant observation are also, perhaps especially, afflicted by the encapsulating effects of deep local involvement, placing themselves deliberately and methodologically inside the environment of their research object and thus making it their own. Their chance to still investigate the ecology of this place critically lies in the specialised double-agency of an "ethnographer", who, as James Clifford has described, eventually leaves the field environment again, and reassesses his/her experiential knowledge gained through embeddedness – from a rationalising and perhaps romanticising distance, and under consideration of a wider comparative context.²¹⁴ To advance the investigation of ecology in eco-art through the consideration of place-specificity, a parallel identification of place as decidedly translocal or even virtual, decentered, and comparable would seem necessary, as well as a discussion of the dialectic between these two levels of engagement with place, expressed for example in the critical reflection of place-responsive and fieldwork-led practices.

3.2.3 The conceptualisation of ecology is claimed and expected to align with the idea of democracy.

Proposing to let the entities formerly summarised as "silent Nature" speak, and to consider them as active agents with equal capabilities to affect humans and nonhumans, the ecology models discussed in chapter 2 introduce a strong paradigm under which this egalitarian claim is made. Their "liberation" of all agents through the dismantling of the hierarchic Nature-Society division is controlled by generally ascribing democratic principles, defined as

²¹⁴ Clifford, *The Predicament of Culture*.

"good", for the entire assembly of things, forces, and beings. This paradigm of democracy however leaves unspecified what the expectation of equal voices might mean in practice if applied to all possible agents, including those that are inarticulate, competitive, hostile, or uncooperative. Since ecological entities are in practice anything but equal in their agencies and relationships, mediators must be introduced to represent and translate their concerns. Latour's and Morton's model ecologies, for example, withdraw in this moment behind the smokescreen of a democratic ideal relying on the moral integrity and superiority of spokespersons (Latour) and of the compassionate mind (Morton). In eco-art, the mediating role is thought to be taken by artists, artworks, or artistic practices producing and sharing as catalysts the experience of cohabitation with other entities, thereby forging new emotional attachments (Cape Farewell, Saraceno, Denes). The systemic weak points inherent in such reliance on the delegation of speaking power, and their potential for misrepresentation, are quite obvious, and the models' own critical responses to them are visible for example in Latour's complicated organisation of constitutional powers controlling each other, or in Morton's submission to the inevitability of an ultimate compassionate, almost anarchic, tolerance of all expressions of agency. Meanwhile, the artistic practices referred to in this context transport the idea of mediation between agents through direct experience of the other and thus, whether explicitly or implicitly, adopt the role of spokesperson or compassionate observer through which nonhuman concerns are translated and represented. Eco-art's practiced contribution to "human-nonhuman democracy" is, however, similar to many environmentalist "advocate" positions, necessarily limited to translations of agency that are experienceable at all for human spokespersons and for the human plenum. It operates within an ecology model whose imagination as representative (Latour) or basis (Morton) democracy has no instruments to handle expressions of agency that do not fit its own language and ideal: expressions that are in and as themselves non-conversational, non-cooperative, or untranslatable.

While the equal consideration of human and nonhuman agents is in principle a very important step towards a more comprehensive understanding of ecological relationships and dynamics, the "good" democracy paradigm into which it is embedded here is partially blind: It suggests that eventually, when democracy is fully realised and practiced, a peaceful, rational, nonhierarchical coexistence of all entities in ecology will be the result.²¹⁵ I maintain that this can never be the case in practical ecology, especially when a democracy should be realised that is understood as fully egalitarian. Ecological entities fight to the death at every moment and in this way also enable and transform important ecological relationships. The behaviour of entities, resulting from and resulting in ecological agency, should definitely also be realised as potentially and actually lying outside of the human democratic ideal. Only then can the consequences of a radical equal consideration of all entities be fully evaluated.

²¹⁵ For Morton this coexistence is more "dark" and claustrophobic than for Latour, but can be aesthetically appreciated as "noir" involvement. See 2.2.2.

A model that democratises all ecological agents by decree would not only have to grant them the right to make themselves heard, but would also have to demand and accept their active participation in the democratic process itself, for example as spokespersons. In the examples looked at in this thesis, however, democratic consideration and consultation seems to be extended from human towards nonhuman entities, and, similar to the Environment-Self relationship described above, remains unidirectional. The same consideration is not returned, because the nonhuman entities in this "contract" cannot even realise that they have been "democratised", let alone change their behaviour in order to acknowledge human concerns. Without this equal reciprocity between democratic rights and responsibilities of all entities the democracy idea within ecology models remains lopsided towards the construction of a political or philosophical project which attempts to guarantee a "humane" version of an otherwise brutal ecological coexistence, following in the wake of the revolutionary abolishment of the Society-Nature hierarchy. This has not very much to do with striving for a comprehensive, accurate, and future-oriented description of practical ecology.

A constructive understanding of ecological coexistence must include the realisation and practical acknowledgement that ecology contains, and also to a large extent depends on, forces that are by character and essence non-democratic. This challenges and limits the human democracy ideal in its application to ecology. Instead of considering all entities as what they are, the "forced marriage" of democracy and ecology misrepresents and patronises many of them as much as the former concept of "silent Nature agents". The investigation of the democratic idea, and of democratic instruments with their potentials, achievements, and failures as agents themselves *within* ecological systems is another topic however, and a very important aspect in ecocritical research. From the examples above, The Yes Men, Amy Balkin, and Ian McEwan could be said to have worked in this critical direction.

Ecology, in my view, is not accurately describable as, or alignable with, the idea of a democratic plurivocal system, because democracy is a specialised human form of self-organisation *within* ecological systems that cannot equally apply to other ecological entities. From an ethical human perspective, democratic instruments must be employed wisely and self-critically to initiate, decide, and guide the changes of *human* ecological behaviour that are needed today to prevent catastrophic change of our habitat. This is already a very considerable challenge. Looking towards these changes in practical ecology, I maintain that a distinction must be made between positing democracy as theoretical paradigm for egalitarian ecology models, and the ecocritical investigation of democracy and its instruments as ecological agents themselves. As will be shown in chapter 3.3, the latter has become a research topic for ecocritical artistic practices working towards a closer observation of the systemic and individual behaviour of entities in practical ecology, and their co-developments with human political instruments and decision processes.

3.2.4 Ecology models are built on a partial and abstracted, nonspecific knowledge of entities.

This last point lies at the basis of the other three, and shows that eco-art and ecocriticism as research fields do not use their full investigative potential. As noticed in the examples discussed so far, their current ecology concepts are on the one hand presenting unknowable strange strangers, obscurely relational actants, closed objects, and self-centered observers of individual environments, and on the other hand their explicit intention is to think about entities ecologically, to imagine, construct, and potentially improve the relational ecologies in which all entities participate. How can this gap be closed, the gap between the "entity material" that eco-art and ecocriticism bring into the discourse and their aim to think ecologically? Reclassifying entities and their behaviour (as Morton and Latour suggest quite radically) might be a precondition for formulating a theoretical concept of their interrelations, but if the aim is to eventually use the ecological thinking developed by this concept as a guideline for decisionmaking in practical ecology, a more concrete specification and testing of the assumptions made about agents has to follow. The generalisation of agents as abstract entities can obscure the distinction between an interpretation of empirical observation of ecological processes (metaphorical or symbolic) and an idealised (political) imagination of how relational processes might or should be constructed. We have seen this for example in Morton's selective reading of Darwin's theory of evolution, in Latour's flawed river metaphor for "reversible time", and in Cape Farewell's symbolic field encounters. Abstract representation is to some extent unavoidable when describing complex systems, but it is not going to reveal what constitutes an entity's practical contextual, ecological relations, as these are always specific. An imprecise or simplified knowledge of entities' specific behaviour in ecological relationships enables a convenient but illusory "democratisation" of agents, a description of place as locally isolatable environmental context, and the upholding of environment as undifferentiated surroundings of an immersed but self-centered observer. And inversely, these familiar and safe ecology illusions discourage the acknowledgement of structurally unsettling internal complications and disruptions brought about by noncooperative, nonconform, and changing ecological agents in practice.

All four critical points raised above refer to a "modelisation" of ecology that fails to sufficiently integrate all three aspects through which not only Nature (as in Kate Soper's "three natures"), but also Ecology is perceived and conceived as concept. Emphasising the metaphysical and surface aspects, this modelisation limits and frames the complexity, contingency, and unruliness of ecological relationships, achieving a controlled and controlling "environmental ecology" that is bound to be incomplete, potentially dangerously flawed, and thus quite unhelpful as a concept with which to understand, handle, and foresee systemic situations and processes in practical ecology. For eco-art and ecocriticism this analysis on the one hand suggests that there is a need to improve the specificity and differentiation of their ecology concepts, based on more precise and more critical knowledge

of systemic and individual entity behaviour, acquired for example through case studies or through collaboration with other research disciplines. On the other hand it highlights the importance of strengthening the precision and agility of systemic thinking beyond place-specificity or case-specificity, and the awareness of decentralised, translocal and transtemporal ecological agencies.

In the context of climate change as a cultural problem, both eco-art and ecocriticism in their own view participate at the forefront of articulating new concepts and images of ecology with which society as a whole could picture, understand, and address the very real challenges of the present and future. In my opinion, therefore, they have an ethical responsibility to be exceptionally aware, reflected, and knowledgeable of their research context of practical ecology, and to be accurate as well as visionary. This factual responsibility and accuracy is usually required and demanded equally from artistic and anthropological practices addressing for example ethnic conflicts, human rights, gender topics, or colonialism, and should therefore not be an outrageous expectation. In recent years, ecocritical artistic practices have taken on the challenge of working with deep artistic as well as rigorous scientific interest in their thematic areas, researching contemporary ecological relationships, and have developed a range of methodologies through which the integration and juxtaposition of contextual accuracy, visionary thinking, artistic positioning, and visual discursiveness are tested out. The following subchapter will look at some of them.

3.3 Ecocritical art's investigation of ecological agents and their systemic relations

With the critical points raised above and the parameters of systems thinking in mind I will briefly present here the approaches of four artistic practices which in my view develop a deep investigation of ecology and of ecological objects in various ways. My interest lies in these practices' ecocriticality not firstly in terms of an environmentalist agenda, but in terms of their methodological investigation and communication of complex dynamic systems, agents, and their relationships. The observational and representational methodologies at play here alternate between systemic overview and systemic immersion, scaling up to the level of considering long-term and large-scale developments in realist ecology, and scaling down again to the level of directly experiential surface ecology and the personal contemplation of metaphysical ecology. They employ fieldwork, political activism, documentation, essayistic formats, collage, interactive collaboration, and the exhibition itself as strategic approaches for researching and representing objects and agents of concern, and their ecologies. The individual works chosen to describe these practices all deal with the social-ecological problematics of mineral extraction and its attached industries. This thematic proximity highlights even more the diversity of their artistic strategies and allows for a critical comparison and discussion of these examples of ecocritical art in the best sense.

3.3.1 The Center for Land Use Interpretation (CLUI): The subversiveness of "dead-pan documentation"

The Center for Land Use Interpretation (CLUI), founded in 1994 and based in Culver City, California, with outposts in Utah and Kansas, has been a favourite reference for many practitioners and critics of eco-art. It has participated in a number of eco-art exhibitions,²¹⁶ even though the organisation is not, as could be suspected, presenting itself as an artistic endeavour.²¹⁷ Rather, in its own words,

*"The Center for Land Use Interpretation is a research and education organization interested in understanding the nature and extent of human interaction with the earth's surface, and in finding new meanings in the intentional and incidental forms that we individually and collectively create."*²¹⁸

CLUI's work concentrates on the wide-angled documentation of land use traces, building an archive of North American landscape elements that is *"dedicated to the increase and diffusion of knowledge about how the nation's lands are apportioned, utilized, and perceived"*.²¹⁹ The Center has created over 30 exhibitions on a broad range of land use themes, has published a number of books, and has made its projects accessible as a resource through its library and its expansive website. CLUI's research and dissemination strategies are probably best described as being based in visual cultural studies, but a proximity to artistic methodologies and languages is also apparent throughout CLUI's practice: The strict, almost minimalist discipline of the sparsely commented, straightforward documentation of physical objects, the exploration of located sites by the Center's researchers, the quiet aesthetic power of the collected images, their conceptual coherence as projects, and perhaps also the "geekiness" of its fieldwork based approach, bring CLUI's practice into the realm of conceptual contemporary art. The Center itself runs an artist residency programme in Wendover, Utah, giving artists space and time to work with its archive on the topic of landscape and land use, and at the same time it steadily maintains its own rather scientific practice of collecting land use evidence in image form.

One of CLUI's most impressive projects is *The Trans-Alaska Pipeline*. It documents the entire length of the *"four-foot-wide, 800.32-mile long pipe, built by 70,000 individuals in a little more than two years between 1975 and 1977, costing \$8 billion in private money"*.²²⁰

²¹⁶ for example *Radical Nature: Art and Architecture for a Changing Planet 1969–2009*, exhibition curated by Francesco Manacorda, Barbican Art Gallery, London, Jun-Oct 2009.

And *Weather Report: Art and Climate Change*, exhibition curated by Lucy R. Lippard in collaboration with EcoArts, Boulder Museum of Contemporary Art, Boulder, Colorado, Sep – Dec 2007.

²¹⁷ Michael Ned Holte, "The Administrative Sublime, or The Center for Land Use Interpretation", *Afterall*, No 13, 2006, accessed online on 30 Aug 2014, <http://www.afterall.org/journal/issue.13/administrative.sublime.or.center.land.use.interpre>.

²¹⁸ The Center for Land Use Interpretation, organisation's website, accessed on 28 Aug 2014, <http://www.clui.org/section/about-center>.

²¹⁹ *ibid.*

²²⁰ The Center for Land Use Interpretation, "The Trans-Alaska Pipeline", webpage article, accessed on 12 May 2014, <http://clui.org/page/trans-alaska-pipeline>.



Figure 19: The Center for Land Use Interpretation (CLUI), *The Trans-Alaska Pipeline*, 2008, photoscape (detail). Photo: CLUI.

This pipeline is one of the longest in the world, and unique as a mega-structure: It is built almost entirely above ground because the permafrost soils of the Alaskan Arctic are unsuitable as a stable bed for underground steel pipelines carrying hot oil. This unusual visibility "*created the iconic image in space and our minds of a pipeline spanning the American wilderness, and everything that represents*"²²¹ and enabled the CLUI researchers to investigate it. The documentation traces this enormous object's physical presence, its functionality, its socioeconomic byproducts from tourism to road maintenance, and its environmental context. *The Trans-Alaska Pipeline*, as an exhibition and as a website-based "photoscape",²²² consists of 280 photos, taking the viewer on a journey from the oil fields of Prudhoe Bay on the northernmost edge of the USA through the vast expanses of Alaska to the port of Valdez, from where the crude oil is shipped.

Coolidge notes that the CLUI's investigation of place and landscape is a trialectic one, engaging with the located site ("ground-truthing" the documented place or object through fieldwork), with the "non-site" of the exhibition and book space, and with the "website" – the internet space which the documentation, once it has been put online, occupies.

"(...) you have this physical location that you can point at (that exists in space), you have the representation of it through books (physical material that samples, is directly related to it), then you have the hypertext – interconnected, web-mapped, reference-library access, everybody's flickr photos or whatever of the place – the non-dimensional representative space of that site. (...) this information space as a new realm (...) is like the physical location and like a representative interpretive version of it, but it is a kind of holistic and "omniscient" version. "Omniscient" in quotes because

²²¹ The Center for Land Use Interpretation, "The Trans-Alaska Pipeline. A Photoscape Exhibit", *CLUI Newsletter*, spring 2009, accessed online on 20 Mar 2014, <http://clui.org/newsletter/spring-2009/trans-alaska-pipeline>.

²²² The Center for Land Use Interpretation, *The Trans-Alaska Pipeline*, photoscape presentation, 2009, accessed online on 20 Mar 2014, <http://clui.org/page/trans-alaska-pipeline-0>.

*all it does is connect all those things together, including the locating of the site exactly through internet mapping systems.*²²³

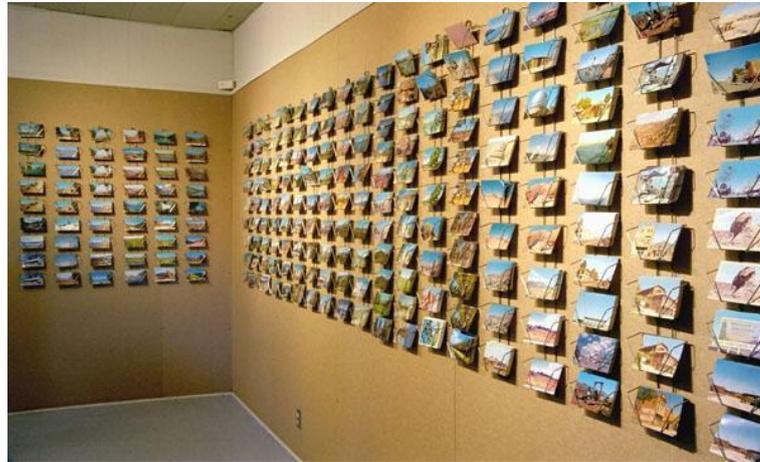


Figure 20: The Center for Land Use Interpretation (CLUI), *Territory in Photo-Color: The Post Cards of Marie Porter*, 1999, exhibition view. Photo: CLUI.

Given the internet space's rich technical possibilities for presenting visual and spatial information, for example through interactive maps, it is noticeable, however, how closely CLUI sticks to the idea of a traditional map or aerial photograph, and to the photo archive exhibition, throughout most of its projects: *The Trans-Alaska Pipeline* in its website appearance is essentially a straightforward slide show, not an elaborately multilayered digital map or database. Meanwhile, the Morgan Cowles Archive, which can be browsed on CLUI's website, groups its images thematically under headings such as "trees", "dams", or "road signs", each presenting a panorama of human engagement with these distinctive components of cultivated landscapes. CLUI's communication strategy here seems to rely on the power of analog, "real time" documentation and on the strong, repetitive structure of the photo archive format. In the case of *The Trans-Alaska Pipeline* this works particularly well, as it highlights the portrayed object's own extreme linearity, following its architectural and geographical expansion in a photographic "road movie". The photographs are clean and factual, focusing on their protagonist, hiding nothing, adding nothing. The sparse but accurate commentary encourages the viewer to connect and compare them, to find a story line in the images, or a friction between the images and their short explanatory texts. The chronological sequence of images, tracing diligently a journey along the entire length of the pipeline, transports a secondary but profound experience of its enormity for the viewer, inducing a feeling of intoxication mixed with boredom. The stream of photographs begins to pose questions regarding their selectiveness and interpretation, for no matter how detailed and orderly the documentation might be, there are also gaps and omissions: a picture is taken facing one direction and not the other, a short stretch of inaccessible terrain cannot be

²²³ Matthew Coolidge, in Amelia Taylor-Hochberg, "No Such Thing As Nowhere: Discussion with Matthew Coolidge, author of 'Around the Bay'", *Architect*, Sep 2013, accessed online on 30 Aug 2014, <http://architect.com/features/article/81536319/no-such-thing-as-nowhere-discussion-with-matthew-coolidge-author-of-around-the-bay>.

photographed, the pipeline disappears underground for a few kilometers, and the viewer is drawn deeper and deeper into this linear mapping movement of an object and of the registered and imaginable situations encountered along its edges. The project's apparent insistence on best-possible comprehensiveness, its dryness, its structured orderliness, and its ambivalent position between cultural science and conceptual art fine-tune the viewer's awareness of detail and potential meaning, making him or her suspicious about having missed something important in the staggering monotony of the pipeline's trail, and in the unexplored narrative detours embedded in the visual "encounters" with locations along this journey. CLUI's rather dry documentation of the Trans-Alaska Pipeline can in this way trigger a sharpening of the ecological, translocal view upon a single object. Moving through an area that, without the pipeline, would be regarded as "wilderness", the project quietly points out the intertwining of metaphysical, realist, and surface aspects of nature, as well as humanity's ultimate responsibility for the way it uses the land and its resources. Most interestingly, in CLUI's projects ecologies are revealed not by looking at the usual Nature protagonists in their habitats, but by focusing on human-made artifacts: CLUI is interested in objects, infrastructures, monuments of past and present economies, the products and detritus of human activities. With this approach it offers a visual, evidence-based proof of the ecological relationships of human-made artifacts, based on the understanding that an outside Nature does not exist and that all contemporary landscapes are influenced by human activities and thoughts.

CLUI's "deadpan"²²⁴ documentation style puts great emphasis on "ground-truthing"²²⁵ objects and sites through fieldwork and guided excursions. Rather than sensationalising and aestheticising the documented objects or landscapes, this merely offers, and performs through practice, a real-time observation methodology by which the Center *"aims to sharpen the individual's ability to effectively and critically read any landscape, as a legible impression of human influence"*.²²⁶ On the one hand, this approach is more subversively political than it may appear at first glance. Teaching people to see and decipher land use traces of all kinds on their own, making them aware of their cultural articulation and of the changeability of landscape and land use, is a political gesture, even though Coolidge puts the potential political agency of CLUI's work in rather understated terms:

*"I think one of the effects of understanding the landscapes we create and interpret, as a manufactured impression of a place, is that the way we see the world is as important as what we do to it. In that the construction of a view is also an awareness of an intent, and a value system, to govern actions and interactions."*²²⁷

²²⁴ "Like Bernd and Hilda Becher's mock-heroic images of anonymous grain elevators and water towers, the center's photographs, many of which are by Mr. Coolidge, are deadpan and foursquare on the surface but readily yield a sly wink or hint of melancholy." John Strausbaugh, "Take Nature, Add Humans, Observe Results", *The New York Times*, 24 Sep 2006, accessed online on 17 May, <http://www.nytimes.com/2006/09/24/arts/design/24stra.html?ref=design>.

