University of South-Eastern Norway

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Becoming Heritage:

Pathways toward a more-than-human remembering

Dissertation for the degree of Ph.D
Culture Studies

Faculty of Humanities, Sports, and Educational Science

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South-Eastern Norway

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ABSTRACT

This thesis explores the themes of heritage, sustainability and becoming through research within the Rjukan-Notodden World Heritage Site. It begins by asking how industry becomes heritage, which, when considered against such a large and complex site and critical heritage studies literature, raises further questions of what heritage is and how things come into being. This opens for an ontological enquiry into heritage as a phenomenon and the inclusion of the more-than-human processes and perspectives sustainability research demands.

The concept intra-play is introduced as an onto-methodology. Both for thinking about and imagining what is encountered, and as a way of moving and engaging with the processes underway within the experiential landscape. Intra-play is understood as an aesthetic/sensory way of encountering and knowing the world haptically, encouraging more open, attentive, and performative methods for exploring and understanding phenomena. Here, video, photography, sound, and affective writing are used to capture and develop a sense of the more-than-representational qualities, through both a film and a written journey.

What is discovered, are qualities and features that speak to processes of remembering and becoming that stretch across vastly different temporalities but remain connected experientially within the landscape. The result is an understanding of heritage as the processes of more-than-human remembering that humans do not really control. Where what we encounter is not clearly definable outside of this larger whole, and the dichotomies often associated with heritage – between nature and culture, official and unofficial, material and immaterial – are instead seen to flow through and co-form one another.

This provokes questions regarding how we are directed and moved, why we research such things, who or what such research is for, and how it is to be valued and used without re-centring the human.

Key Words: *Industrial Heritage, More-than-human, Video Ethnography, Intra-play, Memory, Experiential Landscape, Becoming.*

CONTENTS

"... I´m an artist... those words naturally imply always seeking
without ever fully finding.
It´s the exact opposite of saying, "I know it already, I´ve already found it".
To the best of my knowledge, those words mean
"I seek, I pursue, my heart is in it".

Vincent van Gogh (2017)

CHAPTER ZERO

When considering the research approach this project takes, or rather the approach that has developed along the way, it seemed important to reflect on and discuss certain aspects at the outset. Methodologically my approach is phenomenological and object-oriented, exploring, describing, and considering what the phenomenon of heritage is experientially from within a UNESCO industrial heritage site. Theoretically, this project is closely associated within the transdisciplinary field of critical heritage studies, with a particular interest and emphasis on more-than-human ontologies.

In this opening chapter, I shall attempt to address the challenges and potential criticisms of such an approach. First, by situating myself (where I speak from and my own history) in relation to the project and the case study. Second, the audience, who I am speaking to, what the research is for and how others should evaluate my work. Finally, I shall consider my research approach, with particular emphasis on debates around phenomenological reflection, subjectivity, the inclusion of artistic and creative methods, the pros and cons of such forms of research, and issues of transparency important with regard to academic rigour (Tracy, 2010).

Situatedness

My own academic background is somewhat diverse and transdisciplinary from within the fields of filmmaking, cultural heritage, sustainable development, ecological thinking, and philosophy. Through my open and meandering approach to the subject at hand, I have found a natural affiliation within several other fields I have stumbled

into as my theoretical and conceptual positions developed, namely archaeology, geology, anthropology, human geography, and science and technology studies. These fields, as I have understood it, have all been going through something of a transformation with regard to how we do research and what it is we have access to, where many of the themes central to this project (sustainability, heritage, landscapes, and memory) are being re-oriented and re-understood in relation to these questions (Bangstad & Pétursdóttir, 2021; Barad, 2007; De Landa, 1997; Haraway, 2016; Howard, Thompson, & Waterton, 2020; Ingold, 2015; Olivier & Greenspan, 2011; Olsen, 2021; Petursdottir & Olsen, 2014; A. L. Tsing, 2015).

My two main interests and concerns coming into this project were related to culture and sustainability and the entanglements between these. With culture, I was (and am) interested in the traditions, ways of living and ways of expressing that form within different space-times and how these are dialogically related to the past and the future. Then also in how these multitude ways of being e/affect and become e/affected by how we think about and subsequently act within the more-than-human world. This entwined process between culture and the world is, I argue, fundamental to a basic notion of sustainability, as in our ability to sustain. Sustainability as a term has a complicated history of varying and contested uses (Dessein, 2015; Soini & Birkeland, 2014). And while this term was central at the outset, I have in many ways moved away from it due to its overtly political and economic associations. Instead, I think about sustainability in terms of how we experience the world we encounter, which intra-relations are flourishing, and which are not, where the ability to sustain is understood to derive through a continual dialogue across differences. Sustainability, as such, can be understood as the processes of continually moving and changing together, a working out, and not about attempts to preserve and maintain a particular status quo.

My interest, therefore, lies in experiences, and the encounters and constellations of matter and memory that constitute those experiences. While my approach endeavours to apply an open and drift-like research method, I understand and accept the role that knowledge of history, personal experience, memories, and biases can and

do play. It is therefore important to situate myself further related to the specific case study this project focuses on.

The Rjukan-Notodden World Heritage Site shall be introduced in more detail later, but I felt it important here to clarify my own history with the area and how this relates to the project. When I applied for the PhD position, this site was designated as one of the case studies that should be included, along with the question of ´how industry becomes heritage´. Asides from this, the research approach, themes, and emphasis remained open.

The site is relatively large, incorporating the two company towns of Rjukan and Notodden, which are about a one-and-a-half-hour drive apart along winding roads. In addition, the site includes an extensive waterway of rivers, lakes, damns, and pipes, as well as factories and housing. All in all, the site has been measured at 389.3 square kilometres.[1]

I first became familiar with the area when I bought a house thirty minutes outside of Notodden in 2011 and would visit the town from time to time. Then, as part of a study I took in Notodden in 2013, I conducted fieldwork related to the competing narratives that were shaping post-industrial identities there. This was prior to the UNESCO listing, although the application process was underway, and so I began by conducting a survey in the town centre, asking, among other things, why Notodden was there. The vast majority of people I questioned did not mention industrialisation as a reason, which I found curious, and I suppose the result would be very different if I was to ask the same question today.

At the time I was reading Guy Debord and had become interested in his theory of drift (dérive), the character of the flaneur, and psychogeography (Coverley, 2010; Debord, 1983). I decided to explore how I might apply these methods while researching the town and its narratives further. I explored the town on foot, allowing

[1] https://whc.unesco.org/en/list/1486/ (retrieved 14.11.22)

myself to be drawn by the various ambiences and phenomena that called out to me. Through this, I became interested in desire paths as traces of contemporary movements that I found often led to interesting and hidden places. I also met people and sparked spontaneous conversations that later became more formal interviews if they were interested. Through this approach, I captured several diverse and in-depth narratives of the town, understandings of the past, and people's visions of the future, as well as a haptic sense of the geography of the town.

One of the themes that came up repeatedly was the narrative of how the out-of-town shopping mall had drawn people away from the town centre. This led to a larger study of shopping malls in rural Norway a few years later, where I compared the experience of malls with the social-historical consequences they have on other places. I again used inspiration from Debord and the flaneur when thinking about how I moved and was being moved by my surroundings, and subsequently what I encountered and how this was experienced, but this time in combination with a more structured phenomenological approach that aimed to draw out different ways of knowing.

There have been several criticisms aimed at both Debord´s theory of drift and the character of the flaneur that it is important to be aware of. As even though these play a minimal role in this project's methodology, and other methodological concepts such as wayfaring offer alternatives, it remains a part of my history of influence, and I remain attached to the notion of drift.

Debord´s theory has been criticised for, in the end, becoming too specific, where while promoting a drifting and open approach by the researcher on the one hand, it still endeavoured to arrive at general provable findings, it became too fixed and rigid (M. Smith & Morra, 2006). Then the character of the flaneur (which Debord represents) has been problematised more recently as an example of the privileged right to move freely that is often associated with a wealthy, educated, white man (Boutin, 2012), a category I also fall into.

As much as I might try to bracket or maintain an awareness of myself in relation to this critique, I cannot and should not ignore or attempt to smooth over the

influence this has. This is something that I became explicitly aware of when studying shopping malls – with regards to access – where I often passed people who were not allowed in at the entrances or when treated differently than the groups of teenagers when I lingered and loitered in malls for many hours without any clear purpose. Added to this identity is my role as a researcher, my university credentials, and my props (I often carry a sound recorder and have a camera over my shoulder). My projected identity, both in terms of my race, gender and credentials, shape how I am met and responded to whilst moving around. That said, I am also a foreigner, I have lived in Norway for many years and speak the language, but when I meet and speak with people, it is immediately clear that I grew up in another country and am, as such, a cultural outsider.