²²⁵ Taylor-Hochberg, "No Such Thing As Nowhere", *Archinect*.

²²⁶ *ibid.*

²²⁷ Taylor-Hochberg, "No Such Thing As Nowhere", *Archinect*.

On the other hand, CLUI's quasi-scientific style of presenting its detailed observations of human-nonhuman relationships and their traces leaves the viewer alone to decide whether or not these forms of land use might be desirable in environmentalist and sociopolitical respect. Despite its contribution to a sharpening of ecological awareness, CLUI's position and intent comes across as not explicitly environmentalist but as rather neutral. Its projects for example do not judge the revealed land use patterns and correlations in regard to their environmental sustainability. From the audience's point of view CLUI thus balances on a fine interpretive line between presenting documentation of the controversial facts of contemporary land use and its problems, and delivering portraits of the infrastructural "grand achievements of the Nation". Matter-of-factness, perhaps a better word than neutrality, comes through in CLUI's exhibition practice, which can be described as the opening of an archive that has been taking stock of particular trails of land use evidence of the past and present. Repetitiveness and simplicity in the linear or gridded ordering of the archive's visual and contextual information enable direct comparison between images, the recognition of patterns, and thus – potentially – the identification of systemic correlations in the human-nonhuman relationships presented through land use evidence. However, in my view there is a risk that the distanced observation and mirroring of documented "proofs of reality" in CLUI's exhibitions might not meet the challenge of presenting not only "stocks" but also a sense of "flow", and thus the possibility of change. For the unspecialised viewer, who is not already well-practiced in reading dynamic systems in the landscape, the exhibitions might deliver merely static images of cultural landscapes, while their function as evidence of systemic patterns might remain undiscovered, due to CLUI's non-didactic presentation approach. It seems to me that in CLUI's exhibition format the observed objects' impacts, histories, and potentialities as ecological agents are perhaps not correlated and cross-referenced far enough beyond their rather stiff thematic and geographical order, and that they are also not projecting these objects and landscapes far enough into the future. The presentation of the ecological and political agency of human artifacts and cultural expressions in direct relationship with the land, in my view, just by exhibition itself remains too understated to unfold a more directly ecocritical and political position. It is therefore a very important additional aspect of CLUI's practice to publish their research as books, to provide specialist excursions to their sites which provide contextual background and opportunity for discussion, and to invite artists and scientists to work freely with their archive through the Wendover residency programme.



Figure 21: The Center for Land Use Interpretation's exhibition space in Los Angeles, installation view, 2005. Photo: CLUI.

Leaving it to the viewer to decide whether a particular treatment of the land is regarded as success story or as unfolding catastrophe, CLUI opts out of a more directly activist and educational positioning – a political gesture in itself, and in CLUI's view not an indication of neutrality:

*"We make no claims of being neutral. Neutrality is a platonic state, achievable only in theory. I would consent that we are more neutral-appearing than most others involved in "land use" issues, where most organizations exist to push politics and policy in one direction. Since much of the world works through political dynamics, that makes sense. But advocacy and activism can take many forms. Change also comes about through our "hearts and minds" as they say."*²²⁸

Amelia Taylor-Hochberg's description of the Center's practice as *"apolitical yet provocative"*²²⁹ could thus be contested, considering CLUI's take on "advocacy" and political agency, which relies more on the subversive long-term effects of expanded modes of seeing upon the viewers' critical agency than on direct environmentalist criticism.²³⁰ I would see the Center's work, conversely, as "political yet non-provocative" – the non-provocation being one of two points of critique I have with its practice: In my view, the stoic matter-of-factness of CLUI's images in their accumulation, although they are explicitly not intended as artistic photographs, possibly leaves too much room for the aestheticisation of land cultivation and exploitation through the evocation of a "sublime" interpretation that weakens the critical agency of the viewer. Although they appear comparatively subdued and "grounded", they

²²⁸ Matthew Coolidge, in Matthew Carson, "The Center for Land Use Interpretation – Interview with Matt Coolidge", *The International Center of Photography Library Blog*, blog entry, 1 Jul 2011, accessed online on 3 Sep 2014, <http://icplibrary.wordpress.com/2011/07/01/clui/>.

²²⁹ Taylor-Hochberg, "No Such Thing As Nowhere", *Archinect*.

²³⁰ As Michael Ned Holte sees it, "(...) the Center has a political outlook that is seemingly one of willful neutrality." Michael Ned Holte, "The Administrative Sublime, or The Center for Land Use Interpretation", *Afterall*, No 13, 2006, accessed online on 30 Aug 2014, <http://www.afterall.org/journal/issue.13/administrative.sublime.or.center.land.use.interpre>.

might be read in a similar direction as for example Edward Burtynsky's highly aestheticising photographs of mining pits and tar sands.²³¹ The reading as "sublime", inspiring awe of the nonhuman while reconfirming the superiority of man, could suggest a "darkly" celebratory rather than critical consideration of land use strategies, whose documentation in image form, inadvertently or not, describes them in many cases as strangely beautiful "landscapes". Adding to this, particularly in North America the history of land use is a history of frontiers, submission of the "wild", and unrestrained land consumption. A more explicitly critical position towards destructive types of land use and territorial conflicts as culturally formative practices might be needed in order to challenge the deeply entrenched notion that land and resources are unlimited and free to use, if they can be conquered. In connection to this thought regarding territoriality, my second point of critique is that CLUI's self-limitation to landscapes and objects exclusively within the USA prevents it from expanding its research into the today very necessary investigation of the transnational and transcontinental ecological codependencies of land use developments.²³²

Considering the context of the currently unfolding global ecological crisis it seems that at these two points a documentary approach such as CLUI's, understood as a thoroughly investigative ecocritical research strategy, could go even further: Firstly by expanding research activities beyond national borders and a "national psyche", and secondly by using the collected material in more decisively critical, advisory, and possibly confrontational ways, clearly addressing the ecological and systemic problems and particularities of historical, present, and future land uses. The great ecocritical potential of documentary rigour, for which CLUI is a strong example, in my view is to deliver an evidence based critical evaluation of an archive's amassed observations, to apply these findings to practical ecology and political processes, and to develop a strong ecocritical and ecopolitical position out of the acquired specialist knowledge. In the context of unfolding climate change this knowledge, developed on the basis of long-term thorough visual research, could be of considerable and direct impact, if it participates actively for example in the discussion and planning of necessary land use changes for the very near future.

²³¹ This perspective can be detected for example in Holte's article. Ned Holte, "The Administrative Sublime", *Afterall*. Edward Burtynsky, artist's website, accessed on 3 Sep 2014, <http://www.edwardburtynsky.com>.

²³² The transnational approach, however, so far has been ruled out by Coolidge: "No plans to expand into other countries, at least not in a systematic way, applying the same level of research to another national landscape. What we do is about the USA, about "Americans" and "America". Not that "America" doesn't have a global impact, but because of it, perhaps. We don't feel like it's within our mission, or permission, to expand into other countries. But we certainly would encourage others to get to know their home turf in a similar way, if they desire, and to get in touch with us, and the rest of the world, when they feel they have done so." Matthew Coolidge. In Carson, "The Center for Land Use Interpretation – Interview with Matt Coolidge". *The International Center of Photography Library Blog*.

3.3.2 Platform London: Building activist agency by sharing information about systemic relations

Platform London is an interdisciplinary collective of artists, campaigners, researchers and educators whose work concentrates on global environmental issues, human rights, and on the entanglement of art institutions with international corporations playing a major role in the unfolding ecological crisis. Based in London and now over 25 years old, the collective carries out long-term research projects specialising on the social, economic and environmental impacts of the global oil industry, for example in Uganda, Sachalin Island, and Canada. The organisation aims to utilise the power of art and performance as a communication tool and experimental format for the presentation and discussion of their research and engagement – as shown recently in its exhibition and event programme *C Words: Carbon, Climate, Capital, Culture* at Arnolfini, Bristol.²³³ Platform's work has been presented in a diverse range of public and institutional contexts, for example at the South Bank Centre, Glastonbury Festival, Tate Gallery, Camp for Climate Action, Serpentine Gallery, Free University of Liverpool, New Art Exchange, or Arnolfini.

Platform understands itself as an organisation combining art, research, political activism and education in equal parts. The group's intention is to foster individual critical agency and to help building social movements. Its approach strongly draws from investigative journalism and environmental campaigning, using local knowledge, direct observation, interviews, and the information networks and data bases of various disciplines.

*"The purpose of Platform's research is to explore what needs to change for the better, and how to change it. Our research is practical and geared towards social and ecological justice. Based on our research we make concrete recommendations that tackle the root causes of problems."*²³⁴

Platform follows a participative and activist artistic practice that occasionally uses institutions as public platforms for the communication of its work, but otherwise operates mostly outside of the mechanisms of the institutional art context. The group offers workshops and courses (for example addressing art and activism, ethical funding, or finance and climate change), organises events and exhibitions involving artists as well as activist groups, and has published several books presenting its research into the global oil industry. The performative aspect of its practice expands across activist events, community involvement, and the participation in international research projects and environmentalist collaborations, such as the Art Not Oil Coalition.²³⁵

²³³ *C Words: Carbon, Climate, Capital, Culture*, exhibition and event programme, curated by Platform London, Arnolfini, Bristol, Oct–Nov 2009.

²³⁴ Platform London, organisation's website, accessed on 30 Aug 2014, <http://platformlondon.org/about-us/platform-research/>.

²³⁵ Art Not Oil Coalition, organisation's website and project blog, accessed 18 Aug 2014, <http://www.artnotoil.org.uk/blog/25-portraits-oil-national-portrait-gallery-protest-over-bp-portrait-award>.

In one of its long-term projects, *The Carbon Web*, Platform has conducted investigative research into the systemic connections between the financial, political, legal, and technological services of the City of London, and the infrastructures that produce, transport, refine, and sell oil and gas worldwide.²³⁶ *The Carbon Web* maps the relationships between oil and gas companies, government departments, cultural institutions, banks, and other players, and reveal their direct or indirect complicity with human rights violations and environmental degradation as the shadow side of oil and gas extraction. The project's aim is ultimately directly activist: "*The Carbon Web is key to our understanding of how the corporations function. It is a tool that helps campaigners find points of intervention against the oil industry.*"²³⁷

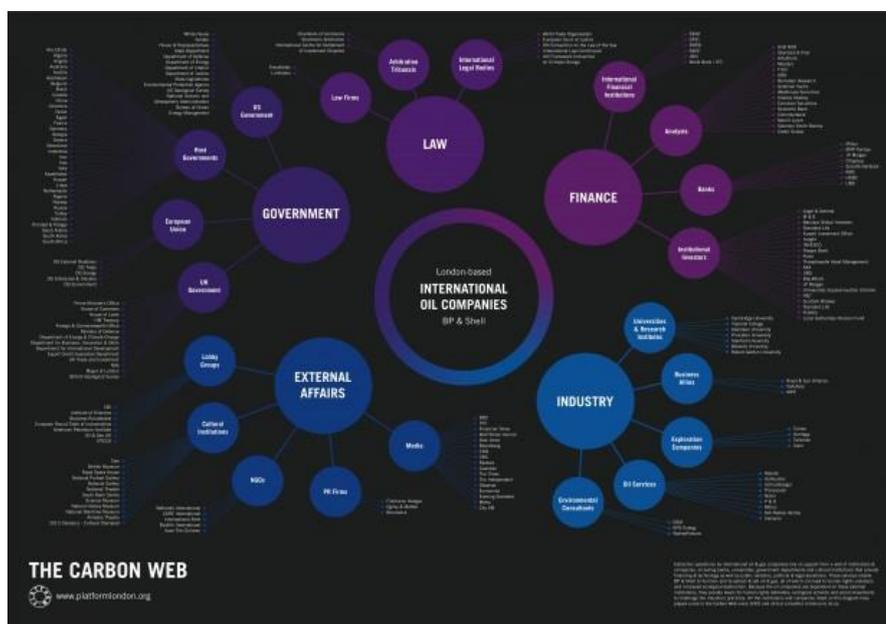


Figure 22: Platform London, *The Carbon Web*, 2010, infographic.

The Carbon Web's research output exists as a number of reports and books, for example *The Oil Road* by James Marriott and Mika Minio-Paluello,²³⁸ and as a series of infographics visualising the web of agents in the extended oil business. Translating its findings into political activism, Platform has recently been involved for example in campaigning against the Tate Gallery's continuing dependency on BP sponsorship, or against the Royal Bank of Scotland's financing of oil extraction under very questionable social and environmental local conditions. Concentrating on the various forms of dependency surrounding one main substance of concern – crude oil – *The Carbon Web* traces the ecological agency of this entity and of the (dys)functional system created around it.

²³⁶ Platform London, organisations' website, accessed on 30 Aug 2014, <http://platformlondon.org/about-us/platform-the-carbon-web/>.

²³⁷ *Ibid.*

²³⁸ James Marriott and Mika Minio-Paluello, *The Oil Road. Journeys from the Caspian Sea to the City of London*, (London: Verso, 2012).

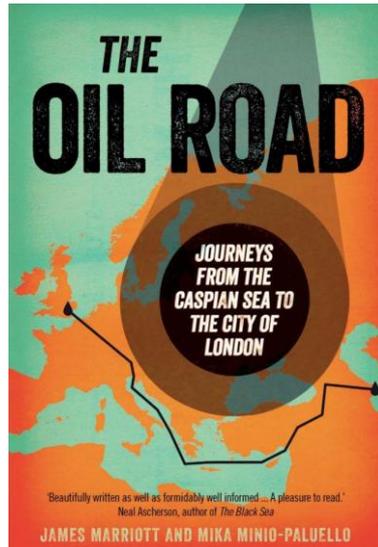


Figure 23: James Marriot and Mika Minnio-Paluello, *The Oil Road. Journeys from the Caspian Sea to the City of London*, 2012, book cover.



Figure 24: Platform London, *Picture This - A Portrait of 25 Years of BP Sponsorship*, 2014, book cover.

As Platform's ultimate aim is not only to describe social-ecological and economic relationships, but also to change them, its approach and language is much more politically explicit than for example CLUI's. Where CLUI documents systemic components without directly judging them, Platform criticises and exposes the systemic behaviour of specific political, financial, and cultural agents and explains the ways in which they are environmentally, economically, and ethically unsustainable. Platform's position towards art institutions for example is fiercely critical where they show themselves as complicit with the same capitalist logic as the one demanding the exploitation of oil workers in Uganda. Platform is thus deeply engaged in the investigation and critique of the ecologies of political, corporate, and cultural players, revealing their influence on cultural and ecological contexts that appear far removed from their centres of power, but are intimately connected. The systemic relationships revealed through Platform's investigations reach a level of detail, complexity, ambivalence, and virtuality, at which their representation and communication starts to present a considerable challenge for visual art practice. Platform responds to this by also producing reports, books, infographics, documentaries, social media presentations, and symposia – parallel formats which share the task of representation, information, and discussion. In the absence of single iconic art objects, Platform's artistic agency expresses itself through intervention, publication, protest, discussion, and truth-finding, and can be understood as a generating of investigative and political energy, directed towards an improved organisation of human-nonhuman ecologies in regard to social and ecological justice.



Figure 25: Art Not Oil Coalition, *Portraits in Oil*, 2014, protest performance preceding the BP Portrait Award, National Portrait Gallery, London. Photo: Art Not Oil.



Figure 26: Platform London, protest performance outside Shell's Annual General Meeting, London, 2014. Photo: Martin LeSanto-Smith.

Platform's activist and educational approach seems to have become even more pronounced after the reflection of its exhibition *C Words: Carbon, Climate, Capital, Culture*. In 2009, the group developed and staged a 50-day exhibition and events programme at Arnolfini in Bristol. Its artistic strategy consisted of providing the space, time and curatorial structure for a pooling of diverse artistic and activist responses to the problem field of carbon dependency, particularly including current debates about climate change. *C Words* presented the work of seven commissioned artist/activist groups, and offered workshops, talks and communication platforms for further guest participants and the visitors. The strongly relational and participative concept blurred the lines between art, activism, education, and research, and thus perfectly mirrored Platform's own working methodology: *"We did what we do, but in a public gallery, which is to enable conversations, skill-shares, trainings, performances, installations, poetry-readings, screened films, hosted walks, and meals. We spoke to 100s of people. (...) We improvised, got things wrong, got things right, made new colleagues, fostered new networks."*²³⁹

²³⁹ Jane Trowell, "Disgust, Integrity, Solidarity", *The Live Art Almanac*, Vol.2, Mar 2011, accessed online on 20 Aug 2014, <http://platformlondon.org/p-article/disgust-cwords-arnolfini-jane-trowell/>.



Figure 27: Ackroyd & Harvey, *The Walking Forest*, 2009, installation view at *C Words: Carbon, Climate, Capital, Culture*, Arnolfini, Bristol. Photo: Platform London.



Figure 28: The Institute for the Art & Practice of Dissent at Home, 2009, installation view at *C Words: Carbon, Climate, Capital, Culture*, Arnolfini, Bristol, 2009. Photo: Platform London.



Figure 29: Laboratory of Insurrectionary Imagination, *Becoming the Bike Bloc*, 2009, event at *C Words: Carbon, Climate, Capital, Culture*, Arnolfini, Bristol. Photo: Platform London.

The exhibition provided a forum for a variety of artistic and environmentalist statements as well as for the public's engagement – a curated "speakers' corner" for eco-art and activism. *"C Words aims to be a usefully provocative contribution across all these contexts: as art, as social process, as an opportunity to learn, and an urgent catalyst for change."*²⁴⁰ The artistic and activist practices shown in *C Words* thus had an explicit intent to present the problem field and shared concern of the exhibition through discourse and debate, and beyond primarily aesthetic and formal artistic positions. In the setting of a public art institution such as Arnolfini, this led to misunderstandings regarding the nature of the artistic strategies that were being employed and presented, a challenge which Platform chose deliberately:

*"To present our practice in a gallery on this scale was a massive experiment, and one we undertook after months of discussion, and in the face of some serious misgivings from some colleagues."*²⁴¹

The main point at which *C Words* disappointed the expectations of visitors, and of "the artworld", seems to have been its undistanced, non-ironic, and unglamorous approach of the topic of carbon dependency. Instead of producing an aesthetic shield between its thematic concerns and its audience, Platform's practice was here presenting itself, through the participants' contributions, as actively (not abstractly or ironically) engaging with environmental and economic justice, as low-brow, anchored in practical ecology, participatively motivated, as unconform with certain aesthetic expectations regarding contemporary art and its presentation in institutional settings, and also as explicitly critical of the alliances and implications of art institutions in the context of discourses about social and ecopolitical change.²⁴² The aesthetic "desaster" of the *C Words* exhibition, which seemed to split "art" and "activism" into two entirely distinct blocks of agency in the minds of many viewers,²⁴³ confirmed by experience the validity of Platform's own questioning of the role of art in inspiring social change – the role it might want to play, and the role it is allowed or expected to play. The exhibition itself appears to have been unable to respond immediately to this emerging metadiscussion, possibly also because not all the participants in the exhibition might have been good or interesting choices that could or would participate as both artists and activists in such a (self)critical exchange. In hindsight, however, Platform's own reflections on *C Words*, as for example expressed on its blog site, produced deeper insight into what kind of agency such a "conference" of activist art projects could contribute to ecocritical artistic and curatorial practice. For Platform, the consequence of this conflicted encounter with an art institution and its audience seems to have been to place stronger emphasis on the research, activist, and educational strands of the group's practice, understood as artistic practice but not necessarily acting within the institutional art context.

²⁴⁰ Platform London, *C Words: Carbon, Climate, Capital, Culture*, exhibition brochure, Arnolfini, Bristol, 2009.

²⁴¹ Trowell, "C Words: Disgust, Integrity, Solidarity", *The Live Art Almanac*.

²⁴² In particular, Platform has been pointing towards the internal dilemma and hypocrisy of a contemporary art "world" that is railing against "the system" on the one hand, and is being financed and supported by social and economic groups that participate in creating and upholding injustice, elitism and oppression on the other hand.

²⁴³ Trowell, "C Words: Disgust, Integrity, Solidarity", *The Live Art Almanac*.

In my view the format of *C Words* as an art/activism "conference season" has provided important experiences and differentiations regarding methodological and aesthetic questions for ecocritical exhibition making and the visualisation of artistic and activist research, and regarding the beliefs, potentialities, and limitations of both art and activism, by letting them challenge and test each other. As the opening speech of the exhibition seemed to predict with astonishing directness, the resulting clashes, expressed for example in the intended or unintended aesthetic provocation of *C Words*, might be no more and no less than indicators for unattended business:

*"But I think the feeling of something like disgust, if it happens, is significant, and almost to be welcomed. It's an uncontrolled response that says some tacit rule or historical procedure is being unobserved. Differences haven't been smoothed out, already negotiated or sidestepped."*²⁴⁴

Platform's provocatively sincere work has been invaluable here as facilitator of cacophonous meetings of motivations, expectations, and means of expression that point towards important and uncomfortable discussions still waiting to be held in the field of contemporary art.

3.3.3 Ursula Biemann: The investigation and composition of agent networks through the video essay

Ursula Biemann explores contested transnational territories, shaped and marked by the flow of resources, people, and money. In the role of an "*anthropologist, journalist and secret intelligence agent*",²⁴⁵ she investigates the concept of borders, contemporary forms of migration, material flows and resource exploitation, and their reasons and consequences. Biemann's work is based on fieldwork documentations of sites and situations, as well as on archival research into geopolitical topics such as the social-ecological effects of globalisation, oil production, and climate change. From the collected research material she produces video essays and books, in which she sets out to tell those parts of her research subjects' stories that are deemed too confusing or too marginal to be included in the main discussions of politics or the media. Her approach speculates that the details and subplots of her chosen topics and their counter-narratives to the mainstream interpretations are vitally important because they might contain essential clues to the potential future development of complex situations. One of the most frequently overlooked issues in geopolitics for example is in her view the social and economic status of women, and its impact on economic development, which is why Biemann's work also directs a particular focus upon questions regarding feminism and female migrant labour under the influence of neoliberal capitalism.

²⁴⁴ Wallace Heim, opening speech for *C Words*, quoted in Trowell, "C Words: Disgust, Integrity, Solidarity".

²⁴⁵ Ursula Biemann, artist's website, accessed on 15 Feb 2014, <http://www.geobodies.org>.

Biemann collaborates internationally with researchers, artists, writers, and curators on projects such as *B-Zone – Becoming Europe and Beyond*.²⁴⁶ *B-Zone* explores large transnational infrastructures across former communist states, which are based on industry (oil pipelines), technology (telecommunication and satellite systems), and people (historical and current migratory routes). Most recently in 2013, Biemann has co-founded the research group *World of Matter*, which offers a website-based "open access archive on the global ecologies of resource exploitation and circulation",²⁴⁷ gathering the work and research of 14 artists, urbanists, cultural theorists, and anthropologists.²⁴⁸

Biemann's individual work is shown in gallery exhibitions as well as in non-artistic contexts such as conferences of trade unions, expert panels for international relations and environmental diplomacy, and roundtables in the field of geopolitical research. The artist understands interdisciplinarity as necessary approach to overcome a deeply rooted destructive world order. Art is regarded by her as specialist tool to get to know the world by reorganising existing information and knowledge, shaping it into a complex aesthetic product offering new meanings. However, Biemann also maintains that ecological and geopolitical complexity cannot be addressed by a reduction to conceptual artworks or "icons".²⁴⁹ The video essay is considered by her to be capable of delivering a sensual compression of layers of information (simultaneous visual, auditive, temporal, narrative experiences) without being a reduction. Its format allows the artist to work non-linearly and to compose a subjective interpretation of fieldwork material that is able to show interconnected but geographically or temporally distant events simultaneously and in juxtaposition, thereby creating a personal discourse rather than a "true" image of the investigated situations. Where a direct visual experience of certain field components is impossible, for example due to restricted access to territories of conflict, Biemann uses secondary material found on the internet, in interviews with witnesses, or in the news, weaving them into the video essay as alternative documentations of these inaccessible areas. The underlying subjectivity of this found material is added to the subjectivity of the artist. Despite this intense investigation of sites, Biemann sees her work as symbolic production which happens largely inside the studio, and not as intervention in the social reality of her field contexts.²⁵⁰ Nevertheless she regards her production of subjective contextual interpretations as direct contribution to the imaginative and political construction of the world. Presenting highly reflected visual management systems of information, observations, and thoughts, her video essays appear to aim at intervening in the audience field (through the exhibition), rather than in the location field of her research (through direct participation).

²⁴⁶ *B-Zone – Becoming Europe and Beyond*, 2005, research project with Angela Melitopoulos and Lisa Parks, documented on artist's website, accessed on 29 Jan 2014, <http://www.geobodies.org/books-and-texts/b-zone>.

²⁴⁷ *World of Matter*, organisations' website, accessed on 15 Feb 2014, <http://www.worldofmatter.net/>.

²⁴⁸ *World of Matter – On the Global Ecologies of Raw Material*, exhibition at HMKV Dortmund, Mar–Jun 2014 and James Gallery, CUNY Graduate Center, New York, Sep–Nov 2014.

²⁴⁹ "Soziale Transformationsprozesse und ihre theoretischen Artikulationen sollten nicht zu Ikonen reduziert werden." Ursula Biemann, *Mission Reports. Künstlerische Praxis im Feld. Videoarbeiten 1999-2011* (Nürnberg: Verlag für Moderne Kunst, 2012), 10.

²⁵⁰ According to the artist, for every two weeks of fieldwork roughly a year is spent in the editing suite, processing and recombining the material. Biemann, *Mission Reports. Künstlerische Praxis im Feld*, 13.



Figure 30: Ursula Biemann, *Deep Weather*, 2013, video still, showing the tar sands in Canada.



Figure 31: Ursula Biemann, *Deep Weather*, 2013, video still, showing the construction of flood barriers in Bangladesh.



Figure 32: Ursula Biemann, *Deep Weather*, 2013, video still, portraits of construction workers building flood barriers in Bangladesh.

The video *Deep Weather*, for example, powerfully juxtaposes the artist's field-based documentation of the most destructive and technology-intensive form of oil extraction on the planet, the Northern Canadian tar sands, with her observation of hundreds of workers building flood barriers in Bangladesh with their bare hands.

The aesthetic format of the video essay, in its discursive composition, mirrors both Biemann's subtle mediation between the location field and the audience field and the structural complexity of the interwoven thematic contents which the work refers to. There is no overall narrative or authoritative voice binding the video's components together, all interpretive connections are made through association, imagination, and cross-referencing of material. In the exhibition context, videos are shown on split-screens or divided into several asynchrone video loops on separate monitors, in variable configurations, an arrangement which constantly creates new visual and narrative connections. Within the individual videos, fieldwork footage material is layered with moving text fragments, maps, graphic elements, subtitles and commentary which may however also be referring to a scene outside of the current image on screen. The aim is to create "*dissociative, multi-perspectival and hypertextual*" videos²⁵¹ which move and transgress borders – as a medium as much as thematically, exploring migratory and relational dynamics: "*The essayistic approach does not aim to document facts, but to organise complexity.*"²⁵²

As T.J. Demos observes, "*The essay form emphasizes video's discursive condition, one that is composite and that overcomes positing the image as documentary or aesthetic. Rather, it's indissolubly both.*"²⁵³



Figure 33: Ursula Biemann, *Black Sea Files*, 2005, video still.

²⁵¹ Ursula Biemann, "Performing Borders: The Transnational Video", In Ursula Biemann (editor), *Stuff It. The Video Essay in the Digital Age* (Zürich: Institute for Theory of Art and Design, 2003), 83.

²⁵² *ibid.*, 83.

²⁵³ T.J. Demos, "Sahara Chronicle: Video's Migrant Geography", In Ursula Biemann and Jan-Erik Lundström (editors), *Mission Reports. Artistic Practice in the Field: The Video Works of Ursula Biemann*, (Bildmuseet Umea and Arnolfini Bristol: Cornerhouse Publishers, 2008), 181.

Demos describes Biemann's work as a transformation of documentary practice with the potential to not only record but to actively form new histories and realities, and sees this as having a positive effect on individual agency:

"It would mean defining the documentary's ambition as not only the representation but constitution of reality, inspiring belief in the world of its own constructions. This is, in my view, the ambitious achievement of Biemann's video practice."²⁵⁴

"What results is a new mode of address that replaces the stultifying conventions of truth-telling with the transformative capacity of representation to shift perspectives and invite collaborative and creative interpretation."²⁵⁵

This reading points towards an aspect of Biemann's work that could turn out to work in opposition to her more informational, quasi-journalistic intentions as researcher of agent networks in practical ecology, and problematises the process of her mediation between location field and audience field. Stressing the creative possibilities of essayistic documentation and interpretation, as Demos suggests, in my view might contain the risk that the constructed semi-fictional systems might include only those elements which fit the overall composition, neglecting or modifying those that (aesthetically or conceptually) disturb or contradict it, that are "too much", "too long", or otherwise incompatible. The composition's desire to achieve a form (an essay, an argument, or a collage), might override the scientific (or journalistic) ideal of a nonhierarchical treatment of the observed relationships. Although it might indeed be essential to simplify and order complexities to enable systemic overview, prioritisation, and decisionmaking, the selective creation of "realities" always entails a problematic foreshortening, in ecology models as well as in ecocritical works of art. On the side of the audience, the work's compression and selection of material requires from the viewer a considerable criticality and contextual thematic knowledge, and their active comparison with the interpretive representation which the artist offers, in order to avoid an undue simplification or individual misreading of what is being discussed in the work (leading to an iconisation of issues). While Demos is right in pointing out the important activating and mind-changing potential of an essayistic documentary that reaches out to the audience's imaginative participation, *"inspiring belief in the world of its (the video's) own constructions"* could also amount to *"installing in the audience the belief in a world they have created themselves."*²⁵⁶ The video essay's capacity for a *"constitution of reality"*²⁵⁷ could thus also potentially foster an illusion of world creating power that sidesteps a relentless confrontation with the overwhelming and "stultifying" complexities and restrictions of practical ecology. In my view, the "rendering" which occurs in the composition of the video essay could direct the

²⁵⁴ T.J. Demos, "Sahara Chronicle: Video's Migrant Geography", In Biemann and Lundström, *Mission Reports. Artistic Practice in the Field*, 184.

²⁵⁵ *ibid.*, 182.

²⁵⁶ This phrase is my re-translation of the same text passage from Demos' essay in its German translation. T.J. Demos, "Sahara Chronicle: Migrantische Geografie in Ursula Biemanns Videoessays", In Biemann, *Mission Reports. Künstlerische Praxis im Feld*, 189.

²⁵⁷ Demos, "Sahara Chronicle: Video's Migrant Geography", In Biemann and Lundström, *Mission Reports. Artistic Practice in the Field*, 184.

viewer's engagement strongly towards the metaphysical and surface aspects of his/her ecological involvement in the presented "world", while neglecting those realist aspects and their demands upon individual decisionmaking that are situated outside of this aesthetic relationship. This problem of mediation between field context and representational context might be heightened by the extraordinary field contexts through which Biemann is moving – their landscapes, situations, objects, and people appear far away, even exotic. The aesthetic distance towards the field constellation that is potentially produced here reminds of James Clifford's observation in *The Predicament of Culture*, regarding Malinowski's anthropological "rendering" of the Trobrianders through his scientific evaluation and editing of field notes, which stands in sharp contrast to the recorded experiences during his actual fieldwork:

*"One is tempted to propose that ethnographic comprehension (a coherent position of sympathy and hermeneutic engagement) is better seen as a creation of ethnographic writing than as a consistent quality of ethnographic experience. In any event what Malinowski achieved in writing was simultaneously (1) the fictional invention of the Trobrianders from a mass of field notes, documents, memories, and so forth, and (2) the construction of a new public figure, the anthropologist as fieldworker (...)."*²⁵⁸

To order, compose, and represent complexity without reducing it to an iconised concept is an intrinsic challenge for ecocritical art that Biemann is very aware of. Similar perhaps to Malinowski's authoritative scientific writing, her exhibitions are spatially and conceptually highly structural, dense presentations of individual research and its interpretation, showing and reflecting the complexity of each project's research subject, as well as reflecting the perception of complexity itself. Every visual detail here is controlled, chosen, edited, and formed into networks of knowledge and meaning. Despite a certain danger of distancing the subject matter of the actual field contexts through this aesthetic formgiving in full control of the image, Biemann's work also challenges habitual modes of information management, interpretation, and distribution. She works against the risks of installing a dominant compositional view by juxtaposing her videos with other layers of visual information and with each other, on split-screens, on rows of monitors, or by spatially installing them in a way that guarantees their visual interference with each other. The wealth of stories and information levels embedded in the video loops' simultaneity and multiplicity, their different speeds, and their constant recombination of moving images in the exhibition space questions the constructability of any single perspective or "world" which might be read into an individual video essay.

²⁵⁸ Clifford, *The Predicament of Culture*, 110.



Figure 34: Ursula Biemann, *Sahara Chronicle*, 2006–2009, installation view, Kunsthhaus Bern.



Figure 35: Ursula Biemann, *Black Sea Files*, 2007, installation view, Peacock Gallery, Aberdeen.

The exhibition thus adds a very important balancing layer to Biemann's work. It encourages an important informative and methodological expansion of knowledge regarding concrete, located and moving ecological agents, both using and questioning the images of the field, and filtering them through the artist as a transmitter and re-composer of their potentialities for the observed subjects, objects, and their relations. Where CLUI leaves the act of combination and cross-reference of images and information entirely to the viewer, and where Platform does most of this interpretative work for the viewer (or reader), Biemann presents an opportunity to follow her personal cross-referencing of visual information and also to depart from it and discover new correlations or limitations.

3.3.4 The Potosí Principle: Revealing the systemic complicity of images through the discursive exhibition

The exhibition *The Potosí Principle. How Can We Sing the Song of the Lord in an Alien Land?*,²⁵⁹ curated by artists Alice Creischer and Andreas Siekmann, and writer Max Jorge Hinderer, investigated the ideologising power of artworks in a colonial context at the dawn of modern capitalism, and compared this historical role of artistic representations with contemporary art's legitimisation of and participation in today's neoliberalist exploitation patterns. Through the exhibition and research process artworks were observed as active agents in a system of ideologies, their agencies intertwined with networks of political and economic stakeholders and the forces that drive them:

*"The images of Potosí are a shimmering reflection of an extremely violent settlement policy, whose primary purpose was the reproduction and monopolization of labor. We make the claim that there are parallels between the ideological function of colonial-era painting and the modern-day function assumed by art – that of legitimizing the elite of globalization."*²⁶⁰

The Potosí Principle's widely contextualising argument was anchored by the critical study of historical paintings depicting life in the legendary city of Potosí in Bolivia. Potosí's international fame was based on the discovery of its silver resources by the Spanish colonial rulers, and on the mine's subsequent exploitation from the 16th to the 19th century. The city, more populous during its colonial time than London or Madrid, was extremely wealthy, but in the shadow of its success indigenous labourers and imported slaves had to endure horrifically exploitative working and living conditions. The city's high altitude at over 4000 meters above sea level, combined with backbreaking work in the mines and pollution with quicksilver and arsen (both used in silver processing) for many made this a deadly place to live in. Even today silver is still mined from Cerro Rico, the mountain rising above Potosí, under questionable health and safety regulations and low environmental standards. After over 400 years of mining, the Cerro Rico is now, according to recent evaluations by engineers, entirely hollowed out and on the brink of collapse.²⁶¹ In colonial times, Potosí and its products were of great influence for the development of the idea and practices of capitalism in Europe, particularly the commodification of human labour. The large amounts of imported silver from Potosí lowered its price dramatically and supported a lifestyle of affluence in Europe's elites that was paid for by the lives of thousands of workers and slaves in a far-away land, used and discarded like raw material. To reveal the systemic character of

²⁵⁹ *The Potosí Principle. How Can We Sing the Song of the Lord in an Alien Land?*, exhibition curated by Alice Creischer, Andreas Siekmann and Max Jorge Hinderer at Museo Nacional Centro de Arte Reina Sofía, Madrid, 2010, Haus der Kulturen der Welt, Berlin, 2010/11, Museo Nacional de Arte and Museo Nacional de Etnografía y Folklore, La Paz, 2011.

²⁶⁰ Alice Creischer, Andreas Siekmann and Max Jorge Hinderer, "The Potosí Principle", exhibition announcement, *e-flux*, 1 Oct 2010, accessed on 15. Feb 2014, <http://www.e-flux.com/announcements/the-potosi-principle/>.

²⁶¹ Juan Forero, "Bolivia's silver mountain loses its lustre as report warns of risk of collapse", *The Guardian Weekly*, 2 Oct 2012, accessed online on 17 May 2014, <http://www.theguardian.com/world/2012/oct/02/bolivia-potosi-mountain-silver-mining>.

the correlations between these early beginnings of global capitalism and its exponential acceleration ever since, and the involvement of artistic representations in this process, has been the main emphasis of *The Potosí Principle*.²⁶²

Creischer, Hinderer and Siekmann focused their exhibition's argument around pictorial representations of Potosí from the 17th and 18th centuries, examining twenty paintings of the so-called "Andes Baroque". Produced by unknown indigenous artists in workshops supervised by the Spanish rulers, they formed the core of the exhibition. The paintings are primarily religious, heavily influenced by Christian iconography, but also portray the city itself, its organisation, its economic and infrastructural circuits, and the hidden or open violence behind its economic successes. The exhibition's contextual investigation gradually unfolded their participation in the creation of Potosí as a place, icon, "*principio*", and embodiment of a particular form of political economy. Max Jorge Hinderer has noted that the Spanish title, *Principio Potosí*, expresses this notion of emergence and co-creation better than the English or German title: "*Principio*" in Spanish can mean "principle" as well as "beginning".²⁶³



Figure 36: Gaspar Miguel de Berrío, *Descripción del Cerro Rico e Imperial Villa de Potosí*, 1757. Photo: Andrés Unterladstaetter. The painting shows the city of Potosí beneath the mountain Cerro Rico and its silver mine, a series of dams and reservoirs in the mountains on the left, and silver processing workshops on the right.

²⁶² Alice Creischer, Max Jorge Hinderer, and Andreas Siekmann (editors), *The Potosí Principle. How Can We Sing the Song of the Lord in an Alien Land?* (Cologne: Walther König, 2010), exhibition catalogue.

"Potosí", *Wikipedia*, accessed on 28 Aug 2014, <http://en.wikipedia.org/wiki/Potos%C3%AD>.

"The Potosí Principle Process Blog", official blog, accessed on 18 Jun 2014,

<http://potosiprincipleprocess.wordpress.com/>.

²⁶³ Max Jorge Hinderer, "The Potosí Principle' – Alice Creischer, Max Jorge Hinderer and Andreas Siekmann – full video", video documentation of artists' talk, 20 Feb 2012, *Afterall Online*, accessed on 15 Feb 2014, <http://www.afterall.org/online/the-potosi-principle-alice-creischer-max-jorge-hinderer-and-andreas-siekmann-full-video/#.U3YjnJvgCfMref>.



Figure 37: Anonymous, *Virgen del Cerro*, 1720.
Photo: Andrés Unterladstätter.

Creischer, Siekmann, and Hinderer invited 30 contemporary artists to respond and add to the critical questions that they were raising through the paintings, and to extend the story of Potosí and the ideology underlying its development into our own time.²⁶⁴ These commissions dealt for example with the role of women in a colonial society, with the effects of soy bean monocultures on rural culture in South America, with the energy oligarchy in Russia, or with the everyday life and culture of migrant workers throughout history. In the exhibition space old and new works were woven together by the thread of the curators' argument, resulting in a very dense composition of objects, images, historical facts, and poetic narratives. These were to be read, examined, compared, and read again from a widened perspective, following an intricate parcours prepared by the curators. The exhibition guide, a booklet of 42 pages, not only provided spatial orientation, but challenged the viewer/reader to intellectually and emotionally engage with the discourse the curators were offering, using a sometimes overly didactic and sometimes carefully suggestive language. Visitors were encouraged to focus and alter their seeing habits through the use of binoculars, viewing platforms, looking glasses, or by examining the backside of paintings as well as their fronts. A layered spatial installation of the works, many of which were suspended from the ceiling, enabled the viewer to look through, rather than at them, and to simultaneously see other works behind them. This method of organising space and visual information in layers and circuits supported the intention of the project, namely to see and think across vast temporal and geographical distances, revealing historical works as a contemporary concern, and contemporary works as historically rooted. The exhibition thus presented an educational and discursive approach encouraging the viewers to develop a form of relational, ecological thinking, and to discover through their interaction apparently timeless behavioural patterns of exploitation, manifested in the silent complicity between colonialist ancestors and their neoliberal descendants.

²⁶⁴ Participating artists: see Appendix.

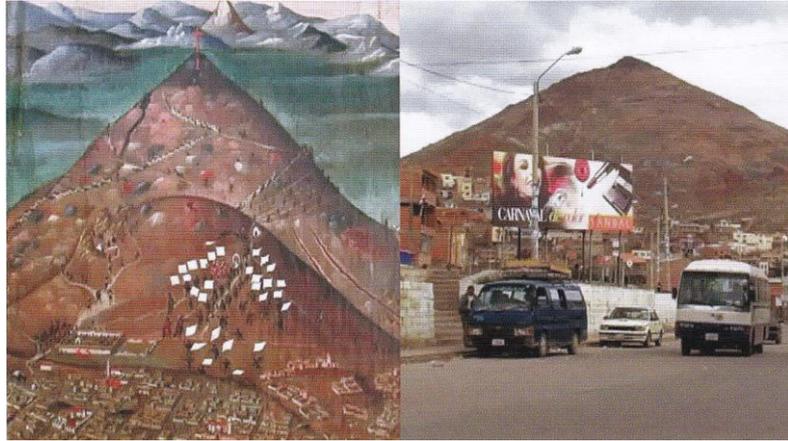


Figure 38: Harun Farocki, *Das Silber und das Kreuz*, 2010, two parallel videos, still image.



Figure 39: *The Potosí Principle*, 2010, exhibition view, Museo Nacional Centro de Arte Reina Sofía, Madrid. Photo: Matthijs de Bruijne.

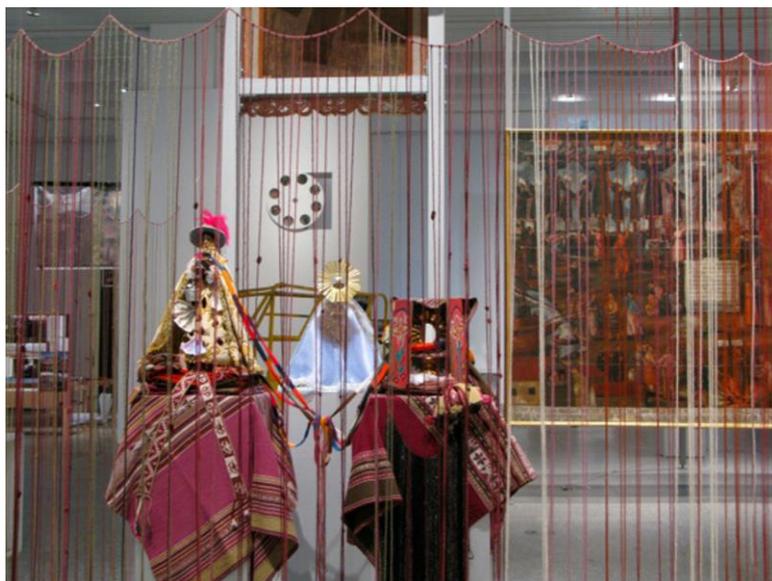


Figure 40: *The Potosí Principle*, 2010, exhibition view, Museo Nacional Centro de Arte Reina Sofía, Madrid.