When starting this project, therefore, I was familiar with the various narratives about the area, both historically and with the competing identities unfolding more recently. Most of my experiences had, however, been in Notodden, and prior to this project I had only visited Rjukan once on an organised bus tour to the industrial museum at Vemork, and I was unfamiliar with the wider landscape that lay in between and around these towns.

My perspectives had changed though, and I had become more aware and interested in the wider more-than-human context of culture. I then became further oriented toward the more-than-human processes that help shape our heritage, through critical heritage studies literature that chimed with my understanding of sustainability as a matter of more-than-human entanglements and modes of remembering. Where attempts to preserve and maintain sites and objects authentically actually, on another register, work against the processes through which things come into being. Turning memories into fixed interpretations and former sites of remembrances into weird theme-park-like places that become temporally disconnected (Olivier & Greenspan, 2011).

I have not, however, sought to create an either-or with regard to heritage, and I do not lock out, exclude, or directly criticise official heritage processes. These, I

maintain, are also valid and valuable processes that are a part of shaping what and how things will be remembered in the future, although perhaps not in those ways intended. They remain a part of the heritaging that unfolds, of what comes into being, but I do not intend to treat these official processes any differently than the so-called unofficial processes and in fact come to argue that such dichotomies do not really exist. When I refer to *heritage landscapes* throughout this thesis (as I shall explore later), I am therefore acknowledging the official UNESCO boundaries of the site, which, despite considering them to be artificial and arbitrary ontologically, I have chosen to remain within. This is a conscious choice, not only for maintaining a proximity to the official heritaging but also practically, this project is not random, and its open approach does not alter the fact that it is oriented around industrial traces and what they are becoming.

As the project developed, however, I have found that I have been drawn toward the edges and in-between spaces of the dichotomies that have been so central to heritage designations in the past. Which, as I argue, when experienced, are found not to exist in any definite way. This drawn-ness, as in how I have been directed and moved, can be found to have been influenced by several factors.

First, my open, wondering, and privileged history of flaneury, along with my curiosity to follow unofficial desire paths, tended to lead away from official ways of moving. Second, I found that my notion of sustainability encouraged an attentiveness toward more-than-human entanglements, where my gaze would linger and form attachments. Third, the confirmative influence of other research from a wide variety of disciplines that are also looking to study the phenomenon of Heritage differently. These influences have encouraged the trajectory of this project and supported what I find to be important and valuable with such research. Forth, as alluded to above, this project is oriented around a former industrial landscape which acted as a magnet. I could have taken a great many different routes that would have found little or no traces of industry, but it is those qualities that I was seeking and thus drawn towards, and the differing forms of heritaging they suggested. Finally, it is difficult to assess the impact of the covid-19 pandemic and how this influenced my project. I was

already approaching the subject from a more-than-human perspective; however, it is probably safe to say that the pandemic pushed the human even further into the periphery for obvious reasons,[2] even though they are ever present in sounds and traces.

Audience

My hope is that this research project will be interesting and relevant to people working and researching within the heritage field, specifically in relation to the themes of sustainability, more holistic heritage practices and processes, and experiential heritage, as well as those interested in broadening the scope of how heritage landscapes can be experienced and the impact they can have beyond fixed or bounded sites.

I wish to contribute to the ongoing dialogue around new methodologies, writing styles and ways of disseminating research within the various disciplines I have mentioned, providing additional examples toward this. I am not, however, interested in only writing for people who already agree with me or who work with similar approaches. And the purpose of such dialogue, as I see it, is not to find one right way but to open for multiple ways of knowing and understanding phenomena. It is about feeling one's own way and considering what this contributes. I therefore also wish to present a convincing case for how such forms of research can contribute new perspectives within heritage studies more broadly, not by seeking to replace or criticise directly, but by enriching and expanding what heritage can mean and how it can be studied and understood.

That said, the results of this research project should not be read in comparison to more goal-oriented research. I do not seek nor try to imply that the conclusions I

[2] For anyone reading at a later date; during the covid-19 pandemic, there were strict restrictions on movement and interaction as well as mandatory social distancing over a two-year period during this project.

arrive at are general or universal, but rather that they are intra-subjectively co-formed between myself and the world I encounter. I move and am moved, I encounter and am encountered, I experience and am experienced, where what forms as a result is understood to be co-formed along the way. I do not, therefore, suggest that someone could follow what I did as a formula and come to the same conclusion. Conversely, the point is that they could not, even though there may be similarities, as they would not encounter the same space-time, and they would not experience or be experienced in the same way. But that is not to say that what my research uncovers is not there. My path of movement is shaped through engaging and encountering other material, sensory, storied, or signified forms along their own lines within the landscape. And the qualities and features that became the focus of my attention are forms of becoming that were and, in some or most cases, still are underway. The important point is that a research approach that was more pre-planned or pre-determined regarding its focus and direction would have uncovered something else.

The way this thesis has been written and its layout are in many ways recognisable, yet in other ways, may be read as different from what is more traditionally expected. The first part includes chapters introducing the project, themes, and challenges, locating the project theoretically and describing the ontological and methodological approach. This first part was not developed in isolation, there is an overlap, where the ontology, methodology and theories have formed in dialogue with the early fieldwork and prior experiences and the central themes of heritage and sustainability. There does remain a gap however, between parts one and two and this is, in a sense, required or inevitable.

Part one seeks to prepare a methodological openness, but also sets a loose frame with regard to what and where is being studied, without knowing specifically what will be encountered. Part two consists of a film, along with photography, sound recordings, and descriptive writing that endeavours to allow for varied qualities, features and ambiences to be drawn out and become central. Then through the process of writing about these qualities, they are transformed into open concepts (that

I come to call renderings), giving a sense of how heritaging can be experienced. These qualities and concepts did not exist in part one. And while it might be more usual for concepts to lead enquiries, the aim here was, through including artistic and experimental approaches, to explore how concepts can be encouraged to emerge along the way and then consider what they suggest and reach out toward. As such, the specific features, qualities and concepts that form through the fieldwork are not mentioned directly in part one.

My intention is for this research to contribute examples within the transdisciplinary fields I have discussed, but also that it be seen as a methodological experiment that can be adapted and applied in other settings. While the methodology has been developed within a large industrial heritage site, I suggest that such an approach can be useful for exploring a wide range of complex phenomena (which I consider most phenomena to be) and their spatial and temporal intra-relations. It is not an approach that stays still and focused on isolated things but continually seeks out new potentials and complex connections, even though such findings are inexhaustible. In that sense, it is an approach to research that endeavours to develop a sense of something rather than a fixed and final answer. Something, I argue, is required from a more-than-human sustainability perspective, where sustainability is not an endpoint but about finding ways of continuing without fully knowing.

Rigor

As I have stated, this project uses a methodology that is phenomenological, drawing influence from object-oriented ontologists such as Graham Harman (2018), Timothy Morton (2010, 2018), and Ian Bogost (2012, 2016), Tim Ingold´s (2011) phenomenology of attention, and Bernhard Waldenfels (2011) phenomenology of the alien. These, I find, are approaches that follow a strand of embodied and attentive phenomenological enquiry that open for more artistic and metaphoric enquiries rather

than interpretively seeking an essence. These approaches relate to the phenomenology of Maurice Merleau-Ponty (2013), rooted in the notion of being-in and toward an open-ended world that is continually forming and changing. Where through being-in this intra-subjective body-world (or "flesh"), one might reveal (however partially) the threads of meaningful relations that illuminate the complexity of all forms.

What I have begun to describe, which shall be explored in greater length in the onto/methodological chapter, are the positions and philosophy behind my approach, which I found made sense when considering the phenomenon being studied, which are themselves the subject of debate within phenomenology.

Linda Finlay (2009) outlines some of the central positions that need to be considered when using such an approach, which are important for me to clarify. These include; whether the aim should be to formulate general or idiographic descriptions, the role of interpretation, if we should attempt to bracket or bring forth the subjectivity of the researcher, and whether phenomenology should lean more towards art or science.