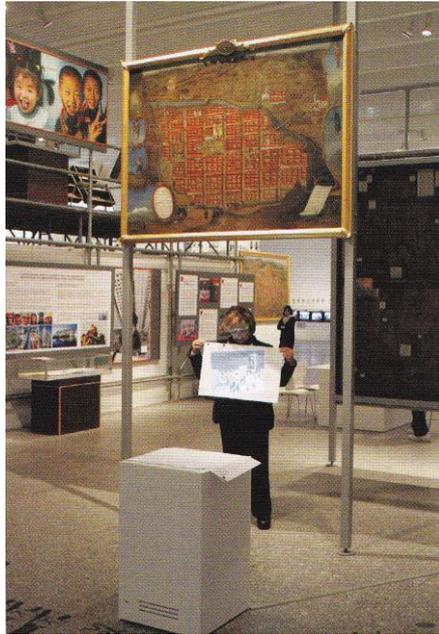


Figure 41 (left): *The Potosí Principle*, 2010, exhibition view. Photo: Andreas Siekmann.
 Figure 42: *The Potosí Principle*, 2010, exhibition view. Photo: Román Lores, Joaquín Cortés.

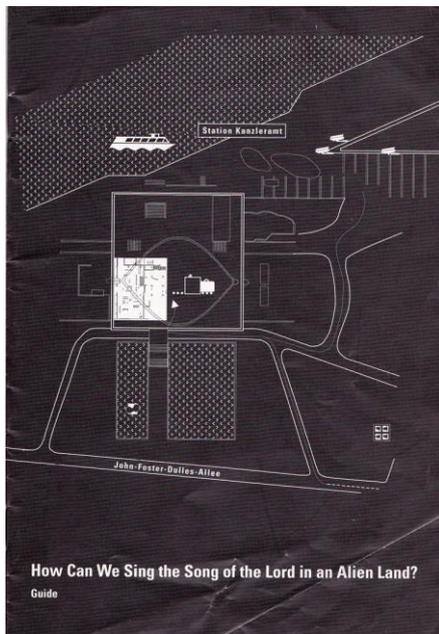


Figure 43 (left): Alice Creischer, Max Jorge Hinderer, Andreas Siekmann, 2010, cover page of exhibition guide booklet for *The Potosí Principle* at Haus der Kulturen der Welt, Berlin.
 Figure 44: Alice Creischer, Max Jorge Hinderer, Andreas Siekmann, 2010, exhibition "parcours", drawing in the exhibition guide booklet for *The Potosí Principle* at Haus der Kulturen der Welt, Berlin.

The Potosí Principle has been described, slightly sarcastically, as an "educational guided tour through the fields of cultural history and capitalist critique",²⁶⁵ and its artworks as largely inaccessible without a concentrated reading of the accompanying brochure. The strong guidance provided by the contextual and physical parcours of the exhibition has been criticised as an attempt to force the viewer to see with the curators' eyes, which seemed to sense a controlling, even ideologising curatorial power through which the mechanisms and tools of (intellectual) colonisation, identified in the pictorial representation of historical narratives, were in a way re-enacted. I would not regard this as a negative aspect of the exhibition, but as a successful curatorial experiment, embedded specifically in Creischer's and Siekmann's continuous artistic practice.²⁶⁶ As a project, *The Potosí Principle* has tested possibilities of curatorial and artistic agency by very directly confronting the viewer with an unapologetically didactic strategy as well as with a complex and at times confusing aesthetic strategy, in which the exhibition delivered a condensed demonstration of systemic thinking and its visualisation through artistic practice. The exhibition guide and the viewing order it implied were of central importance for the concept of *The Potosí Principle*, laying out the discovery of Potosí as place and metaphor in a slow and laborious movement through its many chapters and paragraphs, considering each detail of the argument and its wider repercussions. The underlying political position of the guide booklet's texts contributed to this slowness, as they surprised and unsettled the visitor's reading-mode through rhetorical alternations between art-historical explanations, polarising activist claims, and patronising guide-book-style directions. Swaying between agreement and disagreement, between provocation and reassurance, looking and reading, the visitor's awareness was kept on edge and engaged in the formation of the exhibition's argument. *The Potosí Principle* presented a discursive exhibition that spelled out its thinking process in an almost overly didactic way. It seemed to take the viewers by the hand and literally practice with them the "technique" of systemic reading of visual and verbal information, ordering the complexity of the material for them and installing a "red line" through the multiplicity of artistic positions in the exhibition. With the "choreography" inscribed in the exhibition guide, it thus curated not only the artworks but also the presence and attention of the viewer in such a structured way that the notion of a meta-strategy arises: Demanding and achieving the concentrated intellectual and physical participation of the viewer, literally pushing him/her through the room, bombarded with information, interpretation, direction, and pictograms, *The Potosí Principle* demonstrated the possibility of constructing political agency through didactic (and possibly already ideologised) interpretations of visual material and its systemic interconnections. In the context of ecocritical art this approach presented a very committed and thorough artistic investigation of systemic thinking and its use as curatorial concept. It traced ecological

²⁶⁵ Hans-Jürgen Hafner, "Kapitalismuskritische Bildungsreise", *artnet Magazine*, 23. Oct 2010, accessed on 15 Feb 2014, <http://www.artnet.de/magazine/das-potosiprinzip-im-haus-der-kulturen-der-welt-berlin/>.

²⁶⁶ "The pair is engaged in an ongoing reflection, inspired by institutional critique, on the constraints that limit the possibilities for artistic action today, but at the same time, they are on a quest to revive militant forms of aesthetic and political commitment. (...) These projects are typically conceived and implemented in dialogue with other cultural producers and activist groups, and all intervene in the routines and protocols of the art world, even if only temporarily, in order to address both the artists' own involvement with institutions and the increasing complicity between museums and neoliberal ideology." André Rottmann, "1000 words – Alice Creischer, Max Jorge Hinderer, and Andreas Siekmann", *Artforum International*, Sep 2010, 300–303.

relationships in a way that went far beyond an environmentalist argumentation and identified deeply ingrained ethical and political "systems errors" within past and present human societies. *The Potosí Principle's* unflattering expansion of the European economic "success story", which brought forth its wastelands and graveyards overseas, pointed towards several ethical issues on the permanent agenda of contemporary ecocritique: for example the ongoing habit of first world nations to externalise the unwelcome byproducts of their unsustainable economies, their partial neglect of human rights, their ongoing irrational belief in limitless growth, and their vain self-image as leading "Kulturnationen".

Through the discursive exhibition, the artist-curators' thoroughness went as far as testing the power of image interpretation on the exhibition layout and on the viewers. The object of concern – the city and exploitative principle of Potosí – was here a main character holding the exhibition and the explored system context together. The exhibition's narrative unfolded from this object and always returned to it, while the exhibition parcours organised and exploded complexities, playing with the possibilities of manipulating the agency of art images, ideologising the audience, layering meaning, double-meaning, half-truths and half-lies, and thus demonstrating the paradoxes of systems, as well as the vulnerability of systemic thinking – knowledge became mixed with belief, clarity with distortion. This curatorial and artistic "play" with the ideologised and ideologising arrangement of systems components claimed a considerable power potential for the artist and the exhibition as historical and contemporary producers and presenters of images, creating rather than merely describing systems of meaning and dependency – and *The Potosí Principle's* critical subtext seemed to add that with the power of representation also comes responsibility.

3.3.5 The creation of contextual ecological objects through artistic research and its exhibition

Across their diverse methodologies and formats, in each of the above examples an artistic research approach can be observed which focuses on the systemic relations of concretely existing "objects of concern", revealing their behaviour as active and reactive entities, and thereby questioning the self-containment of an object or entity in place and time. Using diverse methodologies and presentation formats these practices explore objects in a way that gradually leads from the detailed investigation of individual entities, via the tracing of their relationships, assemblies, and their ecological and political agency, towards their conceptualisation and representation as expansive and complex *systemic* entities. The "object of concern" is understood in this context as a material or immaterial agent with partly known and partly speculated upon actual and potential agency – an object whose active systemic relations and relational possibilities have to be more fully realised or re-evaluated in order to understand its ecological agency. CLUI's *Trans-Alaska Pipeline* for example documents the vast spatial expansion of an infrastructural object built around the transport qualities of oil. Although CLUI's representation format does not explicitly comment on all the

conflictual social, economic, and ecological aspects of the documented mega-structure and its wider oil production context, it encourages a very detailed observational attention through which these aspects can be revealed or hypothesised as integral to the object's material and functional expansion in space. Platform's *The Carbon Web* and the project's related activist events also engage with functional networks of the oil industry, but the critical focus lies on uncovering and challenging the involved "virtual" political and economic players and their decision mechanisms, which shape the entire industry into a sprawling "object of concern" in direct relationship with society – an enormous and powerful nexus, but in Platform's view not unchangeable. Ursula Biemann's practice and *The Potosí Principle* are developing intricate artistic and curatorial strategies for the presentation of the systemic relations they have investigated. They concentrate on altering ways of seeing by structuring and re-composing complex visual and nonvisual information. Their explorations of ecological agents in their social contexts, tracing for example the connections of oil and migration in the Middle East in Biemann's work, and of silver, colonialism, and neoliberalism in *The Potosí Principle*, offer a visual and discursive mental (re)construction of specific ecological, historical and political relationships, formulating new and expanded "objects of concern" which stretch beyond a physical object, infrastructure, or substance (oil, pipelines, silver, money). They include (and question) the creative forces of the social structures that are co-creating them, as well as the mediating and editorial agency of the artist and the viewer. Exploring the systemic agencies of representation, perception, knowledge, and ideology, they bring the social-ecological concerns with the investigated objects into a fundamentally cultural and aesthetic discourse. Through their widely contextualising but case-specific approaches these ecocritical practices seem to be able to overcome most or all of the limits to ecological thinking mentioned in chapter 3.2:

Firstly, they do not construct an immersive, holistic, undifferentiated environmental experience for the viewer or narrate a momentous first-hand experience of the artist, but aim to deconstruct any wrapping effect of sensual and visual "surroundings" by prompting the viewer to intellectually and imaginatively follow the metamorphosis (or metastatisation) of an object of concern through space and time, an object which is formed by its context and also constantly creates and transforms this context in return. Secondly, the investigated objects are understood as both locally embedded and decidedly translocal and transtemporal, exploding the notion of an exclusively local and immediate dimension of ecological entities. Thirdly, the role of democracy in the revealed systemic relations of the investigated agent networks is critically reflected and problematised where it fails to support the defense of social and ecological justice, and where it allows instead the corruption of supposedly democratically regulated political (and economic) power. This encourages a discussion of the rift between idealistic conceptualisations of ecology as a democratic coexistence of things and beings and those beings' observed opportunistic behaviour in practical ecology. And lastly, by getting to know the systemic agency of specific entities in detail and far beyond their surface appearance, these ecocritical practices provide a significant

contribution to the investigation of ecology in times of global change, both in terms of generating and sharing factual and experiential knowledge of social-ecological processes and in terms of differentiating and interrogating the status of objects and entities in current conceptualisations of political ecologies.

As diverse as their approaches may be, the practices described above show a shared interest in presenting and discussing objects of concern as systemic constellations, to various extents including the artist and the viewer. Their case study-based projects, anchored in practical ecology, are thus involved in a deeply conceptual investigation and re-evaluation of definitions for subjects, objects, entities, systems, ecosystems, and ecology. In my view, this makes their ecocritical research politically and culturally highly potent, because it is not "only" directed at ecological crisis in the sense of environmental degradation, but also, very importantly, in the sense of a crisis of systemic thinking.

Subjects, objects, entities, systems, ecosystems, and ecology – at this point, drawing from the observations and discussions made so far through examples of eco-art, ecocriticism, and, in particular, ecocritical art, it seems that these central parameters and ideas at play in ecocritical discourses, and their relationships, could be sketched as follows:

Ecology is a system, but not every system is an ecology. Understood practically and not merely metaphorically, ecology describes and embodies the principle that all living and nonliving beings, forces and concepts coexist across time and space in specific, causally and contingently related ways that affect, and depend on, the actions of ecological agents. Its comprehensive observation must occur equally through its metaphysical, surface, and realist aspects, and their cross-reference. Ecology is always complex, and it includes also what is not observed or hypothesised but exists only as a potentiality. In order to make ecology describable, a spatial and temporal frame has to be set around its components, through which it can be observed in the shape of a complex but still limited, case-specific ecosystem.

Systems constitute functional parts of ecology. They can be selective regarding their components. They can be abstract, concrete, or strategically constructed as a model. Systems can be open or closed, complex or simple, comprehensive or reduced, depending on the observational frame set around them.²⁶⁷ They deliver an observation and structural theorisation of specific actual or hypothetical constellations of things, beings, forces, and their interactive behaviour, and can thereby, depending on their structure and level of inclusiveness, help to understand and strategically address ecological complexity. The notion of an ecosystem for example is constructed, through the selection and consideration of components deemed relevant, in order to present the principle of ecology as it forms a

²⁶⁷ Donella Meadows for example speaks of a "systems zoo". Meadows, *Thinking in Systems*, 35–72.

specific (complex but limited) constellation of entities. An ecosystem is thus a description of the known parameters of an ecological constellation, as observed or hypothesised.

Entity is a non-specific definition for an agent, it could be a living or nonliving being, group, thing or force. It can be an agent of any size, quality, quantity, or agency.

Subjects actively participate in ecology like all other entities. They also participate in systems, creatively in those they observe or construct, and structurally in those they "live" or embody. As systems are partial and selective the observing subject (like all entities) can be involved with multiple, even contradictory systems, on different observational or participatory levels. The perceptive limitations of subject-system relationships are played out for example in the fieldworker's mediation problem between direct experience and reflective representation, between participant observation, passive witnessing, truthful reporting, and creative interpretation.

An object is on the one hand a concrete, physical ecological agent (e.g. a gallon of crude oil). On the other hand, it can be an "object of concern", a constellation of object agency that affects other entities not only individually and immediately, but also virtually and systemically across time and space (oil as a commodity, raw material, cause of conflict, pollutant). An object can also be considered as a plurality, containing multiple components of the same or of different types of entities and thus forming a "stock" that also constitutes a new object: quantities of water, combined in a specific systemic setting, make a reservoir; the reservoir, combined with a dam, pipelines, turbines, and power station becomes part of a new object again: a hydroelectricity project. Every object, initially defined as closed and self-contained, can become definable as systemic, by revealing its actual and potential, individual and collective ecological agency.

The artistic practices described in this chapter undertake such a transition from "closed objects" to objects of concern, and further to systemic objects. Based on quasi-scientific, quasi-journalistic case studies, they develop, facilitate, and even teach systemic thinking through the presentation of accumulated and processed observations of entity behaviour, thereby both creating and demonstrating a new methodology of looking at and thinking about objects, subjects, and systems – in practical ecology as well as conceptually. This shared focus on systemic objects of concern, influencing both the investigation and the exhibition process, invites further specification. I consider it as the basis for a strongly ecocritical artistic methodology which I am going to call "the hyperextension of objects".

3.4 From entity to ecology: The hyperextension of objects

To imagine a "hyperextension of objects" is to imagine a research process emphasising the emergence, entropy, physical and virtual presence, and the structural organisation of entities, as they come into existence and act in time and space. It postulates that all objects or entities are parts of systems, or are systems themselves, even if their particular "stocks" and "flows" are still to be uncovered. This leads from the idea of a closed object, pointedly distinct from its environment, to the idea of a sprawling, "invasive" system-object, stressing the point that there are no clear borders between entities and systems, if we consider all entities as active ecological agents.

The "hyperextension of objects" as a research process problematises the means, ends and accidents attached to an individual object or agent in its ecology. It is envisioned as a methodical and creative tracing of agency, aiming to discover as fully as possible an object's actual and potential, temporary and permanent reaction points with the operational field into which it has been deliberately or accidentally placed and through which it keeps moving. This enables not only an analysis of an object's current and past behaviour but also a clearer imagination of its possible future agency and its impact on changes in the system as a whole. Hyperextension can be applied to any object or entity, as any entity can be regarded as an ecological agent. According to Meadows and Latour, ecologically active entities can be living or non-living beings, objects and subjects, as well as ideas, forces, motivations, and conglomerations of entities. Consequently, hyperextended objects are open to include all infrastructures, materials, forces, and beings affected by or involved in an object's specific ecological agency, shaping it as a collective and complex object of concern.

Hyperextension can be employed as a methodology by a wide variety of research projects engaging with complexity, it is not a specifically artistic research "technique". Exploring the individual behaviour of diversely linked entities in systems as far as thinkable will necessarily exceed the capacity of a single discipline, and thus each hyperextension process will sooner or later require the help of other disciplines' expertise. The idea of a hyperextended object can be considered from a metaphysical perspective (asking for instance what happens to an object's essence, identity, or meaning when hyperextended), from a realist perspective (enquiring how it systemically affects the functionality and validity of other existing systems), and from a surface perspective (testing how much of it can be perceived and communicated). However, as mentioned above, comprehensive ecological thinking demands that these three aspects are brought and thought together. Artistic practice, in my view, has the privileged ability and freedom to find ways to do exactly that – provided that it strives to challenge its own disciplinary limitations, or even leaves them aside.

3.4.1 Investigation and Exhibition

Within artistic practice, hyperextension is imagined to occur in two phases: investigation and exhibition. In the investigation phase of a project, factual and experiential knowledge of the explored object is collected, and various trails of background research are followed. Hyperextension always assumes (and proves) that we know too little about the relations of objects, how they act, and where they begin and end in the systems which we also inhabit. Systemic relations can, for example, evolve in obscure ways over long periods of time, making them almost undetectable as relevant components and agents. Their investigation therefore might require long-term or recurring fieldwork. This phase of the hyperextension process demands the full attention and physical involvement of the researcher, whose investigation, following an object's systemic relationships as accurately and comprehensively as possible, would ideally be led by the object's systemic behaviour, not primarily by the researcher's individual interests and preferences, for example aesthetic considerations. When investigating and exhibiting ecological objects the artist-researcher takes on whatever role suits the process and context: anthropologist, journalist, geographer, activist, tourist, social worker, employee, writer, photographer, performer, private person. Drawing from a deep curiosity about and openness towards non-artistic practices and contexts which contribute significantly to the project with their specialist knowledge, the investigation embodies a widest- and deepest-possible exploration of the object's ecological behaviour by collecting and expanding information about its systemic outreach. Through participant observation and site analysis a direct engagement with the object, and with its ecological, social, material and political agencies in daily life, is sought and created. This fieldwork approach acknowledges the possibility of the researcher's limitation by individual capacities and subjectivities, and reflects his or her implication inside the hyperextension process – and thus inside the hyperextended object itself: No matter how closely and accurately an object is observed in the field, the investigation process is more than information gathering, it is also creative. By realising, selecting, and following specific investigative trails the researcher already shapes a particular interpretation of an object's systemic agency. The scope and quality of the exploration in the field and beyond is influenced by the individual practitioner's knowledge and experience, imagination, cross-disciplinary interest, choices, and often also more pragmatically by physical limitations and accessibility. Therefore, despite its quasi-scientific interest, hyperextension still produces a personalised, case-specific understanding of an ecological agent. By reaching across multiple disciplinary frames a single researcher can to some extent work against the gradual distortions of perspective that a growing embeddedness in the field context might bring. A parallel investigation process outside the field context, for example archival research, the engagement with various platforms for presentation and discussion, or studio practice, can offer a certain "buffer" against the enveloping experience of participant observation, challenging the limitations and habits of one's own view once again from a different direction.

The second phase of hyperextension occurs in the exhibition (or, by extension, in the book, performance, workshop, archive, etc.). Quite conversely to the scoping, gathering, expanding motion of the investigation phase, this involves a condensation of information and its composition into a presentation which transports the idea and content of the whole hyperextended object for the viewer to retrace – possibly including editing, selection, and modifications of the material. The exhibition, no less than the investigation, is a crucial part of the working process of hyperextension: It organises vast amounts of various types of information, including insights acquired through artistic responses to the findings of the investigation, into a format that represents a concrete new entity – the hyperextended object as object of concern – and allows it to be understood as a cohesive, actively systemic agent, not only a random accumulation of instances, observations, and "things". The exhibition tests the depth of the artist's own understanding and interpretation of the hyperextended object, also by critically reflecting the artist's own position in it, and his or her ability to portray this individual systemic constellation. Through its reflective, editorial, and analytical function the exhibition, which can take place as a momentary event at any point during the hyperextension process, also participates in identifying temporary end points for the investigation phase: While the hyperextension process is factually incompletable, the exhibition aims to communicate a specific way of ecological thinking and seeing by revealing a concrete new ecological agent through an informative case study. To offer a certain moment of pause and convergence, giving time to realise this new entity and the path of its discovery, is the important contribution of the exhibition in this process. The artistic-scientific negotiation between expanding investigation and converging exhibition, which reaches through the entire hyperextension process, constitutes the specific challenge of this practice. Questions regarding the researcher's limitation, manipulation, subjectivity, the reliability of sources, and the role of aesthetic and ethical considerations are of central importance in this phase. I will come back to the role of exhibitions in the hyperextension process in chapter 3.4.4.

Hyperextension articulates ecological objects as physically existing entities influenced by specific material and immaterial forces and by individual constellations of investigative experience and knowledge, including the researcher's. This does not lead to the revelation of complete and "true" ecological objects, but to discursive ecological objects. It practices and teaches advanced systemic thinking and thereby supports an experiential and conceptual understanding of ecology, arrived at through the simultaneous consideration of its metaphysical, realist, and surface aspects. The return to the field and the alternation between investigation, exhibition, re-investigation, and re-exhibition, is thought to diversify and "hyperextend" the researcher's own perception of the object of concern, by repeated exposure and reflection. Observation time is thus integrated in the process as an important catalyst for acquiring deeper knowledge of the observed object of concern, its "shapeshifting" characteristics, and the observer's own changing relationship to it.

As artistic practice, hyperextension thereby not only researches ecological agents, but also opens up a space for redescribing the agency of the artist as object-maker, as object-thinker, as system-creator, and as (cross)disciplinary researcher into the properties of the physical and metaphysical world.

3.4.2 A hyperextension case study: Hydroelectricity and the history of aluminium production

Hydroelectric dams, usually the focus objects in debates about the environmental "pros and cons" of hydropower,²⁶⁸ are particularly illustrative examples for hyperextendable objects. All dams are unique, site-specifically constructed objects, whose appearance has developed out of their topographical situatedness and their function. They already approach the limits of conventional objecthood – regarding their scale, their perceivability as objects rather than as architecture, the technical and energetic effort and mastery required to build them, and the expansive reach of their material and immaterial causalities. The agency of such a dam as object is from the start quite obviously a collective, ecological, and political one. It exists even before the dam's construction, as a political idea or interest, and reaches far beyond its local physical impact and the duration of its functional life. Hydroelectric projects can thus be regarded as human-nonhuman "collectives" stretching across time and space, shaped by causal chains and automatisms yet to be fully deciphered. Despite being praised as "green and clean" energy producing technology, their ecological and social impacts are often highly problematic, reaching far beyond the immediately measurable effects of a dam and its attached infrastructure.²⁶⁹ In the formal decisionmaking processes leading to the emergence of dams as physical objects, these vast entities are made manageable by framing them as "closed objects", excluding a large proportion of their ecological, political, and socioeconomic relationships. The selective externalisation of cause-effect-relationships and the tailoring of favourable evaluation criteria are silently accepted political and technocratic practices in environmental planning, highlighted and problematised for example by Magnason,²⁷⁰ referring to the Kárahnjúkar Hydroelectric Project in Iceland. In contrast, the hyperextension process insists and demonstrates that these relationships outside of the frame of the "closed object" are inseparable from the object of concern – they are an intrinsic part of the sprawling systemic entity under discussion.

²⁶⁸ For extensive documentation of ongoing conflicts sparked by the construction of "mega-dams", see for example: International Rivers, organisation's website, accessed on 17 Aug 2014, <http://www.internationalrivers.org/>. Amazon Watch, organisation's website, accessed on 17 Aug 2014, <http://amazonwatch.org/work/belo-monte-dam>.

²⁶⁹ Edward Goldsmith and Nicholas Hildyard, *The Social and Environmental Effects of Large Dams*, Wadebridge Ecological Centre, 1984, accessed online on 21 Aug 2012, <http://www.edwardgoldsmith.org/books/the-social-and-environmental-effects-of-large-dams/>.

International Rivers, "The State of the World's Rivers", interactive online database, launched on 26 Aug 2014, accessed online on 28 Aug 2014, <http://www.internationalrivers.org/worldsrivers>.

²⁷⁰ Andri Snær Magnason, *Dreamland. A Self-help Manual for a Frightened Nation* (London: Citizen Press, 2008), first English edition.

The realisation resulting from the image of a hyperextended object should be, for example, that one cannot choose to have a functioning dam without also choosing to have the flooded land submerged by the reservoir, displaced people, the construction of power stations and transmission lines, dried-out riverbeds and altered ecosystems, the demands of energy consumers, the products fabricated, used, and discarded by them, and so forth. Looking in the other direction of the timeline, a completed dam could not have come into existence without certain social, economic, and political structures that have supported the decision to build it, based on value systems that can reach far into the past. The history of aluminium production for example, which takes us back a little more than a hundred years to the first hydropowered aluminium smelter in Scotland, was from its very beginnings intimately connected with military production. While the Blackwater Hydroelectric Project in the Scottish Highlands and its attached smelter delivered energy and material for WWI and WWII fighter planes, a century later the recently completed mega-dam of the Kárahnjúkar Hydroelectric Project in Iceland delivers its energy to an aluminium producer which supplies material to the US military to build parts for fighter jets, vehicles, and weapons involved in conflicts in the Middle East.

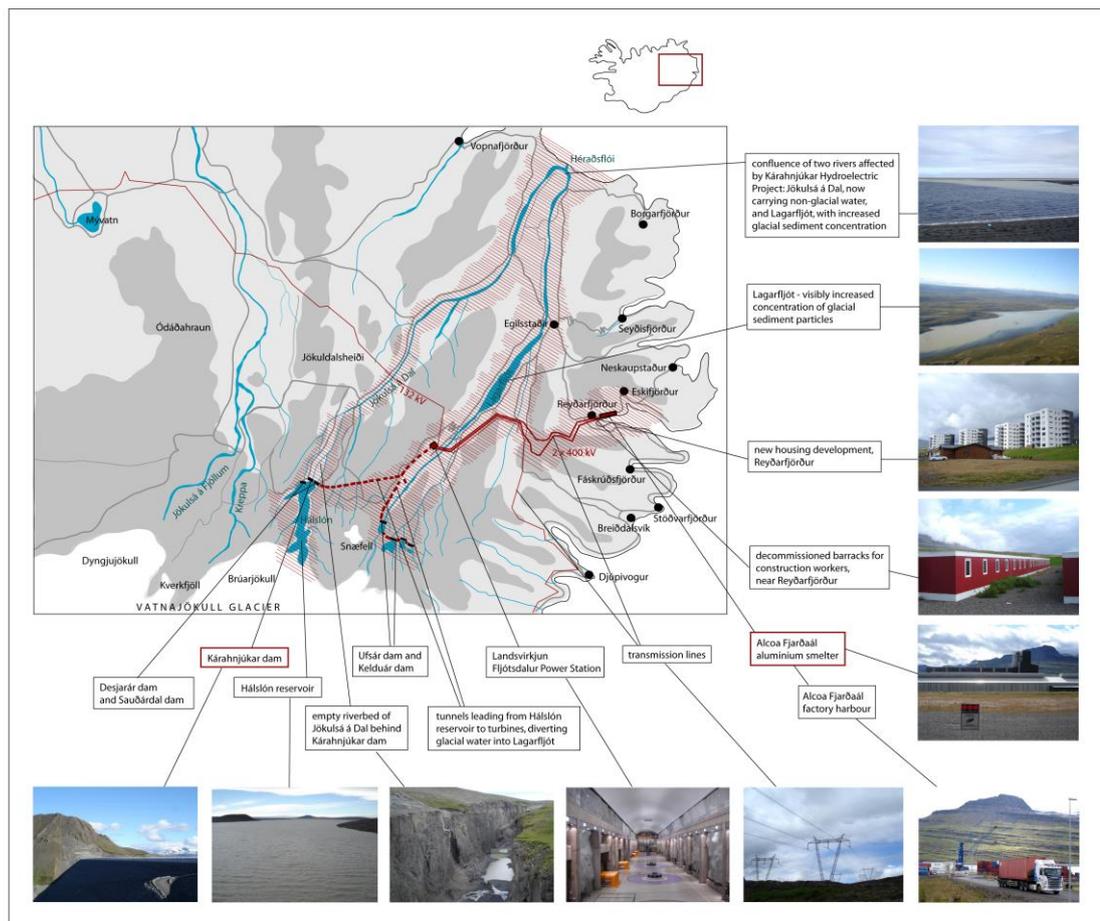


Figure 45: Julia Martin, *Kárahnjúkar Hydroelectric Project*, 2012, map and locations overview of hyperextension case study in Iceland 2011–14.

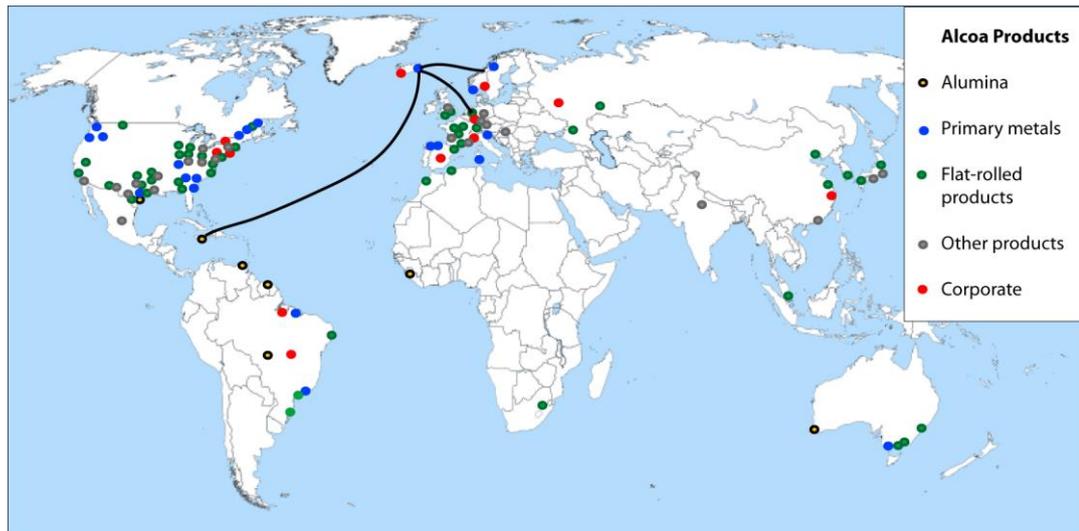


Figure 46: Julia Martin, *Translocal extensions*, 2013, sketch map, hyperextension case study in Iceland 2011–14.

Hyperextension can in this way point towards certain patterns in the constellation of technological development, economic networks, individual decisionmakers, political frameworks, and their precise hierarchisation of means and ends.²⁷¹ In the example presented here it reveals the identity of the human-made object of a dam as an outcome of decisions made in response to the network of its relations, and thus connects the agency of objects directly and evidently to the agency of other entities, including those of subjects – to private, public, and corporate interests, and to the politics and tools of planning. As a result, the hyperextended object spreading out from the physical object of the dam can be evaluated as an ecological agent whose action radius stretches far beyond the dam's agency itself. This "hyperextended" agency can partly or completely reverse the central object's *intended* agency, as for example in the case of Kárahnjúkar Hydroelectric Project: While the main benefit of the dam is to provide large amounts of energy with less CO₂ emissions than a coal-fired powerplant, this energy is used almost exclusively for a simultaneously built aluminium smelter, which produces the raw material for parts of airplanes and cars, thereby contributing to the constant increase of air and land traffic, the consumption of fossil fuels, and the emission of CO₂.²⁷² The smelting process in itself emits large quantities of CO₂ which, curiously, are not considered in the factory's environmental

²⁷¹ Two exemplary documentary films should be mentioned here which have investigated the ambivalence of economic and technological advances, revealing the externalisation of negative effects that directly counteract their progressive appearance, and the failure of democratic processes in human-nonhuman ecologies: *Draumalandið*, 2005, by Andri Snær Magnason, describes the political conflict surrounding the construction of Kárahnjúkar Hydroelectric Project in Iceland; *Blood in the mobile*, 2010, by Frank Poulsen, investigates the corrupt trade with sought-after minerals used in technological devices, and traces the connection between Nokia and slavery and civil war in Kongo.

²⁷² Recent studies have in fact revealed that, depending on the geological and climatic conditions, reservoirs can emit considerable amounts of the "greenhouse gas" methane, which makes hydropower much less carbon neutral than its proponents claim. Tonya DelSontro et al., "Extreme Methane Emissions from a Swiss Hydropower Reservoir: Contribution from Bubbling Sediments", *Environmental Science & Technology*, Vol 44, 2010, 2419–2425. accessed online on 24 Sep 2014, <http://pubs.acs.org/doi/abs/10.1021/es9031369>. Paul Brown, "Drowned Tropical Forests Exacerbate Climate Change", *Scientific American*, 11 Sep 2014, accessed online on 20 Sep 2014, http://www.scientificamerican.com/article/drowned-tropical-forests-exacerbate-climate-change/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+energy-and-sustainability+.

impact assessment, because they are not immediately toxic.²⁷³ There are many more problematic effects attached to this particular project, including the severe alteration and destruction of local ecosystems such as Lagarfljót lake, socioeconomic imbalances in the region, the logistics of Bauxite mining overseas, and the disposal of toxic waste produced in the aluminium smelting process, let alone the localisation of the entire project inside the flawed logic of unlimited growth. The complexities of the Kárahnjúkar and Blackwater hyperextension case studies, and their systemic connection, are addressed in the practical part of this thesis.

3.4.3 Objecthood, landscapes, systems, and "hyperobjects" in relation to the hyperextended object

The idea of a hyperextended object explicitly stays within the idea of objecthood, although its generative process cuts across vast geographical, temporal, and disciplinary distances that radically challenge this same notion. It sets hyperextended objects in direct opposition to the discussion of "closed objects" in environmental planning. As can be seen in the case of Kárahnjúkar Hydroelectric Project, formalised environmental impact assessment procedures for example, developed in the attempt to manage complexity and resources effectively, can structurally contribute to the distortion of their evaluations by framing the objects under inspection too narrowly.²⁷⁴

Where efforts have been made to avoid "closed objects" and to describe a wider perspective on the issues considered, the idea of landscape is often employed. It is seductive to also define the hyperextension process as a "landscaping" of the complex interrelations between specific entities, but this would be a misreading: The landscape view of entities and their relationships is an expression of "surface ecology": it homogenises and localises complexity by framing the observed details into one coherent image, creating a notion of place at a distance. At the same time this surface image excludes agents and events that happen to participate invisibly in the system or are outside of the observable frame. In contrast, thinking in unframed hyperextended objects involves the consideration of a simultaneous presence of places and agents that are intimately and functionally related but not necessarily existing in the same spatial and temporal regime as a perceivable or tangible "landscape". Conversely to the idea of an immersive landscape, hyperextended objects embody dynamic systems resulting from consequential relations that extend, without borders and not necessarily linearly, from inside out, not from an outside frame inwards. They unfold according to the systemic behaviour of the object as it inflicts its agency upon entities and processes and is structured by the contextual agencies it encounters in return.

²⁷³ Exponent, "Screening Risk Assessment for Air Emissions from the Alcoa Fjarðaál Aluminium Smelter", report prepared for Alcoa Fjarðaál, Reyðarfjörður, 2006.

²⁷⁴ Julia Martin, "Hyperextended Objects in Environmental Planning", paper given at the Northern Research Forum conference, Aug 2013, University of Akureyri, unpublished.

Deepening the discussion of active objects in reference to the agent definitions offered by Latour, Morton, and Meadows it could be asked whether the hyperextended object is an entirely relational or an eternal actant (Latour), unknowable or intimately immersive (Morton), calculable as a "stock" or already including "flows" and thus operating as a system (Meadows). Reflecting on the findings of the four ecocritical artistic practices described above and of my own case study, a characterisation of the relational behaviour of hyperextended objects could be imagined as follows:

1. There are no definitive borders to draw around the hyperextended object that would be essential and final. It is always extending outwards and differentiating inwards, like fractals. Setting borders by choosing a particular observational frame or research question enables only a temporary focusing of the ongoing hyperextension process.
2. The hyperextended object is concrete, evolving, and lasting. The relations between its components are an intrinsic, constructive part of it, not an external force or event. Because it includes relations and the relationship partners, the hyperextended object's existence is not threatened by their changes in the same way as an entirely relational actant would be.
3. The hyperextended object cannot be unknowable as it is at every stage of its existence the current product of an ongoing knowledge generation process, whose quality depends on the individual and collective tracing of its components and relations. The awareness of its further hyperextendability at any point of the process is part of knowing the behaviour of such an ecological object.
4. The borderlessness of the hyperextended object may recall Morton's "mesh", but in contrast to the unhierarchical, decentered, randomly environmental mesh, the hyperextended object is thoroughly structured and anchored by its object of concern. It unfolds along concrete cause-effect relationships between entities that are defined by their active agencies. These can be more or less dynamic, more or less expansive, stronger or weaker.
5. While not providing a stable, enveloping environment, the hyperextended object is to some extent immersive and personal, because it structurally includes the researcher, who actively co-creates its expanding form, drifting in and out of investigative contexts and relationships.
6. The hyperextended object embodies a real-life system "model" in the way that it is always still possible to look upon it from outside. This possibility of aesthetic or scientific detachment from it means that the hyperextended object is not Ecology, but an ecological object, in its advanced stages possibly describing an ecosystem. Ecology is the relational principle behind the coexistence of countless ecological objects and systems, their congruence and interferences. Hyperextended objects, like all ecological entities, can thus be in conflict with each other; like waves, they can partially eclipse each other or reinforce each other's amplitude.
7. Its potential to be read as a convergence of the metaphysical, realist and surface aspects of ecology give the hyperextended object an entry to the thinking processes of all disciplines. As a thoroughly transdisciplinary concept it functions as a multiple agent between them, fostering and embodying systemic thinking.

These observations and imaginations envision the hyperextended object in a way that distinguishes it clearly from Timothy Morton's similarly named concept of "hyperobjects".²⁷⁵ These are, according to Morton, "*objects massively distributed in time and space that make us redefine what an object is*".²⁷⁶

*"Alongside global warming, "hyperobjects" will be our lasting legacy. Materials from humble Styrofoam to terrifying plutonium will far outlast current social and biological forms. We are talking about hundreds and thousands of years. Five hundred years from now, polystyrene objects such as cups and takeout boxes will still exist."*²⁷⁷

In Morton's view "hyperobjects", "*these demonic substances*",²⁷⁸ have a sublime, even somewhat spiritual aspect:

*"Hyperobjects invoke a terror beyond the sublime, cutting deeper than conventional religious fear."*²⁷⁹

Morton's "hyperobjects" are thus imagined as homogeneous in terms of their material characteristics, and as relatively specific in terms of the main effects of this materiality, but remain unspecific in regard to their precise ontologies and systemic causal relations. They are described as nearly everlasting, timeless, while their coming-into-being, their development, and the attached responsibilities remain obscure and separate from the objects themselves. Thereby "hyperobjects" stay within the definition of unknowable "strange strangers" that are affecting other entities by an unchanging material persistence and consistent accidental agency, but are not affected or changeable in return. They are therefore excessively vastly distributed, but still "closed" objects.

Hyperextended objects on the other hand are defined not firstly by their materiality, but by their causal and functional relationships, which connect and include multiple entities of various materials, energies, intents, and appearances across space and time. A hyperextended object is polymorphous and collective, an entity made of a multiplicity of diverse, interdependent components. Its existence is not obvious and homogeneous but needs to be actively revealed through observation, association, and representation. Its presence is then decidedly non-mysterious, once revealed, but fascinating nevertheless in its systemic logic. The hyperextended object is as large as its researcher is able to make it, and through this eventual limitation of the process of investigation and exhibition the researcher herself is always also part of the hyperextended object.

²⁷⁵ Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (University of Minnesota Press, 2013).

Timothy Morton, "Here Comes Everything: The Promise of Object-Oriented Ontology", In *Qui Parle*, Vol.19, 2011.

²⁷⁶ Timothy Morton, *The Ecological Thought* (Cambridge MA: Harvard University Press, 2011), 130–35.

²⁷⁷ *ibid.*, 130.

²⁷⁸ *ibid.*, 130.

²⁷⁹ *ibid.*, 130.

3.4.4 Exhibiting the hyperextension of objects: Challenges and choices

The complexity and borderlessness of hyperextended objects, unfolded by the momentum of investigative research, present considerable challenges for their representation. How can their visually disparate and unsimultaneous components and events be made experiential and discursive as one systemic object while avoiding oversimplification?

In the four ecocritical practices described above, the exhibition of visual material in a gallery space or comparable setting is not the only component by which a presentation of their research occurs. Of equal importance seem to be the archive, the essay, the conference, the infographic, the educational project, and the book. Considering my own practice, I would add to this list the field encounter, the open studio, the performative action, and the game. These "exhibition-external" formats are derived directly from the practices' diverse strategies of investigation. They can exist independently from the exhibition, but are recognisable as curatorial choices within it: CLUI for example presents regular grids or lists of photographic documents, indicating the gradual collection process of its archive, or the linear direction of a book. Platform London chooses the workshop and conference as strategies for direct knowledge exchange and activism, opening them up as an intervention in public space. Ursula Biemann offers collages of moving images and sound that portray her observations and subjective systemic associations, while also juxtaposing them with each other spatially and discursively. And Creischer, Siekmann, and Hinderer take the viewer physically and intellectually on a guided, interactive expedition through their expansive, spatially and temporally layered object of concern.

Employing alternative presentational and mediative approaches besides a more traditional exhibition format, project-based ecocritical artistic practices seem to find it centrally important that substantial contextual and critical information is made available to the audience, in order to enable it to retrace what can or cannot be seen in the images offered (for example fertile land submerged in a reservoir, as opposed to a big lake in a romantic landscape). Based on the crossdisciplinarity of their working processes, developed in response to the crossdisciplinarity of their objects of research, they seem to share an understanding that without access to this further discursive material a project's visual and critical argument might remain incomplete. The artwork as object or image, and the exhibition, could here be regarded as part of a collection of mediation strategies which all equally, or collectively, serve to articulate the process and outcome of ecocritical artistic research. The cross-referencing dynamic developing here through ecocritical artistic practice between investigation and exhibition, and between exhibition-internal and exhibition-external forms of representation, allows for a layered and comparative engagement with visual material and artworks as well as with contextual information and "raw material" presented through their working process. This slowed-down, non-instantaneous way of "reading" objects, also within the exhibition itself, can effectively challenge powerful seeing habits which might otherwise

too quickly direct the viewer towards what he or she already knows and has been trained to see: surface ecology, landscapes.