As I have already alluded, and shall become abundantly clear as the thesis progresses, I have taken positions on these points that are rooted in my ontological argument and empirical experiences. I do not provide general descriptions of what might or will be experienced by someone else, but a description of an experience that has now passed that can, in a sense, be re-experienced. With my visual and sound work as well as with the writing in part two, I try not to interpret explicitly, as in telling the reader or viewer what they should think, feel, or understand directly. I do draw conclusions about what I have learned, what it has meant to me and how this has formed, but I also try to leave enough openness for other readings and interpretations to be drawn and for these to change over time. This is perhaps clearest in the film, which draws on a tradition of non-narrative cinema seeking to evoke an experience of an experience that is partial rather than a coherent and defined narrative.

In terms of my subjectivity, I seek neither to entirely bracket myself, as I do not believe this is possible in fullness nor useful with regards to my approach, but neither do I explicitly push myself into the foreground. I am there, I influence the world, and

the phenomenon that reveals itself is, in essence, a journey of movement formed between myself and what I explore, yet I do not try to impose myself and alter things in unnecessary ways. The encounters I have and document, and the qualities that reveal themselves, are in many ways random, but they remain connected rhizomatically within the complex landscape, continually becoming in varied ways. I find the following Gadamer quote a useful point of reflection:

> This openness always includes our situating the other meaning in relation to the whole of our own meanings or ourselves in relation to it ... This kind of sensitivity involves neither "neutrality" with respect to content nor the extinction of one's self, but the foregrounding and appropriation of one's own fore-meanings and prejudices. The important thing is to be aware of one's own bias, so that the text can present itself in all its otherness and thus assert its own truth against one's own fore-meanings. (in: Finlay, 2009, p. 13).

This is an important point, but I would argue that there are limits to such reflexivity that are perhaps necessary for what I am proposing, where attempts to isolate or divide up what is me and what is the so-called other are on one level futile, given the complexity of our entanglements, and on another level counter to the fundamental idea of the more-than-human ontology I am proposing. I think it is important to be clear and transparent about my involvement, but that an overt focus on reflection runs the risk of drawing the focus further and further away from the phenomenon of interest (which is the unfolding landscape I am a part of) into what Karen Barad (2007) suggests is a hall of mirrors reflecting on reflections, where the goal is to attempt to define what something is by excluding what it is not. Such a proposition might seem logical from an ontology of separate things encoded with meanings that are waiting to be uncovered but is oppositional to an ontology of inseparable things that are continually forming and reforming what is meaningful together. In this later ontology, which my approach fits, it is rather, as Barad goes on to argue, we are a part of that we seek to understand (p.184).

Regarding the inclusion of art, I find artistic processes and methods offer a great deal of potential within phenomenological research and research in general, particularly when it comes to exploring the complexity of developing ways of knowing within a more-than-human world, but also within the field of heritage studies, where social, cultural, technological, geographical, and geological process are so intimately entwined. It seems to me that such scales call out for creative and imaginative ways of thinking about a world that is too complex to grasp fully. This requires, on the one hand, a rigorous awareness of oneself, of what is and isn´t being done and what is and isn´t being opened for with regards to the applicability and value of such research. And on the other hand, it also requires from the reader an acceptance that such research will form a different type of knowledge, one that does not result in neat and coherent facts but rather seeks to open up new paths and needs to be understood in relation to the other forms of research it is in dialogue with.

With my approach to research, I am not seeking to be directly critical or dismissive of other or earlier forms of research or practice within this field. In the first chapters, I have attempted to address the history of certain theories and concepts and where I depart from them, both to orient this project in relation to those histories, but also to head off any abductive conclusions the reader may draw, specifically in relation to the terms; landscape, sustainability, heritage, play and memory. My approach is rather concerned with what comes "after" earlier uses of these concepts, following the theoretical perspectives that have become essential throughout this project, namely those associated with the so-called material, more-than-human and object-oriented turns. The term "after", which I borrow from Olsen et al. (2021, pp. 2-3), is made distinct from the often-used term "post", which is deemed to be more oppositional or directly critical toward more discursive research practices, "after" rather refers to a moving on and a seeking out new ways of forming knowledge and of writing. Where, for example, in the case of my project, it could be said that I am seeking to understand the phenomena of heritage *after*. Similarly, with the notions of landscapes, memory, and sustainability, I am interested in what they are after and beyond how they have been researched and understood in the past and then draw out their hidden potentials

as they appear and are experienced within the world in a more bodily and sensory way.

There are shortcomings within this new turn, as Olsen et al. (2021) describe, and it is important to be aware of these. First, reflecting on what is "turned to" and what is "overlooked and ignored", to avoid a "material elitism" that bypasses what Latour called the "missing masses". Second, a tendency to study materialism but from a continued "arm's length" where theories and concepts still dominate over embodied encounters. Third, endowing human qualities and values onto materiality and subsequently smoothing over their "unruly" and "less pleasing affordances" (pp. 7-8).

The first and second points I believe I have dealt with methodologically, by opening for a more drifting and haptic way of moving and attending and then allowing (or encouraging) conceptual renderings to develop from the qualities and features encountered. The third point refers to anthropomorphism and, again, a form of elitism in what it is we notice and attend to. I have tried to counter this by my manner of description, which does not disguise that it is my experience. And then, through the use of more poetic and metaphorical language, which, although is still ascribing qualities, does so in a way without reducing them down to any one final thing and recognises their value beyond what is immediately available. At the same time, these descriptions and qualities open for wider social, political, and ecological interpretations and potential future research projects where their meanings become contested again.

One final point I would like to make is with regards to transparency and the need, as I see it, to balance the importance of transparency when presenting research while also remaining open for the level of indeterminacy necessary for other readings to emerge. In this project, for example, part of what I seek to do with the more-than-representational expressions, which are the film and sounds and, to an extent, the written experiences, is to evoke an "experience of the experience" without telling the

viewer/reader specifically what I think they should feel or think or how they should react, that is not reducing it down to a closed representation. At the same time, I am intra-subjectively a part of what is encountered and how it is experienced. There is a drawn-ness and e/affects occurring in-between myself and the experiential landscape I am a part of, and again, I of course need to be reflective and critically aware of this. Equally, the reader/viewer needs to be aware of this gap, between what I try to convey and what they bring with them and the meanings and interpretations they arrive at (which may be different from other readers/viewers) and be cautious not to project their own interpretations or the manners in which they become provoked and affected as a part of my intention. I am specifically opening for and encouraging multiple readings.

For example, I have an aesthetic disposition that has developed through my life, my upbringing, my education, my family home and social class, the changing trends over the decades I have lived, my love of film, studying filmmaking and visual arts, heritage and history. As I point my camera, my hand and eye work in unison to balance the shot in some way, to emphasise what it is I see unfolding and how this might be captured. I do all of this without having to think, it is a way of seeing I have embodied, but it communicates something. It has a history people can read about and say aha, that is why you did that, and this is what it means. Sometimes though, in this project, I have been focused on the sounds and, not wanting to distract from that, taken photos while barely looking through the viewfinder, snapshots, but this again has an aesthetic of its own, it can be read into. Then with the film, I have gone through the footage and chosen shots and edited them into a flow, a journey, not the journey, not the phenomenon encountered but something new. I have used techniques learned and practised at film school, a visual grammar, emphasising connections and disparities and varying scales of space and time. It is not thoughtless, but neither is it over thought, I have not hidden things for the viewer to uncover.

The point I want to emphasise, is that while I use inspiration from artistic methods and produce what could be called artistic works, this is not really the point. As Susan Sontag (2001) argued, my work is not intended to be read through the lens

of interpretation, hermeneutically whittled down to uncover a hidden truth or meaning. The art here is rather in the method, in the attentive unfolding and opening to what else is going on within the landscape beyond me, even though I am central to its uncovering and dissemination. I do not try or want to disguise myself (to perform objectivity), but neither do I want to make myself central and distract from the traces and forms I encounter.

It has seemed necessary for me to find a balance between being transparent about what I am doing and how I have done it, reflecting on what this itself does and could mean, but at the same time leaving an openness for different experiences and interpretations by the viewer/reader, to avoid any frustration as to what I mean. What I mean, I suggest, is "diffractive" (Barad, 2007). Which is to say, my reflections and understandings of the experience will change over time. Any conclusions I come to now will likely be different than those I come to in one or ten years' time, as I will have changed. It does not mean that the conclusions are not useful or actionable in any way, but that they accept transparently that they are not fixed and final, that they are of a particular space-time.

In dealing with transparency without closing for the possibility of multiple readings has required a reflective openness that situates this project and me as the researcher, and it is this I hope I have begun to do here.

PREFACE

Up on the mountain plateau, the rain is falling gently. Looking up to the sky, it takes a few moments to feel the flakes of water on my skin. Almost undetectable but for the definite wetness that accumulates. Not at first, but steadily, over time, everything becomes soaked through. Water collapses out of the branches as I brush passed. All this water, arriving one unnoticed drop at a time, absorbing into the grass and moss, the wool of the sheep, the fabrics of my clothes. I try to imagine its journey.

Water moves downward always. Moving and gathering, forming pools, like in the crook of a tree or at the base of a leaf, filling slowly before dripping over the edge and continuing down into the soil. Wetlands and bogs form, areas so heavy with water it is impossible to move freely, animals can become trapped, and tourists might lose their wellington boots. Slowly, heaving together, the water lingers gentle and still, wool grass reaching out toward the sky. It waits patiently for an opening, for a crack on the surface of the land to appear, and then the water is suddenly flowing again, a gully over the grasses running toward a small valley and joining another stream.

Streams joining streams, into larger streams and rivers, before finally bursting out into a lake. Here the drops of water become indistinguishable from the rest of the lake. They might remain here for years or decades, moving around in the wind and currents, mixing and drifting, waiting without expectation or thought.

Then one day, it begins to feel a surge every so often, a pull toward a direction, but only occasionally, and then it stops. One day the drops of water reach an edge, a wall of stones and metal that it begins to gently bash against, exploring the gaps between the rocks, back and forth, in and out. Then, without warning, the water is pulled in a surge toward an opening in the wall. It falls, desperately seeking the lowest point once more. Racing through the valley, the water crashes into rocks which darken instantly in response to its wetness. This bare opening through the trees becomes river again, twisting and turning through the valley. Blending and crashing into pools, the fierce speed and enthusiasm begins to ease, surging and then easing and then slowing slowly, running gently from pool

to pool and finally into another lake. Here it waits once more, moved around by wind and currents, mixing and drifting, years pass.

When it eventually reaches the edge of this lake, a straight and flat wall, the surge is slighter, pulling the water to one side. Not on through the valley though, but into a small metal pipe, from where it is pushed a distance along the mountainside. Then, splitting into many pipes, it drops like a ride at a theme park straight down the sheer valley side. Down and down before smashing into metal flaps, spinning and crashing and splitting. It drops again into a new pipe and is soon back on the valley floor, joining the gentle flow past farms and houses, factories and bridges, kids playing, people sitting and contemplating. Weaving its way gently past another generation of valley dwellers and out into another vast lake.

After many lakes and walls and rivers and generations, much drifting and mixing, the water waits still for one final surge past one final wall. A quiet electric hum pulses through the still surface, where reflections of houses dance along the shore. After falling once more, it joins a slow-moving river, past more houses and schools, shops and factories like a crowd leaving a stadium after a game. Then, without much fuss, it fuses with another lake.

There are still many rivers and lakes to go before, after many years, those gentle specks of rain that touched my face will finally make their way out to sea.

PART ONE

INTRODUCTION

In this project, I have explored the phenomenon of Heritage, or alternatively explored *heritaging* as a phenomenon. Through a research journey situated within the World Heritage site of Rjukan-Notodden in Southern Norway, recognised for its contribution to Second Industrial Revolution.

The thesis is divided into two parts. The first prepares the ground for the enquiry, framing the project within a wider context and describing what has been done methodologically. The second consists of the empirical parts, which include a film, soundscapes, and descriptive and reflective writing.

In this first part, I begin here by outlining the motivation and goals that have driven the project and how it has developed, including the contributions I hope to make. I shall then discuss the structure of the thesis where (as shall become clear), although I follow a standard academic structure, my approach has opened for a method that develops open concepts in response to my experiences within the landscape. Such an approach leads to the constant generation of new questions and new ways of asking questions, as well as a relationship with theory that also remains open, where new theories and ideas become relevant along the way. This is an approach that sees methodology and theoretical perspectives as being open and drifting (Irwin, 2013; Pétursdóttir, 2019).

I briefly introduce the research site, where this project sits within the fields of heritage and sustainability research and methodologically within the so-called posthuman, new materialist and ecological turns. All of which will be explored in greater depth over the coming chapters. I then introduce three challenges I have identified as reoccurring threads throughout this thesis. The challenge of language raised by more-than-representational and sensory research methods, the challenge of

multiple perspectives that sustainability research demands and the challenge of movement, how we identify, understand, and communicate knowledge about the world within the constant flux and change of complex intra-relations.

Finally, I shall outline the research question for this project and introduce the philosophy and method of questioning I have adopted.

The initial motivation for this project stemmed from an interest in exploring methods for sustainability research and what it means to take such a perspective seriously. Like heritage, sustainability can be understood in terms of the processes that occur within landscapes, in-between humans and their surroundings, and across generations, and, as such, it is future-oriented, where both heritage and sustainability could be described as processes of becoming. Further, sustainability brings with it the need for a dialogical perspective that includes not only human interests and voices but also those of the more-than-human world. Such research, I will argue, requires methods which attempt to explore the more-than-representational qualities of encounters and how we might draw knowledge from, express, and understand them.

From my experiences of moving within former industrial landscapes, where my path of research has been formed through a variety of everyday encounters, it has become clear that the curated distinctions we so often make between the human and non-human, natural and cultural, tangible and intangible, or official and unofficial, really flow through one another and are inseparable. So, while the three central themes of heritage, sustainability and becoming (that I later term *forming*) could be loosely associated with the past, the future and the present, they are perhaps more usefully thought about as processes entangled together within landscapes and across multiple temporalities.

In terms of the contributions I seek to make, despite its focus on heritage as a phenomenon, this project is also a methodological experiment seeking to develop sensory and visual methods that open for a greater inclusion, or rather repositioning, of the landscape within which heritage(ing) processes occur. That said, within the fields of geography, archaeology, architecture and critical heritage studies, there are a

great many examples of research into heritage sites and objects from perspectives similar to those I am proposing (Bangstad & Pétursdóttir, 2021; DeSilvey, 2017b; Knudsen & Stage, 2015; Lorimer, 2005), so it is also my aim to contribute further examples toward these ongoing discussion. In addition, it is my hope that this project will be relevant within the wider context of what it means to research processes of change and becoming.

In chapter two, I explore the field of Heritage studies in greater depth. Locating this project in relation to current and historical notions of heritage and then framing my enquiry from the landscape perspective I have begun to describe. Here the complexities that arise from such a perspective problematise an understanding of heritage processes as something that is purely human-driven in the modern period.

Chapter three will introduce the concept of intra-play as an onto-methodology that has developed through my encounters within the heritage landscape, where these experiences have been read against relevant theories and philosophies. I say onto-methodology, as intra-play represents both a way of thinking about and imagining the world we encounter and a research philosophy – or – way of joining with the complex processes underway.

Chapter four will discuss the actual methods, as in what I have done in more concrete terms, drawing on artistic research practices, visual and sensory ethnography and phenomenology.

Part two comprises the empirical parts of the research process that take the form of film and sound productions, which seek to evoke more of the phenomenological and more-than-representational qualities from the encounters, and a text, which acts as a descriptive and reflective/*diffractive* writing of those various encounters. The text combines descriptions of my movements and encounters combined with images and analysis. Here I draw on qualities and features from within the experiential landscape that speak to the "renderings" that have developed. These renderings are metaphorical and open concepts (Irwin, 2008) that help to capture the sense I have

arrived at regarding what we have access to when doing research and the processes of heritaging that are underway.

After a summary, tying the various threads together, I shall conclude by considering the consequences and contributions of my findings and assessing the strengths and weaknesses of such an approach. Before in the spirit of this research approach, I discuss the questions, possibilities, and new threads this has opened for.

All photographs, video and sounds that form part of this thesis and project, are the work of and owned by the author, unless otherwise stated.