Despite a multiplication of communication formats, the spatially experienced "traditional" art exhibition plays an important role for the presentation and discourse of systemic thinking. It tests and performs what ecocritical artistic research strives for: Not to evoke new images of Nature or Ecology, but to challenge the observational, descriptive, interpretive limitations inherent in every representation or conceptualisation of ecology. As *The Potosí Principle's* labyrinthine parcours has shown for example, artistic and curatorial techniques of juxtaposition and cross-cutting can make experiential the reciprocal forces at play in one and the same system – how entities clash incompatibly and undemocratically, and how agencies might eclipse each other. They can also show how "everything is connected", raising the question if and how systemic thinking might limit free choice and overview.

While ecocritical writing and discourse are able to formulate the aims, benefits, and methodologies of systemic thinking very clearly as an ideal, and to critique the distancing and romanticising effects of an aestheticisation of ecology through its own models in great detail, the exhibition of artistic positions informed by ecocritical research in practical ecology can reveal (and make experiential) the difficulties encountered when setting out to change seeing and thinking habits in regard to ecology and Nature by aesthetic means, to organise complexity without oversimplification of content, and to combine or clash the imagination, experience, and the thought of ecological complexity through art works or art projects. In analogy to the testing of ecology models against practical ecology, ecocritical art might here be tested against its exhibition, which thereby constitutes a necessary, complementary contribution to the investigation of contemporary systemic, ecological thinking.

As mentioned before, the exhibition (or other presentation) of the hyperextended object constitutes an important part of the hyperextension process and is thought to support the transition from seeing objects to seeing systems. It integrates two aspects: Firstly, the documentation and interpretation of the investigation process, revealing the hyperextended "object of concern", and secondly, the reflection of this process in form of an explicit or implicit critical consideration of the artist-researcher's role in the hyperextension process. The exhibition thus demonstrates ecocritical systemic thinking both by informing about the ecological relationships of a concrete, case-specific object of concern, and by demonstrating the involvement of the researcher in creating and presenting, or maybe misrepresenting, this same object. Through the visual and conceptual convergences occurring in the exhibition, achieved e.g. by layering and juxtaposition, selected components of the sprawling hyperextended object are imaginatively folded back together, but in a new shape: the shape of the hyperextended object "of concern". The realisation of these new interferences and correlations fundamentally enables and inspires systemic thinking, not just in reference to one particular case study, but in principle.

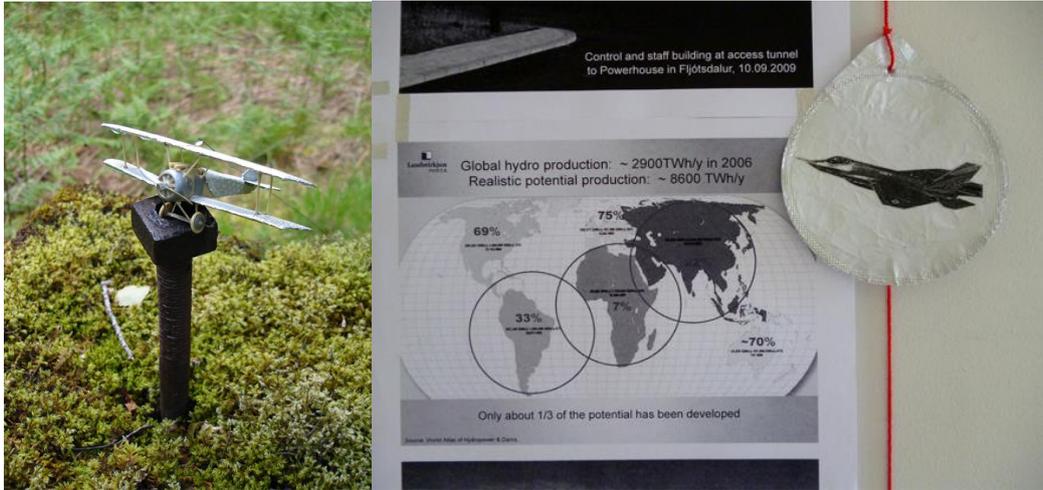


Figure 47: Julia Martin, *Sopwith F-1 Camel*, 2011, object, and untitled collage (detail), 2012, from a series of objects and collages correlating means and ends of hydropower and aluminium production.

Within the exhibition's spatial and temporal frame, ecocritical art has many methodological and aesthetic possibilities for making the "foldings" of its research process retraceable, and to let them point towards the potential "leverage points" for individual responses. To visualise these interferences as indicators for the existence of coherent, hyperextended objects of concern and of choice, and to emphasise their relevance for the identification of systems problems, might help to move systemic thinking forward in the public attention. When such a surprising folding occurs, for example revealing the correlation between CO₂-saving hydropower and the production of fighter jets, the otherwise incompletable hyperextension process can be brought to a halt, pausing to further examine and discuss this newly identified "loop" in the system, and the path of systemic thinking that has brought it to light.

4. Conclusion

The experience of unfolding climate change in recent years has begun to move the discourse of the topic itself from a metaphysical level (is it real or not?) to the surface level (empirical proofs and direct effects), and is now starting to open up an intensified discussion of urgent adaptation and mitigation scenarios, which should include an evaluation of their limitations on a realist level (taking into account the speed of developments, tipping points, feedback loops, dwindling resources). It seems that the principles of ecological, systemic thinking have become less abstract and more experiential, stretching across individual, local, and translocal environments. On the other hand, non-systemic seeing and thinking habits remain strong and persistent, in particular when the consequences to be drawn from systemic thinking are less than pleasant. The significance of realist ecology for the discussion of climate change as a specifically cultural problem is also becoming clearer, but still needs to be addressed more precisely and more critically. The recently announced Anthropocene for example, acknowledging the direct contribution of human activity to the alteration of global habitats on a (realist) geochemical and climatic level, has been interpreted both as the basis for a new acute sense of human responsibility for the planet, and as an era in which humans can now potentially achieve full control over the Earth's ecological processes, if only they develop the necessary geo-engineering technologies for it. The further discourse of the Anthropocene, in my view, would have to correct such an underlying projection of omnipotence, as this merely repeats the "magical leap" of utopianism. It appears to be based on an idealised, mechanical model of "fixable" ecology and misunderstands the systemic behaviour of entities in practical ecology, for example misjudging the delayed reaction of "stocks", the surprising speed of exponential processes, and the ultimate restriction of sources and sinks.

There is, therefore, still a long way to go for a "non-modernist" conceptualisation and application of ecological systemic thinking, by which to build an idea of human ecological existence that integrates the behaviour and needs of humans and nonhumans, that is ethical, that does not easily dismiss the idea of a Social, and that is also ecologically sustainable, meaning practically feasible for a long time. My investigation of the contributions of contemporary eco-art and ecocriticism in this context has set out to explore the limitations and potentials of exemplary cultural imaginations of ecology and ecological crisis in these fields – how they have emerged, how they are received and presented, and how they relate to very recent experiences and observations of practical ecology under the influence of climate change and its discourse. It has identified the consideration of ecology as a construct of metaphysical, surface, and realist aspects, and has observed that the realist aspect of ecology is rarely fully integrated and accounted for in eco-art's and ecocriticism's images and models of ecology, a neglect that leads to a confusion and distortion of concepts, metaphors, arguments, and images employed in the conceptualisation and representation of ecology.

Testing these representations and models against observations of practical ecology, understood as the occurring full integration of realist, surface, and metaphysical ecology, the argument has revealed that both eco-art and ecocriticism largely reconfirm a distanced opposition between human and nonhuman agents, subject and environment, place and its exterior, despite their explicit dismissal of Nature-Society dualism. Further weak points in representations of eco-art and ecocriticism have been identified in their inconsistent conceptual differentiation between ecology and environment, and in their limited perception, and therefore partial misrepresentation, of ecological entities and their systemic behaviour. Instead of regarding these shortcomings as a proof that eco-art is inherently incapable of addressing or representing ecology and ecological thinking, the thesis has seen them as an unrealised potential within contemporary art, and has searched for and discovered ecocritical artistic practices that approach the discourse and experience of ecology differently – by directly investigating and employing systemic thinking as a methodology and "objective". These ecocritical practices have been shown to develop concrete tracings of ecology "from the ground up" by exploring case studies of social-ecological systems, by rediscovering their images, objects, and agents, and by questioning the artist-researcher's own involvement in their investigation and creation. This shared research-focused approach in contemporary ecocritical art has been pointed out as a recurring crossdisciplinary methodology that undertakes in various ways a "hyperextension of objects".

Hyperextension has been described as contributing innovatively to a questioning, expansion, and transformation of the existing definitions of objects of concern and of the frameworks for their evaluation, for example in environmental planning. Its engagement in the theoretical discourse of objects whilst being anchored in the observation of practical ecologies can lend this research approach a powerful agency within artistic, political, and activist dimensions. The idea of the hyperextended object has been developed out of the practical component of the thesis, which consists of an artistic fieldwork-led case study exploring the social-ecological conditions and correlations of hydropower and aluminium production in Scotland and Iceland.

The thesis' theoretical specification of the "hyperextension of objects" as process and methodology has identified its important internal negotiation between investigation and exhibition, through which the artistic conceptualisation of ecology and systemic thinking is tested in ecocritical art by its own practice, in analogy to the testing of ecology models against practical ecology. Exhibition in its widest sense is thereby understood as a vital instrument of practice-based ecocriticality. It presents investigations of systemic objects and systemic thinking through diverse formats of presentation and communication, including the "traditional" exhibition of images and objects in a space, the performative action, the archive, the book, the game, the conference, the field encounter, the educational project, life choices.

With its explicitly crossdisciplinary approach and its strong interest in the field evidence of entities' systemic behaviour, ecocritical art is in my view uniquely able to reveal obscure systemic connections and convergences, to visualise their otherwise unobservable interferences, and to offer with the "hyperextended object" a new visual and conceptual image of ecological agents as concrete, translocal objects of concern. At the same time, its alternation between investigation and exhibition supports ecocritical art's self-critical observation of its own disciplinary limitations and of its participation in the construction of the hyperextended object and its representation. Ecocritical art contributes today to an expanding and accelerating political discourse regarding the fragility and rigidity of systemic organisation, by investigating the necessity, possibility, and impossibility of systemic change, the agencies of decisionmaking and non-action, the distractions of visionary but utopian futures, and the challenges of planning the unknown. Its political agency lies, in my view, specifically in the interrogation of the cultural production of images, objects, and systems which discuss and represent human-nonhuman ecologies, in the exposure of "leverage points" and of systems errors in existing social-ecological constellations, and in its insistence on being informed by a deep and self-reflective observation of practical ecology, rather than by existing models and ideologies with their own inbuilt systemic problems.

Ecocritical art thus participates across disciplines in the development and critique of ecological and systemic thinking in contemporary society. In a time of now unfolding climate change, when all known systems seem to be on the verge of radical and rapid redefinition, there could not be imagined a more important and more potentially formative role in society for art to take on.

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Beyond Green: Toward a Sustainable Art, curated by Stephanie Smith, Smart Museum of Art, University of Chicago, Oct 2005–Jan 2006.

C Words: Carbon, Climate, Capital, Culture, exhibition and event programme curated by Platform London, Arnolfini, Bristol, Oct–Nov 2009.

EARTH: Art of a Changing World, co-curated by Kathleen Soriano, David Buckland, and Edith Devaney, GSK Contemporary, Royal Academy of Arts, London, Dec 2009–Jan 2010.

Radical Nature: Art and Architecture for a Changing Planet 1969–2009, exhibition curated by Francesco Manacorda, Barbican Art Gallery, London, Jun–Oct 2009.

Rethink: Contemporary Art and Climate Change, exhibition programme, collaboration between The Alexandra Institute, Statens Museum for Kunst, Nikolaj Copenhagen Contemporary Art Centre, and Den Frie Centre of Contemporary Art, Copenhagen, Oct 2009–Apr 2010.

Still Life. Art, Ecology, and the Politics of Change, 8th Sharjah International Biennial, co-curated by Eva Scharrer, Jonathan Watkins, and Mohammed Kazem, Emirate of Sharjah, Apr–Jun 2007.

The Potosí Principle. How can we Sing the Song of the Lord in an Alien Land?, curated by Alice Creischer, Andreas Siekmann and Max Jorge Hinderer, Museo Nacional Centro de Arte Reina Sofía, Madrid, 2010; Haus der Kulturen der Welt, Berlin, 2010–11; Museo Nacional de Arte and Museo Nacional de Etnografía y Folklore, La Paz, 2011.

Tomás Saraceno. Cloud Cities, exhibition at Hamburger Bahnhof Museum für Gegenwart, Berlin, 2011.

Unfold, curated by David Buckland and Cape Farewell, University of Applied Arts Vienna, Vienna, May–June 2010, travelling internationally.

Weather Report: Art and Climate Change, curated by Lucy R. Lippard in collaboration with EcoArts, Boulder Museum of Contemporary Art, Boulder, Colorado, Sep–Dec 2007.

World of Matter – On the Global Ecologies of Raw Material, curated by World of Matter research group, HMKV Dortmund, Mar–Jun 2014, and James Gallery, CUNY Graduate Center, New York, Sep–Nov 2014.

Film and video

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Blood in the mobile. Documentary film, directed by Frank Poulsen, co-produced by Koncern TV- og Filmproduktion (DK), Chili Film (DK), and Gebrüder Beetz Filmproduktion (D), in collaboration with Agentur Spacesheep, 2010.

Draumalandið. Documentary film based on the book *Dreamland* by Andri Snær Magnason, directed by Þorfinnur Guðnason and Andri Snær Magnason, produced by Ground Control Productions, Reykjavík, 2009.

6. Appendix

Excerpts from Samuel Taylor Coleridge, *The Rime of the Ancient Mariner* (1834), Part IV

(...)

Alone, alone, all, all alone,
Alone on a wide wide sea!
And never a saint took pity on
My soul in agony.

The many men, so beautiful!
And they all dead did lie:
And a thousand thousand slimy things
Lived on; and so did I.

I looked upon the rotting sea,
And drew my eyes away;
I looked upon the rotting deck,
And there the dead men lay.

I looked to heaven, and tried to pray;
But or ever a prayer had gusht,
A wicked whisper came, and made
My heart as dry as dust.

I closed my lids, and kept them close,
And the balls like pulses beat;
For the sky and the sea, and the sea and the sky
Lay dead like a load on my weary eye,
And the dead were at my feet.

(...)

Beyond the shadow of the ship,
I watched the water-snakes:
They moved in tracks of shining white,
And when they reared, the elfish light
Fell off in hoary flakes.

Within the shadow of the ship
I watched their rich attire:
Blue, glossy green, and velvet black,
They coiled and swam; and every track
Was a flash of golden fire.

O happy living things! no tongue
Their beauty might declare:
A spring of love gushed from my heart,
And I blessed them unaware:
Sure my kind saint took pity on me,
And I blessed them unaware.

The self-same moment I could pray;
And from my neck so free
The Albatross fell off, and sank
Like lead into the sea.

Additional information about the group exhibitions presented in chapters 1 and 3

C Words: Carbon, Climate, Capital, Culture

curated by Platform London, Arnolfini, Bristol, Oct – Nov 2009.

Participating artists and organisations: Ackroyd & Harvey, African Writers Abroad (PEN), Amelia's Magazine, Art Not Oil, Carbon Trade Watch, The Corner House, Feral Trade, FERN, Greenpeace, Hollington & Kyprianou, Institute for the Art & Practice of Dissent at Home, Laboratory of Insurrectionary Imagination, Live Art Development Agency, new economics foundation & Clare Patey, Sustrans – Art & the Travelling Landscape, Trapese Collective, Ultimate Holding Company.

The Potosí Principle. How can we Sing the Song of the Lord in an Alien Land?

curated by Alice Creischer, Andreas Siekmann and Max Jorge Hinderer, Museo Nacional Centro de Arte Reina Sofía, Madrid, 2010; Haus der Kulturen der Welt, Berlin, 2010/11; Museo Nacional de Arte and Museo Nacional de Etnografía y Folklore, La Paz, 2011.

Participating artists: Sonia Abián, Anna Artaker, Monika Baer, Quirin Bäumlner, Christian von Borries, Matthijs de Bruijne, Chto delat, Culture and Arts Museum of Migrant Workers, CVA/TIPPA, Stephan Dilleuth and Konstanze Schmitt, Ines Doujak, Elvira Espejo, Marcelo Expósito, Harun Farocki, León Ferrari, María Galindo/Mujeres Creando, Isaías Griñolo, Luis Guaraní, Sally Gutiérrez Dewar, Zhao Liang, Rogelio López Cuenca, Eduardo Molinari, PRPC (Plataforma de Reflexión sobre Políticas Culturales), David Riff/Dmitry Gutov, Territorio Doméstico, The Long Memory of Cocaine research group.

Unfold

curated by David Buckland and Cape Farewell, University of Applied Arts Vienna, Vienna, May – June 2010, travelling internationally.

Participating artists: Heather Ackroyd & Dan Harvey, Amy Balkin, David Buckland, Adriane Colburn, Sam Collins, Nick Edwards, Leslie Feist, Francesca Galeazzi, Nathan Gallagher, Marije de Haas, Robyn Hitchcock + KT Tunstall, Ian McEwan, Brenndan McGuire, Daro Montag, Michèle Noach, Lucy and Jorge Orta, Sunand Prasad, Tracey Rowledge, Lemn Sissay, Shiro Takatani, Clare Twomey, Chris Wainwright.

Weather Report: Art and Climate Change

curated by Lucy R. Lippard in collaboration with EcoArts, Boulder Museum of Contemporary Art, Boulder, Colorado, Sep – Dec 2007.

Participating artists: Kim Abeles, Lillian Ball, Subhankar Banerjee, Iain Baxter, Bobbe Besold, Cape Farewell, Mary Ellen Carroll (Precipice Alliance), Center for Land Use Interpretation, Brian Collier, Xavier Cortada, Gayle Crites, Agnes Denes, Steven Deo, Rebecca DiDomenico, Futurefarmers (Amy Franceschini & Michael Swaine), Bill Gilbert, Isabella Gonzales, Green Fabrication, Newton Harrison and Helen Mayer Harrison, Judit Hersko, Lynne Hull, Pierre Huyghe, Basia Irland, Patricia Johanson, Chris Jordan, Marguerite Kahrl, Janet Koenig & Greg Sholette, Eve Andree Laramée, Learning Site, Ellen Levy, Inigo Maglano-Ovalle, Patrick Marold, Natasha Mayers, Jane McMahan, Mary Miss, Joan Myers, Beverly Naidus, Chrissie Orr, Andrea Polli, Marjetica Potrc, Aviva Rahmani, Rapid Response, Buster Simpson, Kristine Smock, Joel Sternfeld, Mierle Laderman Ukeles, Ruth Wallen, Melanie Walker and George Peters, Sherry Wiggins, The Yes Men, Shai Zakai.

7. Documentation of practice

The following documentation of the practical component of this dissertation presents an overview of the artistic research process of my long-term hyperextension case study from 2010 to 2014, which has explored the systemic relationships of two hydroelectricity projects in Scotland and Iceland.

The documentation is structured into two parts and contains several types of images: It concentrates first on fieldwork-led investigations in both geographical locations and on their reflection through the hyperextension process, showing maps of the investigated sites, excerpts from the photographic documentation of the object components, still images of performative actions conducted in response to specific site contexts within the explored hydroelectric projects, and additional graphic material discovered or developed during the research which has informed these actions.

The second part documents four exhibitions held in Seyðisfjörður, Iceland, and London, UK, during the course of the research project. The images presented here show installation views and details, as well as photographs of individual works, of excerpts from serial works, and of props used in the performative actions.

The performative actions, documented here in form of still images and additional material referring to their context, are understood as constituting both an investigation and a form of presentation at the same time: While being structured and framed as performances, the actions took place in the mode and under the conditions of field research, on site and without audience or other participants. As one-to-one confrontations with selected site contexts, they undertake an active "folding-together" of obvious and not-so-obvious components of the hyperextended object, and produce a new level of personal investigative experience, thereby inscribing the artist's action into the hyperextended object.

This hyperextension case study, through its alternation between investigation and exhibition, has directly informed the development of the concept of the hyperextended object presented in my written thesis. At the same time, the gradual theoretical development of the concept has continuously challenged the way in which I have presented my practice, and has informed artistic and curatorial choices within the project.

All photographs, maps, still images, and artworks have been produced by myself, unless otherwise specified.

From Blackwater to Kárahnjúkar

Hydropower and aluminium production in Iceland and Scotland

A hyperextension case study, 2010–2014



Figure 48: Blackwater dam, Scotland, built 1905-08, 27m high, 914m long, 20 MWh/a. Main dam (of 2) of Blackwater Hydroelectric Project, powering British Aluminium smelter (now Rio Tinto Alcan).

Figure 49: Kárahnjúkar dam, Iceland, built 2002-08, 193m high, 730m long, 4600 GWh/a. Main dam (of 5) of Kárahnjúkar Hydroelectric Project, powering Alcoa Fjarðaál smelter.