While this thesis is written in the form of a monography, it should be noted that parts of the thesis are reworked from two texts that were published as part of this project. A methodological article, ´A phenomenology of intra-play for sustainability research within heritage landscapes` (Richards & Haukeland, 2020) co-authored with Per Ingvar Haukeland, which forms part of the methodology and the basis of the section *four ways of intra-play* (with permission of the publishers: *Forskning og Forandring).*[3] And a book chapter, ´Forming paths within post-industrial landscapes` (Richards in: Svensson, Saltzman, & Sörlin, 2022) re-worked within the chapter *paths & trails* (With permission of the publishers: *White Horse Press*).[4]

Rjukan-Notodden World Heritage Site

One of the things I have had to consider is how much information to give about the site and how this will affect how the film and text are viewed and read. As I outlined in chapter zero, I was familiar with Notodden in many ways before beginning this project, but as is revealed, there were still hidden qualities and features I was unaware of, and Notodden was, in many ways, a different place than it was when I first

[3] Under creative commons license: https://creativecommons.org/licenses/by/4.0/

[4] Originally published open access, under: https://creativecommons.org/licenses/by/4.0/

conducted research here (before its UNESCO status). With the wider landscape though, and the town of Rjukan, my prior knowledge was limited, and despite knowing a lot more now, I am still not an expert on the history of the area in a traditional sense. Over the last four years, I have spent many weeks within the Rjukan-Notodden landscape, sometimes short stays and day trips, and then with four intensive weeklong emersions exploring phenomenologically and documenting those encounters with sound, video, and photography, including conversations and interviews with a range of people. I have visited in spring, summer, winter and autumn, however, due to the difficulty of spending a large amount of time and moving freely in the winter and the covid-19 restrictions in place for large parts of this project, the majority of the fieldwork was conducted in the autumn.

The knowledge I have gained has largely come from within the landscape phenomenologically and then, after the fact, reading into what this had opened for. Methodologically it was about finding a balance, where "prior knowledge may enrich the experience of forms and how they are encountered within the landscape, but too much may also prevent us from being there (in the Heideggerian sense of Dasein) and engaging spontaneously with the other forms we meet" (Richards & Haukeland, 2020), leading the research toward more planned and structured ways of meeting and experiencing the landscape.

Another thing to consider with regard to prior knowledge is it becomes necessarily a narrative, whether it be written as a list of dates and occasions or as a story or competing stories, an ordering of things occurs that shapes how we then come to think about and subsequently experience what we encounter. The problem with the narratives in Rjukan-Notodden is that they are multiple and contested (Birkeland, 2015), and that they are continually being reformed through the heritage processes underway (Johannessen, 2019).

What I write, and the film I make are also, of course, a narrative, even though the aim is to be less prescriptive. The film has been made in the tradition of non-narrative cinema, and the writing is intra-subjective (or co-formed) and somewhat fragmented. It is in a sense a story of a pathway and what this revealed, it does not aim to compete

with the other narratives, seeking a singular narrative, but add to them, and should be read together with these differing narratives and ways of knowing.

Therefore, in this section, I shall briefly orient the reader to the site, giving an overview and some information about the official narrative. I then introduce some of the other research that has been and is being conducted within the same area and how I feel my project fits with this.

The UNESCO World Heritage Convention was approved in 1972, proposing inter-governmental cooperation for the protection of cultural (article one) and natural (article two) heritage considered to be of outstanding universal values. The convention has today been ratified by 194 nations, with Norway joining in 1977.[5] Norway currently has eight world heritage sites, ranging from areas of natural beauty and scientific value, the Hanseatic port in Bergen, ancient rock art and the 17th-century mining town of Røros.[6] The Rjukan-Notodden Industrial Heritage Site is the latest to have been inscribed on the UNESCO World Heritage list in Norway in 2015, in recognition of its important contribution to the Second Industrial Revolution. It is listed as a cultural but not a natural heritage site.

Located within the Telemark region in southeastern Norway, it is a large and complex site that stretches from lake Møsvatn at the foot of the Hardangervidda plateau to lake Heddalsvatn further south. It is comprised of two company towns (Rjukan and Notodden) and interlinking waterways and railroads. There are a large number of "objects" that have been identified for preservation, including hydroelectric power plants, pipes, transmission lines, factories, transport systems and worker housing. Today there are several key attractions, including the Industrial Workers Museum at Vemork (just outside of Rjukan), Telemark gallery and museum near Tinfos in Notodden and industrial parks in both Rjukan and Notodden (both

[5] https://whc.unesco.org/en/conventiontext/ (retrieved 02.04.22)

[6] https://unesco.no/eng-child-page/world-heritage-in-norway/ (retrieved 02.04.22)

called Hydroparken). There are also train lines, with trains running between Notodden and the coastal city of Skien and, on special occasions, between Rjukan and Mæl on the edge of Lake Tinn, where boats used to bridge the gap. The remaining stretches of track are now closed.

The site follows the waterway and a buffer zone that includes the water catchment area from the often-steep mountainsides, as illustrated by the mapped view below. The site is registered at 389.3 square kilometres.[7]

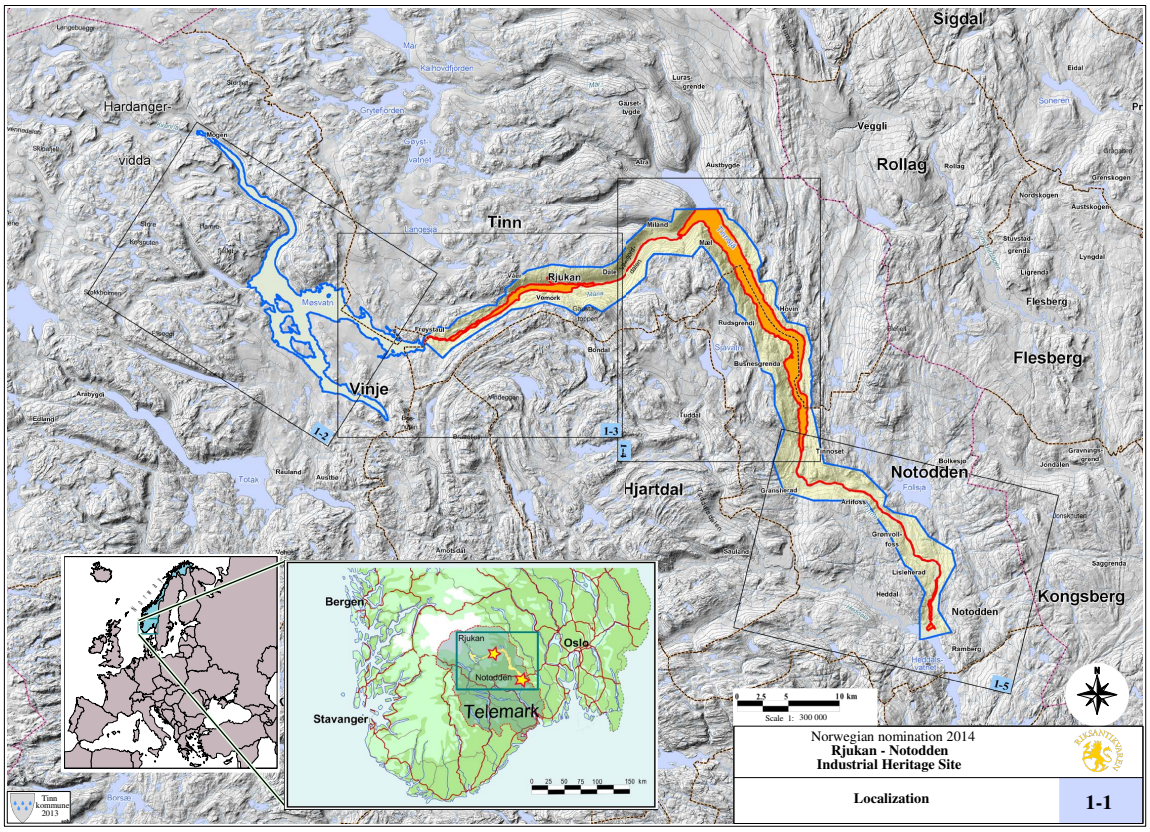


Figure 1 Rjukan-Notodden Industrial Heritage Site - Map of inscribed Property [8]

The area is known for the development of electricity from waterpower, achieved to facilitate the manufacturing of artificial nitrogen-based fertilizer, most often in

[7] https://ra.brage.unit.no/ra-xmlui/handle/11250/2470549 & https://whc.unesco.org/en/list/1486/ (retrieved 14.11.22)

[8] https://whc.unesco.org/en/list/1486/maps/ (retrieved 14.11.22)

reference to entrepreneurs Kristian Birkeland and Sam Eyde at the turn of the last century. It is said this was an important development at a time of famine that was contributing to mass migration from Europe to America. Notodden and Rjukan were purpose-built as company towns in order to attract and maintain a stable population and workforce. This included the building of worker housing, shops, churches, hotels and cinemas. Between the power station at Rjukan beginning operations in 1911 and 1920, the population of the town had grown from a few hundred farmers to around 8500 inhabitants. Notodden experienced a similar growth pattern during this period. However it had already become a central hub prior to this due to its geographic location (Birkeland, 2008, 2015).

More famously for many though, is the story of the by-product of the process of producing artificial fertilizer, a substance known as heavy water (O_3). It was sought by the Nazis during World War Two as, unbeknown to many, it was deemed important for producing an atomic bomb. After the invasion of Norway, the Nazis seized control of the factory at Vemork, after which several attempts to transport heavy water back to Germany had to be sabotaged, including the sinking of a passenger ferry that still rests at the bottom of Lake Tinn.

The most famous of these stories has been depicted in numerous films and tv series, including ´The Heroes of Telemark´ starring Kirk Douglas in 1965. It is the story of a group of Norwegian soldiers working with the allied forces to sabotage the factory (Sørensen, 2018). This story is not a part of the official heritage but has been immortalised in films and series and is, therefore, an important draw for tourists, where attractions include an interactive exhibition at Vemork Museum, an adventure trail called the saboteur route, and more recently the re-opening of the restored heavy water cellar destroyed during the raid.

After the war, due both to the economic conditions and the advent of new technologies that allowed for the electricity produced to be sent to coastal cities, both towns have faced massive population decline. By the end of the war, the population of Rjukan was around 6500, and continued to fall throughout the 1950s and 60s in

both towns (Birkeland, 2015, p. 168), with a population in Rjukan today of little over 3000 people.

With the end of the industrial period, many see the UNESCO listing as an opportunity to develop economically through tourism and to change the narrative that shapes regional identity from one of decline and loss to one of pride, innovation and rejuvenation, a process that is still very much underway today (Birkeland, 2015; Johannessen, 2019). [9]

There have been several research projects conducted within the Rjukan-Notodden site in recent years. Here I want to give a brief overview of this and then describe where I see a gap, and even a need, for the type of research I am proposing.

Inger Birkeland (2008, 2015, 2017) has considered the potential for a re-animation of Rjukan as a place, with new narratives and more sustainable relationships with the surrounding nature built on a "non-mechanistic view of nature". Birkeland points to the changing narrative tide, from a local identity of dependence and an industrial politics that has traditionally clashed with environmental concerns, toward a post-industrial period that might open for something new. As the wider society begins to re-evaluate our historical relation to the natural world, she speculates on the possibility of building a new identity around the meaning of water and "un-taming the waterfall".

Through immersive ethnographic work in Rjukan, Steffen Johannessen (2019) has explored the complex processes of identity construction that are unfolding after the implementation of world heritage status. Where after being initially applauded as a democratic inclusion of the voices of a fading working class, in many ways, these processes remain anchored in the bourgeois tastes and expectations of the heritage industry.

[9] https://whc.unesco.org/en/list/1486/ (retrieved 11.06.20)

Guro Nordby (2020) has taken an object-focused stance, considering the differential ways objects, people and landscapes are materialised within the Rjukan-Notodden site, with a focus on the trains and train lines that have been so central and meaningful – as technological and social objects – both historically and today.

Jens Christian Hansen (2002) researched the political and economic factors that have led to young people either staying, leaving and returning or moving away for good between 1979 and the early 2000s.

And Sesana, Gagnon, Bonazza, and Hughes (2020) have accessed the risks, vulnerabilities and preparedness, as well as the resources available for meeting future preservation challenges related to climate change - both top-down and bottom-up - including communication and cooperation between levels. The Notodden-Rjukan world heritage site was one of three comparative European case studies.

Helene Nynäs (2018) traced the production of a series of watercolour paintings depicting the transformation process from river to power station by the artist Theodor Kittelsen, commissioned by Norsk Hydro between 1907 and 1908. The paintings, which they hung at the company's villa in Notodden, combined tropes from Norwegian folk stories and myths to reframe the impact on the waterfall as part of an industrial fairy tale. The waterfall at Rjukan had been a popular destination for tourism during the 19th Century, and a hotel was built near to it, however with the building of damns and piping of the water to the power station at Vemork, tourism declined (Birkeland, 2008, p. 286).

More recently, I have crossed paths with other researchers engaged in projects within the same world heritage site. Audhild Lindheim Kennedy [10] is researching how the industrial stories from Rjukan and Notodden are implemented locally as part of the national cultural school bags program, aimed at providing equal access to arts and

[10] Audhild is a PhD-candidate working on a project entitiled ´Shaping Minds. An Anthropological Study of Children Learning about Rjukan-Notodden Industrial Heritage´. See also https://hifo.no/wp-content/uploads/2022/01/Historikeren-2_2021.pdf (retrieved 19.02.23)

culture throughout the country. Through site visits and historical re-enactments, the children engage sensorily with the past, enlivening it in the present. Kennedy considers the consequences and intentions of this with regard to how it is shaping identities and creating a sense of ownership toward the industrial past.

These examples show the range of interests and research approaches that have been applied within the Rjukan-Notodden world heritage site, relating to the historical and heritage process, the transformation of our relation to nature and the possibilities of the future. However, heritage processes, which some argue aim to shape identity through a constructed cultural memory by forming narratives and selecting objects for protection, are also processes of forgetting, or discarding others. This memory work underway within heritage landscapes is, therefore, necessarily a process of "pruning" and "forgetting" (Augé, 2004; DeSilvey, 2017b; Harrison, 2013; Olivier & Greenspan, 2011). As such, I argue the heritage of an area implicitly includes those parts, the processes they join with and what they continue becoming, as shall be discussed in the next chapter.

The Rjukan- Notodden site, I have discovered, offers a rich source of ruins and abandoned spaces formed of forgotten traces and paths, alternative stories, practices, and ways of engaging with the past. These tell a different story of industrial decline and point to other processes of remembering, where the human is often present in traces alone. Here we see the multiple temporalities of different forms at play, where the fallacy of the nature-culture divide is exposed, revealing instead a natural/cultural landscape of valued and forgotten traces in a continuous process of forming together.

My approach to this site should not be read in opposition to these or other forms of research in the field of heritage studies but as a compliment to this earlier research and their other ways of knowing, so that together they might reveal a fuller understanding.

Heritage, Sustainability & More-than-representational Methods

Heritage (which will be discussed at length in the next chapter) has traditionally been thought of as a human-centric and past-centric practice of late modernity, a form of "memory work" (L. Smith, 2006) that deals with the negotiation and formation of values, identities and meaning, primarily associated with material objects. It has been described variously as an inheritance (Johansson, 2015) of sites, objects and stories spanning all scales of space and time (Harrison, 2013). It can be tangible or intangible, natural or cultural, local and personal, national and global (Johansson, 2015), a value-laden tourism industry (Kirshenblatt-Gimblett, 2020), everything and anything to anyone (Harrison, 2013; Lowenthal, 2015), or there is "no such thing", only discourses of power (L. Smith, 2006).

However, when viewed alongside sustainability and ontologies of becoming, heritage is made active in the present and becomes future-oriented (Harrison, 2013, 2015), where value, identity, meaning, and knowledge about these are always being re-negotiated and re-formed between objects, experts, locals, and stories, within landscapes and across space and time. The heritage we speak about, as such, is not really bound by or confined to a particular place, but rather, I will suggest, echoes out across landscapes and societies in the form of economic, technological, and natural/cultural changes in collaboration with wider geologies, geographies, ecologies, and ways of being. The heritage of industry associated with Rjukan-Notodden can, as such, also be understood from within a much larger continuum, reaching back into deep time, forward speculatively into the future, as well as in the rocks, soil, and in how we live, move, and remember today in multiple and complex ways. Despite the relatively recent appearance of the word Heritage as a cultural, political, and economical tool, I shall propose that the process of "heritaging", if it is interesting here (in relation to sustainability and becoming), must surely be something that has always happened and should not, I will suggest, be limited to human-centric processes alone.

Sustainability is a contested and highly politicised term that has come to be used in many different contexts and to many different ends across all sectors since it came to prominence in the 1987 Brundtland report (Dessein, 2015; Soini & Birkeland, 2014), but at its fundament, it could be said to mean an ability to sustain, sustain/ability. From an ecological perspective this would mean the ability to sustain life (Weber, 2019), which, as we now know, means a diversity of life along with the material world that underpins this. A sustainability thinking that is solely focused on the needs and will of humans would miss the essential point that we are also bodies of matter, formed from a surrounding diversity of other forms of matter. Humans form within landscapes as a part of them, while also e/affecting the other forms that make up that space-time. From this understanding, sustainability is not an endpoint to be reached but rather something to be experienced through the ways we inhabit landscapes and how we think about and respond within our surroundings, in ways that allows for this co-habitation to continue (Richards & Haukeland, 2020).