Blackwater Hydroelectric Project, Scotland
Fieldwork 2010/11

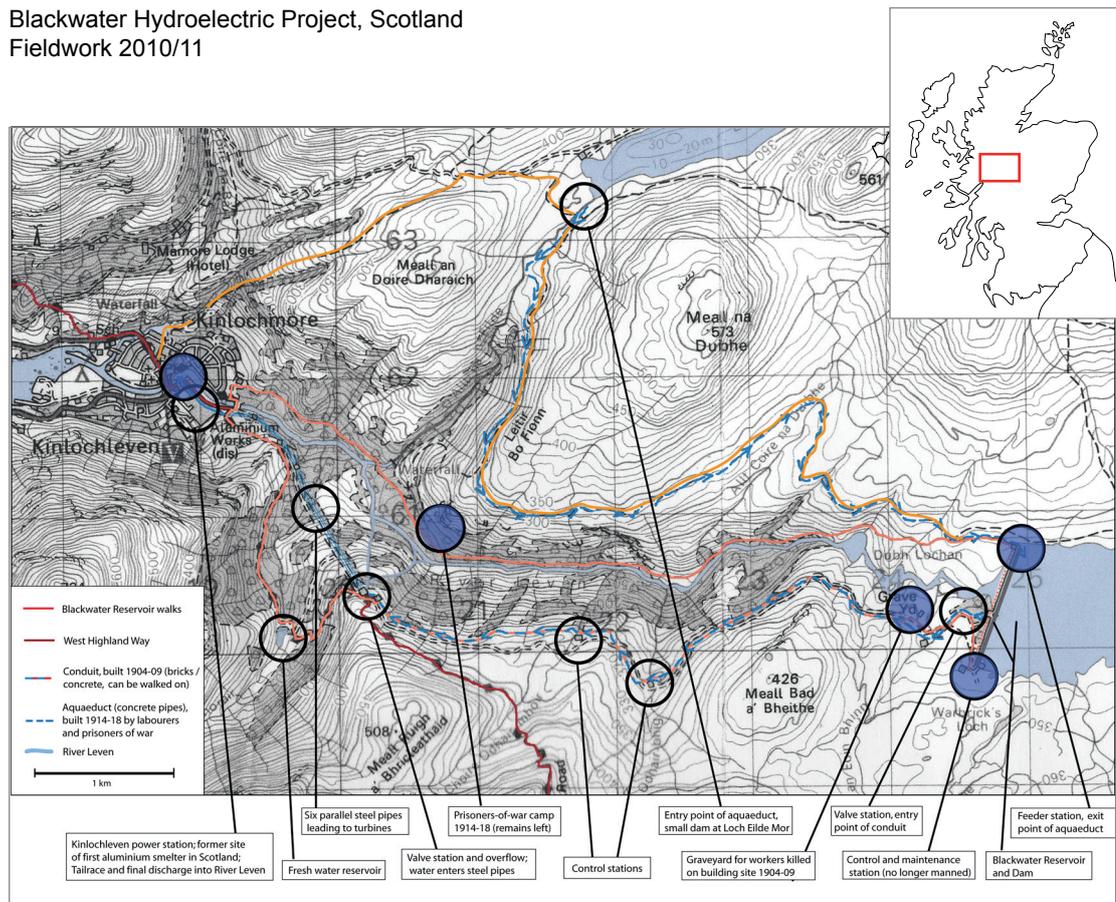


Figure 50: Map showing the components of Blackwater Hydroelectric Project near Kinlochleven, Scotland, the undertaken walks tracing them, and locations of performative actions (blue dots).

Figure 51: *Dam Crossing*, 2011, performative action, video still.

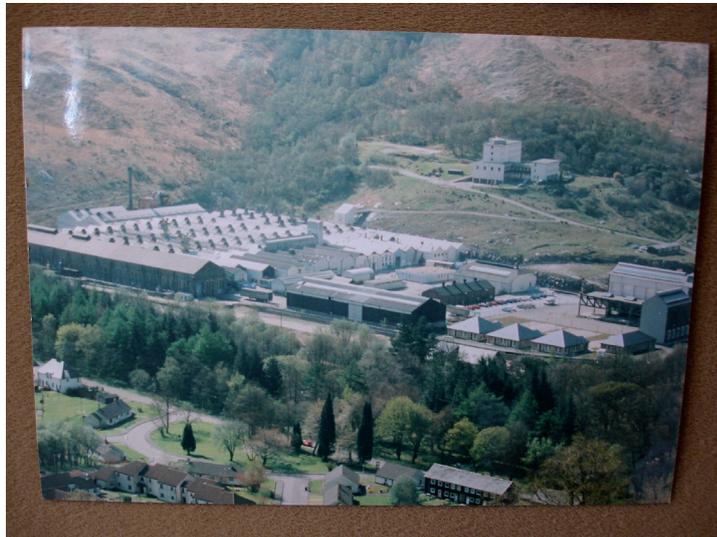


Blackwater Hydroelectric Project, 2010/11, photo documentation, selected images.

Figure 52: Valve station between conduit and headrace pipes.

Figure 53: Conduit leading from the dam to the valve station.

Figure 54: Pipeline extension, leading from the northern reservoir to Blackwater reservoir.



Blackwater Hydroelectric Project, 2010/11, photo documentation (selection).

Figure 55: Blackwater dam and construction workers' graveyard (foreground).

Figure 56: Detail of museum display at The Aluminium Story, Kinlochleven, showing photograph of the aluminium smelter in Kinlochleven.

Figure 57: Headrace pipes leading to Kinlochleven power station. Behind it the empty site of the decommissioned aluminium smelter.



Aqueduct Walk, 2011, day hike along the entire length of the concrete aqueduct built by WW I prisoners of war, which extended the Blackwater infrastructure when the war increased demand for aluminium, and hence for more hydropower.

Figure 58: The aqueduct, photo documentation.

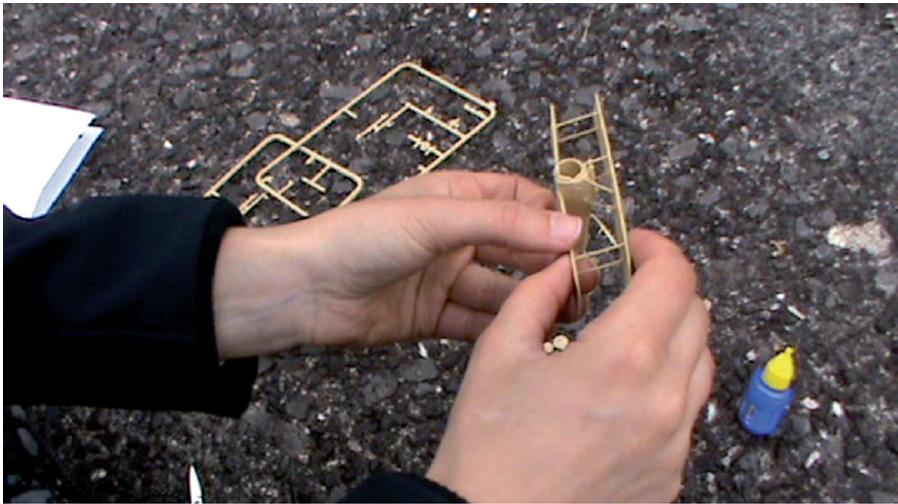
Figure 59: Video still, video documentation of walk.

Figure 60: War prisoners in Kinlochleven, photograph, circa 1917, detail of museum display at The Aluminium Story, Kinlochleven.



Not Known, 2011, performative action at the workers' graveyard opposite Blackwater dam. The engraving on the stone for an unknown itinerant worker was traced by hand on a sheet of aluminium foil.

Figures 61 and 62: Still images of video documenting the action.
Figure 63: Photo documentation of the tracing.



Sopwith F-1 Camel, 2011, performative action on the former site of the war prisoners' and construction workers' camp near Blackwater dam: building a model of the first British WW I fighter plane made with aluminium parts.

Figures 64 and 65: Still images of video documenting the action.
Figures 66 and 67: Photographs documenting the process.



Sopwith F-1 Camel, 2011, performative action at former war prisoners' and construction workers' camp near Blackwater dam: building a model of the first British WW I fighter plane made with aluminium parts.

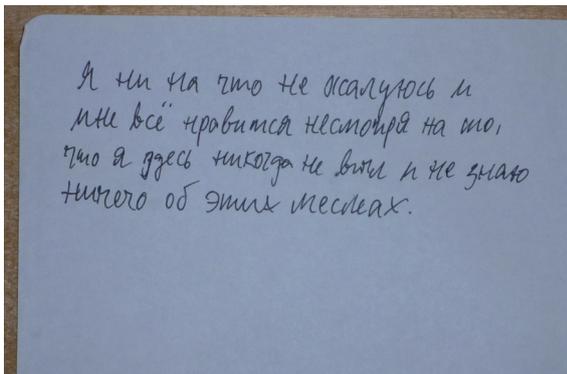
Figure 68: Still image of video documenting performative action.

The plane is 'flown' across the site of the former war prisoners' camp.

Figure 69: Still image of video documenting construction process:

The plane is clad with aluminium lids from yoghurt pots (own consumption).

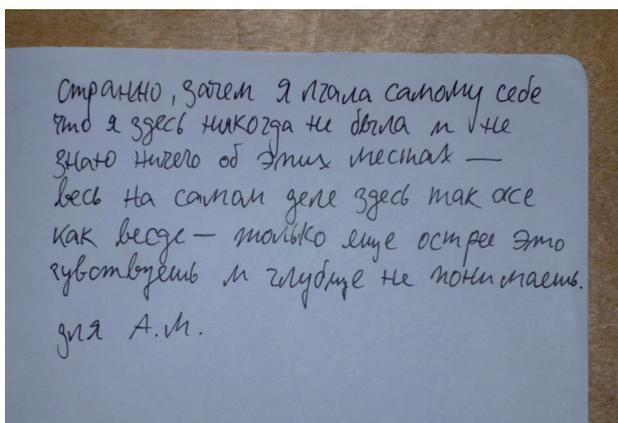
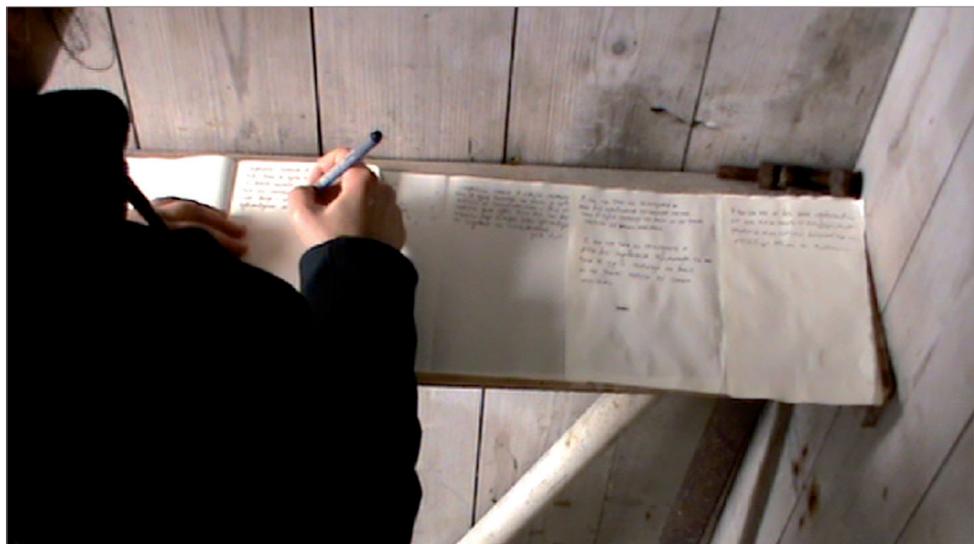
Figure 70: Site of the workers' camp, 2010. From the photo documentation of Blackwater Hydroelectric Project.



'I do not complain about anything
and I almost like it here, although
I have never been here before
and know nothing about this place.'
(A. Monastyrski)

For A.M. (One), 2011, performative action on several sites around Blackwater Hydroelectric Project, reflecting on the perception of place and on the effect of repetition and rhythm on individual fieldwork encounters: Andrej Monastyrski's *Losung 1* was memorised and noted down when encountering a strong subjective experience of place within the Blackwater site.

Figures 71 and 72: Still images of video documenting the action.
Figure 73: Photo of notebook entry, original text, English translation on the right.



'I wonder why I lied to myself that I had never been here and was totally ignorant of this place - in fact, it's just like anywhere else here, only the feeling is stronger and incomprehension deeper.'

(A. Monastyrski)

For A.M. (Two), 2011, performative action on several sites around Blackwater Hydroelectric Project, reflecting on the perception of place and on the effect of repetition and rhythm on individual fieldwork encounters: Andrej Monastyrski's *Losung 2* was memorised and noted down when returning to a place within the project site that had caused a strong experience at first sight.

Figures 74 and 75: Still images of video documenting the action.

Figure 76: Photo of notebook entry, original text, English translation on the right.

Kárahnjúkar Hydroelectric Project, Iceland
Fieldwork 2011/2012

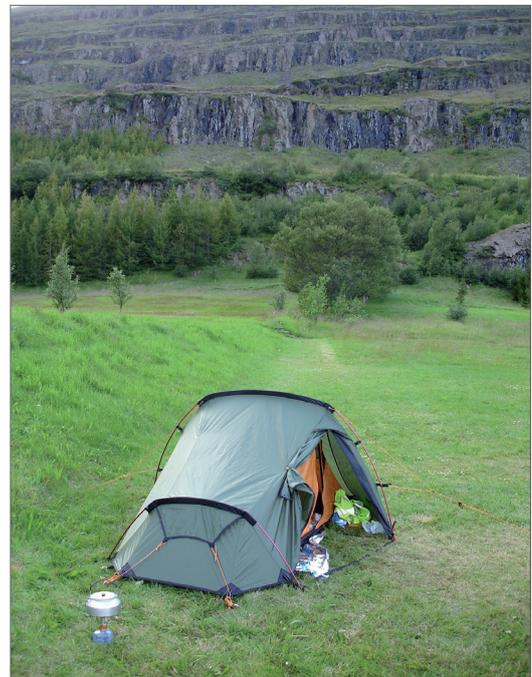
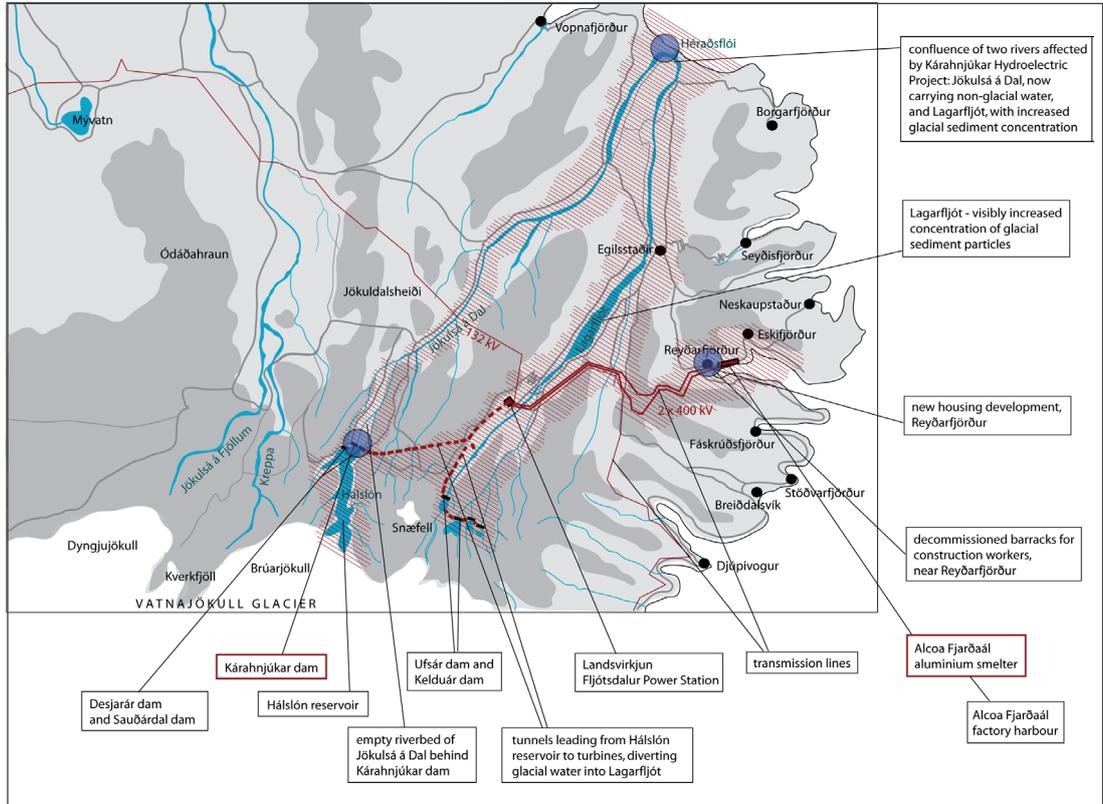


Figure 77: Map showing the components of Kárahnjúkar Hydroelectric Project and its hyperextensions in East Iceland, and the locations of performative actions (blue dots).

Figure 78 (left): Fieldwork around Kárahnjúkar dam, 2012. Photo: Ivita Gérmene.

Figure 79 (right): Fieldwork near Fjóttsdalur Power Station, 2011.



Kárahnjúkar – Reyðarfjörður – Héraðsflói, 2011/12, photo documentation, selected images.

Figure 80: Construction worker's camp outside Reyðarfjörður, in use during the construction of Fjarðaál aluminium smelter, now abandoned.

Figure 81: Kárahnjúkar dam.

Figure 82: Alcoa Fjarðaál aluminium smelter, near Reyðarfjörður.

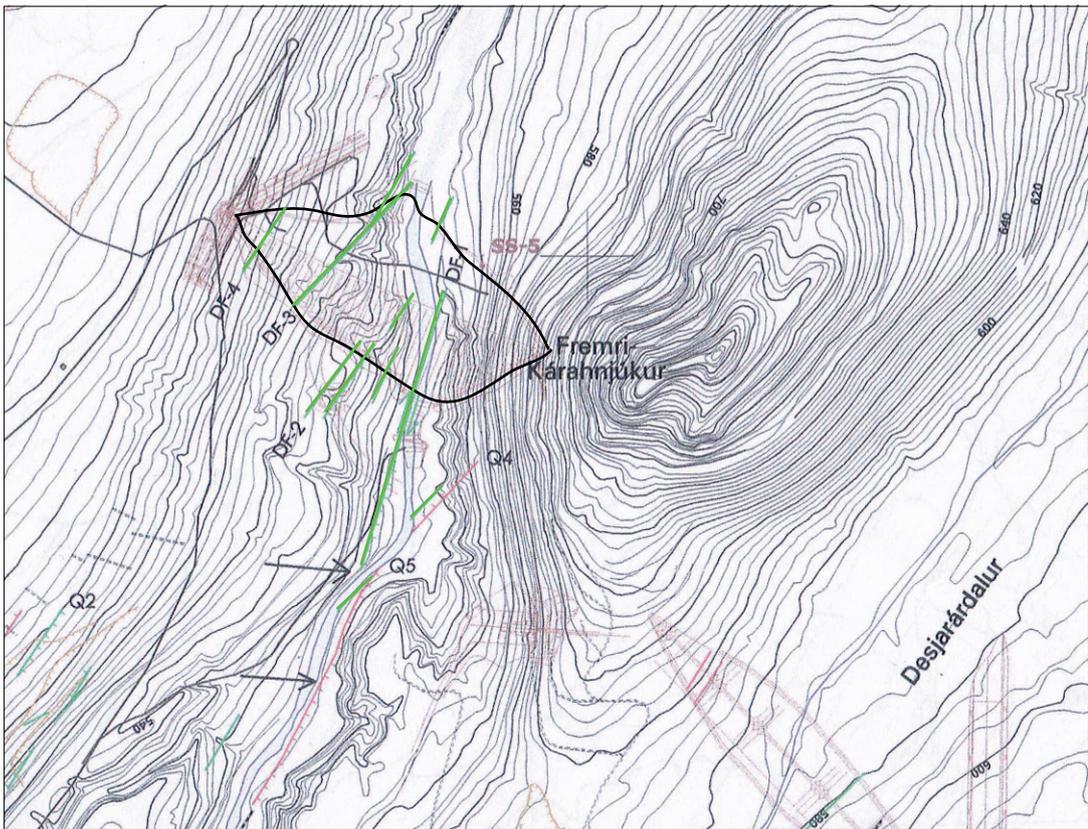


Kárahnjúkar – Reyðarfjörður – Héraðsflói, 2011/12, photo documentation, selected images.

Figure 83: Transmission lines leading from Fljótisdalur Power Station to Alcoa Fjarðaál aluminium smelter.

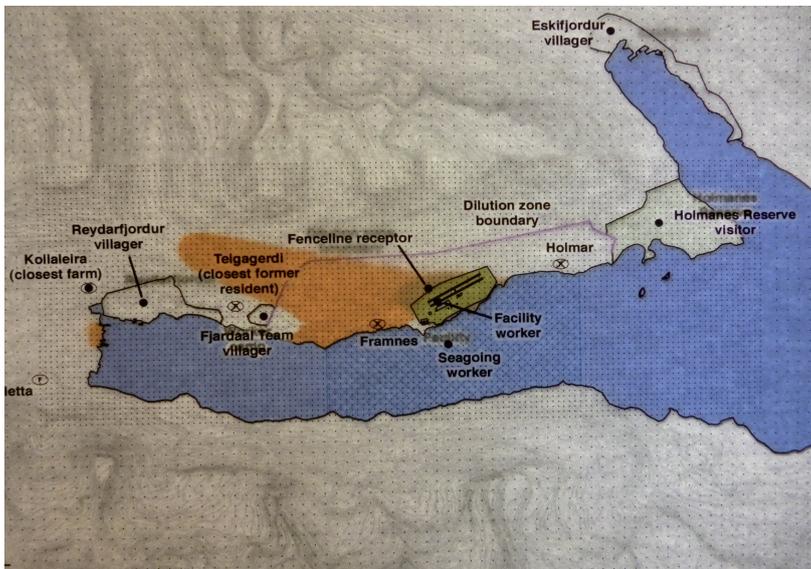
Figure 84: Meeting room of the construction workers' camp, Reyðarfjörður, in use during construction of the aluminium smelter, now abandoned.