As with heritage, I argue that even though the word sustainability has also appeared in the late modern period (brought on by new knowledge, ecological awareness and fear of crisis and the future), the ability to sustain within landscapes is a process of continual negotiation, an aesthetic dialogue between, not only humans but, the surfaces and qualities of anything and how it responds to and is changed by the surfaces and qualities they encounter. As I have already discussed in chapter zero, due to the broad and politicised associations the term sustainability has accumulated, in this thesis, I speak rather of the more-than-human (processes, entanglements, intra-plays) rather than sustainability.

Methodologically, my approach draws inspiration from two interconnected areas. Firstly, arts-based research and, specifically the work of Rita Irwin & Stephanie Springgay and their "non"-methodology of A/r/tography (Irwin, 2013; Springgay, Irwin, & Kind, 2005) as well as the concept of play that Christoph Menke (2013) describes as the "force of the artist". And secondly, new trends in social theory that

propose to go "beyond Latour".[11] Both of these areas draw on a range of theories and philosophies that support posthuman, new materialist, object-oriented, and ecological thinking, as well as phenomenological, sensory and artistic methods, from which a wild meadow of ideas and inspirational research approaches are now flourishing (Bangstad & Pétursdóttir, 2021; Knight, 2021; Manning, 2009; A. L. Tsing, et al. , 2020).

While my approach to research draws inspiration from many of these and the deeper strands of thought that underpin them, I am not following any of them as a methodological formula, and neither is that the intention of those authors and their experimental and open approaches. Rather, it is suggested the method should unfold and become clear through and in response to the process of doing research (Irwin, 2008).

What ties these various ideas and methods together is an emphasis on the more-than-human world (Abram, 1996) as an important and often silenced or forgotten contributor to how we plan, develop within, and think about our surroundings. As well as having values, depths, and potentials beyond those humans have access to directly or attempt to impose. Such concerns invite an approach to research that is more-than-representational, that is, approaches that explore the potential for using visual, artistic, and sensory methods for researching the qualities of a phenomenon that cannot be neatly formulated into concepts, stories, or facts. Research that, as Phillip Vannini describes, "continues to emphasise the fleeting, viscous, lively, embodied, material, more-than-human, precognitive, non-discursive dimensions of spatially and temporally complex lifeworlds." Such approaches require a creativity and openness that "does not represent but instead 'flirts' with reality", through methods that attempt to animate lifeworlds, where the research practice itself becomes "entangled in relations and objects, rather than studying their structures and symbolic

[11] Lifted from the title of a PhD course lecture I attended at University of Oslo in 2019

meanings" (Vannini, 2015, pp. 318-319). How we might do and express this will be explored over the coming chapters.

Finally, if we are to take seriously this more-than-human (similarly called a flat ontological) approach, a question that seems important to consider is what we will call the other constellations of matter we encounter, variously called things, animals, people, chairs, books, rice, stories, raindrops and so on and so forth.

There have been several propositions put forward from within the object-oriented ontology (OOO), new materialist and posthuman fields. But all tend to agree that a common way of speaking, where a single word or limited vocabulary is used to describe everything (at least at the outset), is important to avoid reinforcing an already established linguistic hierarchy, narrowing what something is, was or could become. There is the term objects that Graham Harman (2018) proposes, that can be compounded with other objects forming larger objects (such as the human body). Machines, is used by fellow OOOer Levi Bryant (2014), who finds objects too objecty, as does Ian Bogost (2012, 2016) who prefers units. Timothy Morton (2010) speaks of phenomena, as does Karen Barad (2003, 2007). Jane Bennet (2010) uses things, or thing power, but also vibrant matter and borrows actants from Bruno Latour (2005) when referring to non-human things that act non-the-less. Martin Heidegger used Zeug, which can be translated to stuff, the stuff of play and the stuff of work, or more popularly, equipment (Käufer & Chemero, 2015). Then Tim Ingold (2015) talks in terms of the lines "along which life is lived", where places are like knots formed of entangled lines.

It seems to me that no matter what word you choose, somebody will find trouble with it and associate or interpret it in a different way, linking it to a reference you had not come across. It would therefore seem most important that the word or words we use when describing the world are consistent and come from the experiences and imaginary of the writer and as such makes sense to them.

In this project, I have come to use forms as a way of speaking about all things. Where rather than a network or assemblage of different things or objects, I see the

world as a multiplicity of inseparable forms made from the same basic stuff. Forms that are always being formed in the process of forming other forms. It is then possible to talk about human forms, building forms, leaf forms, wind forms, dust forms without implying that they are fundamentally separate and by acknowledging that they are composed of many other forms which pass through them (cells, water, minerals, atoms, experiences, thoughts). And although some forms may seem more permanent than others, in that they exist along different temporalities (such as a rock compared to a dandelion), all forms are ultimately subject to the processes of existing in the world.

This relational sense of forms continually forming also links to the etymology of form, the Anglo-French *per-formir,* and the Greek *morphe*, [12] suggesting a per-formativity to the intra-play between forms, where how a form appears is altered phenomenologically, depending on the other forms they encounter. So, while I use forms to refer to all things, I, like object-oriented ontologists, recognise that all forms contain a multitude of hidden and inaccessible qualities. I, therefore, also speak of phenomena. In that it is the phenomena of forms, revealed through the encounter, that we have access to directly. The phenomenon is, as such, not the form itself nor what the observer projects onto the form, but instead, it is what co-forms and reveals itself through the encounter, which is always something new. I do not encounter the same world as you, and vice-versa, nor do I encounter the same world twice.

I find that this way of thinking allows for forms-in-themselves, albeit with hidden depths, while also keeping them in motion and relational as phenomena. Therefore, the heritage landscape being studied is considered an openly bounded area made up of a diversity of multi-temporal (human/more-than-human) forms that are together, continuously co-forming one another and the open future. Which includes, to state explicitly, myself as a researcher. When I refer to the landscape, as shall be discussed further later, I do not mean something out there that I am separated from. I am

[12] https://www.etymonline.com/word/perform & https://www.etymonline.com/word/form (retrieved: 02.10.21)

always referring to the constellation of moving and intra-playing forms I am experientially a part of.

Three challenges

Language

I have identified three challenges (or threads) that reoccur throughout this thesis that I need to maintain a critical awareness of. Their appearance is directly linked to the ontological and methodological positions that have formed and that I have taken in order to tackle the complex themes of heritage, sustainability and becoming. First, is the challenge of language, a central challenge of more-than-representational research, where the qualities of lived experience and encounters are not easily translated into understandable "factoids", as Morton (2010, p. 8) puts it. The truth of experience is often too strange, messy, complex, and fleeting for this. There is a (transcendental) "gap". More-than-representational approaches challenge the assumed "power" that the discursive structures of language are given in shaping and determining "our understanding of the world" (Barad, 2007, p. 133).

If experiences are sensory and more-than-representational, then how do we write about and form knowledge from such experiences in a way that does not reduce them into closed or limited representations?

In this project, I am exploring ways of using film, photography and sound recording to capture and express the more-than-representational qualities of my research encounters. These are artistic processes that produce images and sounds of images and sounds. However, as researchers, we must go one step further than the artistic presentation, and this inevitably involves returning to language. According to Irwin (2005), in a/r/tography, "art" represents the image and "graphy" the writing. These two elements of a/r/tographic research are independent yet not separate. There is rather a constant movement between the two, and through this movement,

they rub against one another, challenging, complimenting, extending, and contradicting all at the same time, resisting transparent representations of what is being studied.[13]

As this thesis progresses, I shall explore this challenge by using renderings (Irwin, 2008), metaphors (Harman, 2018; Springgay et al., 2005) and other modes of affective writing (Knudsen & Stage, 2015) as part of a process of writing that attempts to respond to and draw out a form of knowledge from the artistic and sensory presentations.

Perspectivism

The second is what Rosi Braidotti (2019a) calls perspectivism, which she describes as the opposite of universalism that avoids "falling back into relativism". Perspectivism is instead "grounded" in a location, within multiple "grounded perspectives", where the "knowing subject" is composed of, and thinks through, multiple intra-related, embedded, embodied - human and non-human – ("zoe/ geo/techno") perspectives.

This is the challenge sustainability thinking requires, that how we think, research, and understand, be grounded in this greater plurality of perspectives we are surrounded by and form together with.