Figure 85: Grill potatoes wrapped in aluminium foil, local supermarket.



Detachment, 2011, performative action on top of Kárahnjúkar dam, responding to a research report that evaluated the potential influence of the dam's weight on the stability of geographical fault lines discovered under the proposed site for the dam.

Figure 86: Video still of the documented action. Trying to lift my own weight off the site by jumping.
 Figure 87: Detail of map showing the location of currently stable fault lines under the dam (in green).
 The thicker black lines encircle the land area covered by the base of Kárahnjúkar dam.
 Base map by Kristján Sæmundsson and Haukur Jóhannesson, *Kárahnjúkar Sprungukort*, 2006.



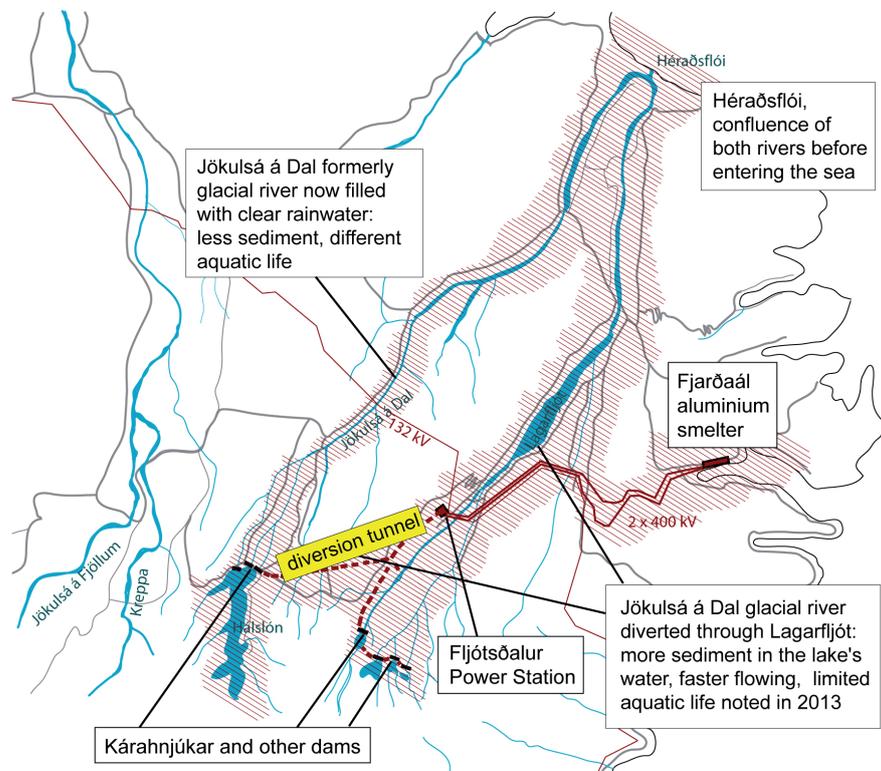
Dilution Zone, 2011, performative action on the line between the Fjarðaál aluminium smelter's dilution zone and the former construction workers' camp, near Reyðarfjörður, East Iceland.

Figures 88 and 89: Still images of video documenting the demarcation of the line. Figure 90: Map showing the aluminium smelter's dilution zone and projected fluoride deposit from air emissions. Collage of graphics from risk assessment report for Alcoa Fjarðaál, *Screening Risk Assessment for Air Emissions*, 2006.



Dilution Zone, 2011, performative action on the line between the Fjarðaál aluminium smelter's dilution zone and the former construction workers' camp, near Reyðarfjörður, East Iceland.

Figures 91, 92, 93: Still images of video documenting the action. Two symmetrical-looking plants, one inside, one outside the zone, were watered with an energy drink, then studied for differences. Figure 94: Digital collage of two still images.



Reversal, 2011, video, 2 min loop, showing performative action at Héraðsflói, East Iceland, exchanging glacial and nonglacial water at the confluence of the two rivers affected by Kárahnjúkar Hydroelectric Project.

Figures 95 and 96: Still images of the video.

Figure 97: *Diversion Map*, 2014, Kárahnjúkar Hydroelectric Project and its river systems.



Figures 98 and 99: *Contact (Potato Dam)*, 2012, performative action, throwing aluminium-wrapped grill potatoes at Kárahnjúkar dam. Photos: Ivita Gérmene.



Figures 100 and 101: *Contact (Potato Dam)*, 2012, still images of video documenting performative action, throwing aluminium-wrapped grill potatoes at Kárahnjúkar dam. Camera: Konrad Korabiewski.
Figure 101: *Props*, 2012, aluminium-wrapped grill potatoes on styrofoam trays.

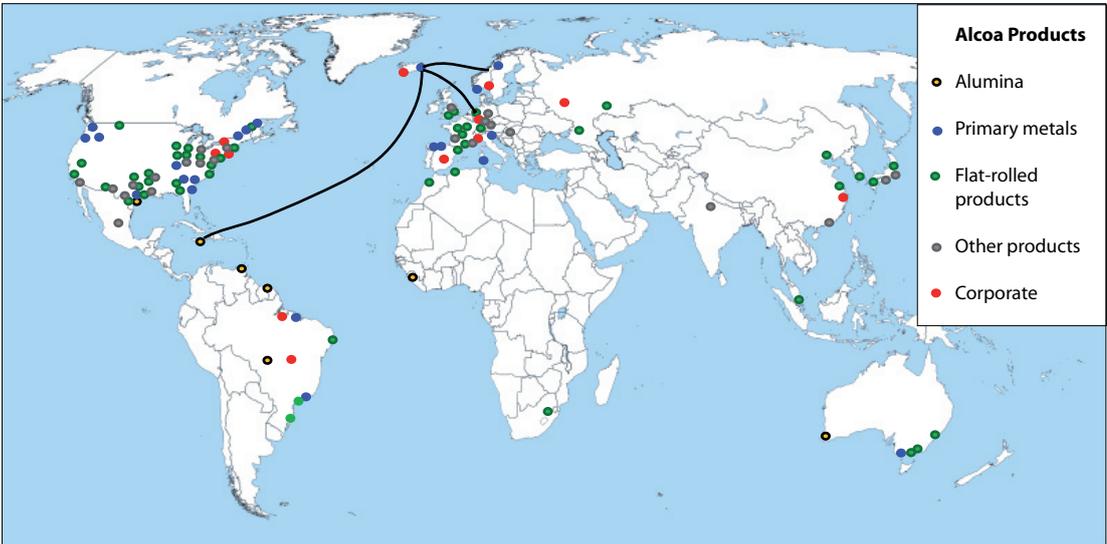
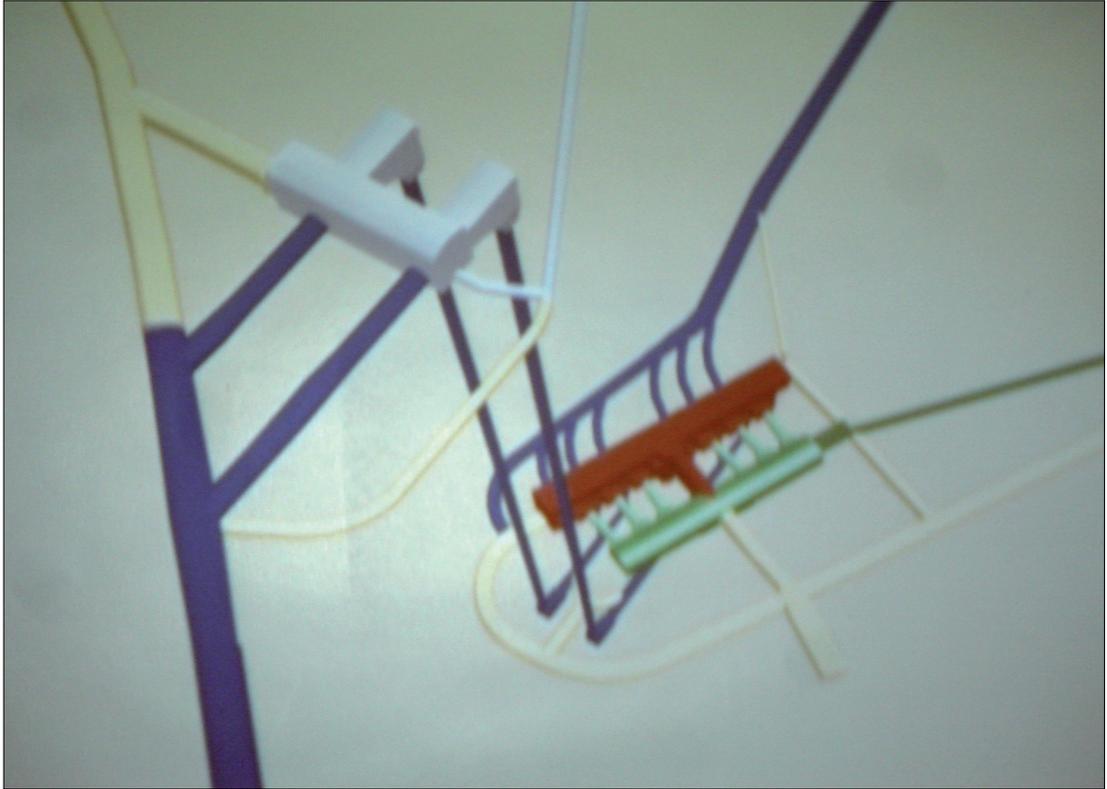


Figure 103: Photo taken of a video projection, 2011, showing an animated 3D-drawing of the underground Fljótsdalur Power Station. The animation visualises the spatial relations of the tunnel system and headrace pipes leading into and out of the turbine house. Landsvirkjun information centre, Fljótsdalur, East Iceland.

Figure 104: *Translocal extensions*, 2013, sketch map showing Alcoa's production locations worldwide. Direct material flows between Iceland (Fjarðaál aluminium smelter), Jamaica (Bauxite/Alumina production), Norway (Carbon anodes factory), and mainland Europe (further processing) are indicated by the black lines. Based on Alcoa's locations map on the company's official website, www.alcoa.com.



Figures 105 and 106: *Kárahnjúkar – Reyðarfjörður – Héraðsflói*, exhibition. Bókabúðin project space, Skaffell Center for Visual Art in East Iceland, Seyðisfjörður, Dec 2011–Jan 2012.

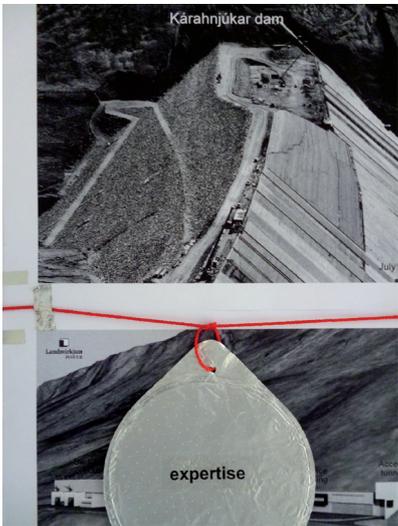
Video back-projection, 7 min loop, showing edited documentation material of three performative actions from 2011.

The exhibition was held during my second artist residency at Skaffell.



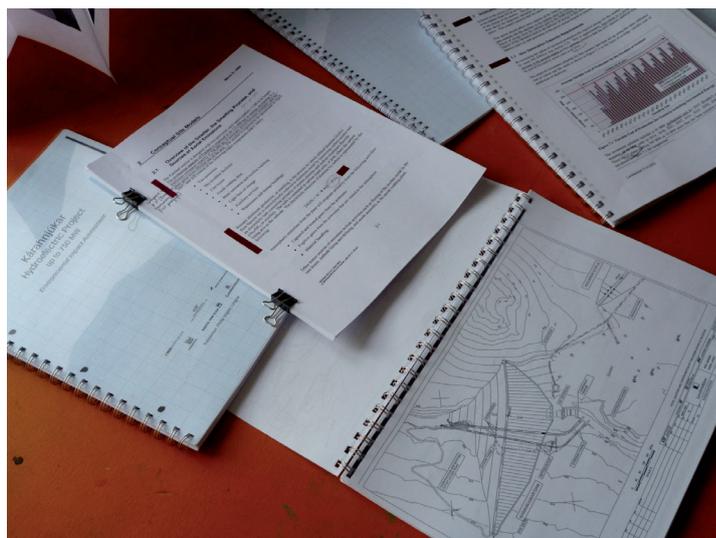
Kárahjúkar – Reyðarfjörður – Héraðsflói, Open Studio exhibition, Skaffell Center for Visual Art in East Iceland, Seyðisfjörður, July 2012.

Figures 107, 108, 109: Installation views.
The exhibition was held during my third artist residency at Skaffell.



Kárahnjúkar – Reyðarfjörður – Héraðsflói, Open Studio exhibition, Skaffell Center for Visual Art in East Iceland, Seyðisfjörður, July 2012.

Figures 110–115: Details of the exhibition, showing collages and objects, a presentation of the project's photo documentation, and research material.



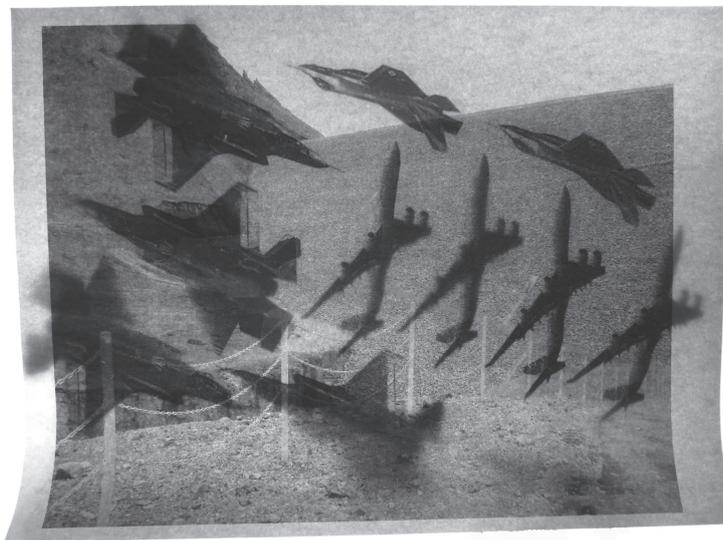
Kárahnjúkar – Reyðarfjörður – Héraðsflói, Open Studio exhibition, Skaftfell Center for Visual Art in East Iceland, Seyðisfjörður, July 2012.

Figures 116 and 118: Details of the exhibition, showing presentation of video material and parts of the project's research archive.

Figure 117 (middle): Project presentation during residency at Skaftfell.

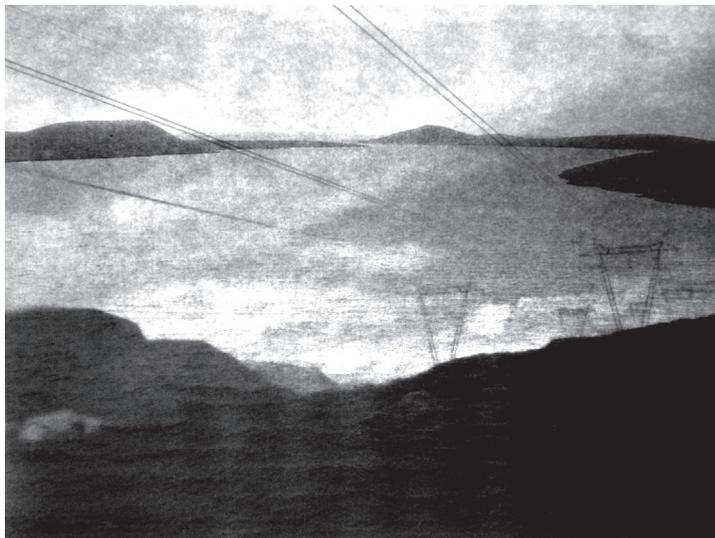


Kárahjúkar – Reyðarfjörður – Héraðsflói, Open Studio exhibition, Skaffell Center for Visual Art in East Iceland, Seyðisfjörður, July 2012, Figure 119: Installation view.
Figures 120 and 121: *Ends*, 2012, installation, colour inkjet prints and graph paper on light-table.



Objects and collages from *Kárahnjúkar – Reyðarfjörður – Héraðslói*.

Figures 122 and 123: *And/Or/And*, 2012, series of digital collages, using images from the project's photo documentation and its research archive.
Figure 124: *Pair*, 2012, basalt stone and aluminium.



And/Or/And, 2012, series of digital collages, using images from the *Kárahnjúkar – Reyðarfjörður – Héradslói* photo documentation.

Figure 125: Dried out canyon at Kárahnjúkar, and Fjarðaál smelter.

Figure 126: Háslón reservoir and transmission lines.

Figure 127: Fjarðaál smelter, Háslón reservoir, and Kárahnjúkar dam.



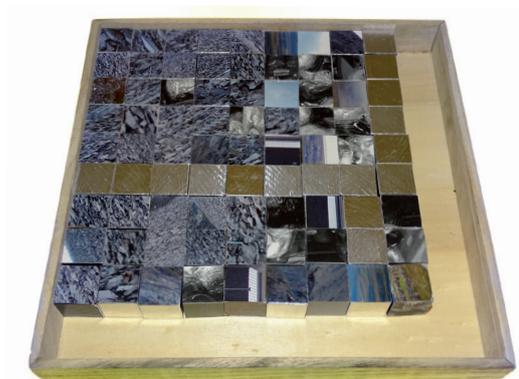
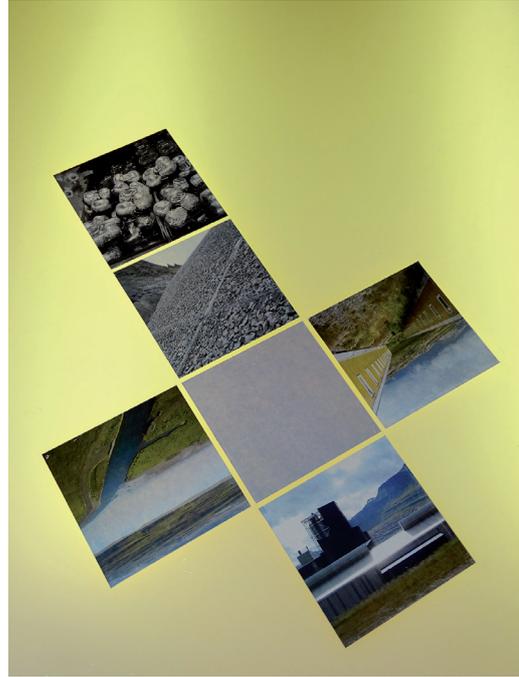
Blackwater – Kárahnjúkar case study in progress, 2010–2013.
Presentation of practice, Goldsmiths, University of London, Nov 2013.

Figures 128, 129, 130: Installation views.



Blackwater – Kárahnjúkar case study in progress, 2010–2013.
Presentation of practice, Goldsmiths, University of London, Nov 2013.

Figures 131 and 132: Details of installation, combining objects, collages, photos, and research material from the project's archive.

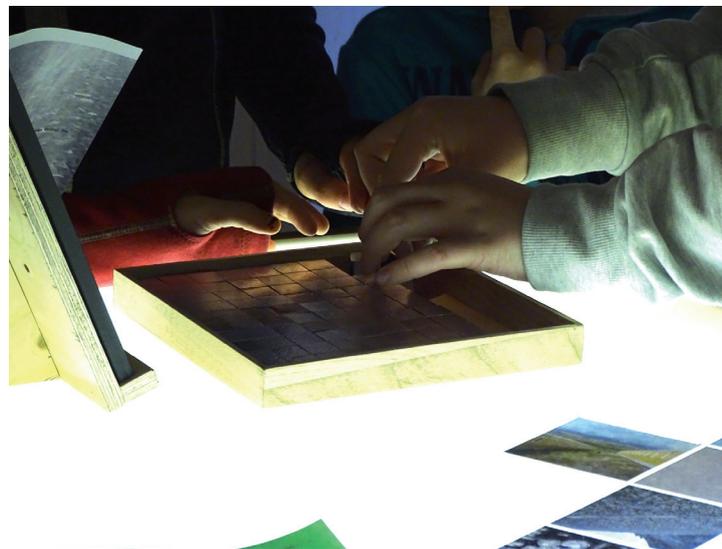


Figures 133–136: *Samrúni / Convergence*, 2014, installation. Includes artist book, dice puzzle and inkjet prints on light-table, all using images from the *Kárahnjúkar – Reyðarfjörður – Héraðsflói* photo documentation, and video, 7 min looped, on TV monitor inside the light-table, showing edited documentation of four performative actions in 2011 and 2012.

Shown in *RÓ RÓ*, group exhibition, Skaftfell Center for Visual Art in East Iceland, Seyðisfjörður, Jun-Oct 2014.



Figures 137, 138, 139: Details of *Samrúni / Convergence*, 2014, installation. Showing dice puzzle, made of 81 wooden dice in a wooden tray, five images from the *Kárahnjúkar – Reyðarfjörður – Héraðsflói* photo documentation, and aluminium foil.



Figures 140, 141, 142: *Samrúni / Convergence*, 2014, installation view. *RÓ RÓ*, group exhibition, Skaffell Center for Visual Art in East Iceland, Seyðisfjörður, Jun-Oct 2014.