In a playful thought experiment, for example, we cannot think like water, even though we are mostly water. The largest part of our physical form is water. Water is also a composition of other named forms (two hydrogen atoms and one oxygen atom). A single drop of water contains many billions of water molecules that are themselves identifiable forms that are part of a larger form in amongst an incalculable ocean form. Water takes on different qualities in response to external conditions, freezing and thawing, evaporating, floating, and falling. It can be clear or murky. It flows along rivers, gets pulled up into trees, passes through animals and drifts in the

[13] I sometimes use a *slash* (/) as Irwin does, not to separate, but to denote a complex intra-connection and processes implied between two words.

air. All of these are relational qualities, where the water cannot really be conceived of in isolation from other forms nor the other forms from it. A river is not water, and nor is water a river, just as a human is not water, nor water a human, yet neither can exist in isolation. So, where the linguistic distinction makes sense on a piece of paper, and we can of course recognise the qualities of water from an analytic or sensory perspective, from this ontological basis, we cannot think like water, but nor can we think without water. We are water, and we do think. Or as Maurice Merleau-Ponty would put it, the water is perceiving itself "in and through us" (Ingold, 2011, p. 12).

It is still not to say that the particles of water can think in and of themselves, but that we are no longer ontologically separate from water. With us, certain qualities of water are revealed, and ways of thinking, behaving, moving, and responding form. So, attending to and including water within our perspective and in how we shall be toward the world, is not a trick but of common interest.

Movement

The third challenge is that of movement, where if a landscape is understood as a complex whole always in flux, constantly moving, changing, and forming into something new (Ingold, 2011), then what is knowledge? How are knowledge and the "knowing subject" (researcher/visitor/inhabitant) to be understood? What is this changing/forming, and how are we to research it?

In my research, I attempt to open myself methodologically to the forces at play within the landscape, where everything is understood to be constantly moving and forming. As well as the - animals, plants and buildings, the water and wind, decay and preservation - the land, rock and strata, in their mysterious and stoic temporality, are also moving and forming alongside us. Bringing such scales to our attention can be problematic, as it is no longer about the past, but about the present we are within and the inevitability of the deep future that is forming alongside us. Where this present is not one thing, not stable facts, but "a thousand plateaus of temporal complexity" that we cannot see, control or escape (Braidotti, 2019a).

My own movements as a researcher are then seen to be formed between myself and the movements I join with. I become e/affected, that is, moved (touched) and moved (directed). As a researcher of and within movement, I become something else. My path and the sense (or understandings) I come to are not mine alone but formed along the way (Braidotti, 2019a; Ingold, 2011, 2015).

Research question

This project began by asking *how industry becomes heritage*? This question is complex and raised new questions from the perspectives I have begun to outline. Such as what heritage is, what industry is, what it means to ask what something is, and how something comes into being.

The phenomenon being studied is an experiential heritage landscape, and specifically, the processes underway. This thesis first seeks to establish an ontological basis for the study of such phenomena from a more-than-human/sustainability perspective that is rooted in experience. Then explore, methodologically, ways of moving, documenting, and expressing those experiences and draw out what they might mean.

I do not begin this enquiry by assuming to know what heritage is or how the traces of industry will be remembered. That itself is the enquiry, to develop a sense of this from within the experiential landscape that I seek to open myself attentively toward.

The project does not look for answers in the sense of a conclusion but is, in many ways, about clarifying what the questions are and how they also continue to form through the process. Through a mode of continually questioning, moving, attending, responding, rendering, and questioning again, I seek to explore the experiential industrial heritage landscape that forms with me.

WHAT IS HERITAGE? (Theory)

Asking what heritage is, can be problematic because of the ownership and power to define the *state-of-being* verb "is" implies, and this is a problem that shall be explored later in the chapter as I revisit the research question. First, I shall discuss heritage and its uses from different perspectives, outlining how the term is understood and used today, then locate this project and describe my initial position within the fields of critical heritage studies, memory studies, landscape studies and human geography.

The last decades have seen an explosion of heritage sites, approved either through international organisations such as UNESCO or at national and local levels, aimed at preserving valued traditions, stories, objects and areas for future generations. Heritage has often been referred to as a "phenomenon of late-modern societies" and the result of a "crisis of memory" (Harrison, 2013, p. 3) linked to the rate of change in the modern period, fears and anxieties brought on by this, along with technological advances and the increasing social, political, and environmental challenges we face. Heritage can also be understood within the frame of a growing middle class, with increased leisure time in post-industrial societies and a tourism industry built around heritage destinations (Harrison, 2013; Harvey, 2001; Kirshenblatt-Gimblett, 2020). That said, it should also be noted that examples from ancient civilisations also show processes of preservation and cultural memory work similar to what we see today (Olivier & Greenspan, 2011, p. 17).

In terms of defining heritage, it has been said that it seems there are as many definitions of heritage as there are people studying heritage (Harvey, 2001, p. 319) and that heritage could refer to anything and everything to everyone. Or alternatively, as Laurajane Smith (2006) argues, there is "no such thing as heritage" (p.13).

Official Heritage

Heritage, Smith argues, is discursively constructed through a nexus of power between technical and aesthetic "experts." Further that these self-appointed experts represent a particular class, worldview and aesthetic sensibility that maintains itself through shaped "practices, attitudes and behaviours" within the dominant heritage organisations. She uses Critical Discourse Analysis to examine and characterise, what she calls, an Authorised Heritage Discourse, which appeared at the end of the 19th Century. She says that such discourses can be understood from a late-modern western world view and specifically through the national, aesthetic sensibilities and values of the upper-middle class experience. And that, despite the inclusion of some alternative discourses and the UNESCO convention of 1972, the conservation ethic and notions of universal values based on Anglo-centric perspectives have become further institutionalised within heritage institutions and practices (pp. 11-43).

The authorised Heritage Discourse and its uses, Smith argues, undermines the ability of the present to alter meanings and values associated with heritage sites. Experts act as stewards of the past in a top-down structure that goes unchallenged and has historically excluded the voices, for example, of women, ethnic minority groups, indigenous communities, the working class and their histories, and has maintained an overt focus on material objects. Further, the well maintained, tidy and constructed nature of heritage sites has resulted in passive and distanced visitor engagements (p. 32).

This is an example of what I call *direct* critical heritage studies, as it is directly critical of the discourses that dominate the field of heritage and the heritage industry. While recognising the value of such approaches and their role in slowly reshaping attitudes and behaviours within organisations (such as the inclusion of intangible and indigenous notions of heritage and further democratisation of heritage processes

with, for example, the 2005 FARO convention),[14] this project is more suitably located within an approach I call *indirect* critical heritage studies. Examples of this include the work of Rodney Harrison, Caitlin DeSilvey, Tim Edensor, Anne Tsing and Þóra Pétursdóttir that, while transformative and critical, remain focused on what else is going on at the edges and fringes of this authorised heritage. Such an approach is better suited to the perspectives and approaches I have started to outline where, from a broader ontological position, the official and unofficial processes and the forgotten and valued traces are brought together and can co-exist within experiential landscapes.

Indirect Critical Heritage Studies

A term that is closely related to the modern heritage practices described by Smith is that of authenticity, and the question of what or when an authentic form is? This idea of authenticity, as something that can be formed into understandable narratives or constellations of cultural objects and frozen in time, is well illustrated in this extract from the UNESCO nomination dossier for the Rjukan-Notodden Site, which states that:

> Overall, the authenticity of the transport system is high. The whole transport section has been preserved, and its character and setting remain unchanged (with a few exceptions). The function is still decipherable both as a whole and for individual objects. Original elements relating to form and design and the use of materials are mostly well preserved, despite the transport system's dynamic character, where changes have been made according to Hydro's needs and improvements in railway technology. [15]

[14] https://www.coe.int/en/web/culture-and-heritage/faro-convention (retrieved 11.06.20)

[15] https://whc.unesco.org/uploads/nominations/1486.pdf (p. 317) (retrieved 11.06.20)

Such an approach comes from an understanding of authenticity that attempts to preserve a place, and not just a singular form but large complex and interconnected aspects across a vast landscape. Doreen Massey (1995) argued, as with forms, places are not static, but in process and there are no boundaries. It is rather more "useful to think of places, not as areas on maps, but as constantly shifting articulations of social relations through time; and to think of particular attempts to characterise them as attempts to define, and claim coherence and a particular meaning for, specific envelopes of space-time" (p. 188). She uses the example of coffee, that in France is considered, along with the café, to be a part of French heritage and identity, despite the fact that neither originated in France but were rather the result of international trade and movement. Coffee is considered authentically French, "but Kentucky Fried Chicken is not" (184).

In dealing with Heritage, (and I specifically refer now to Industrial Heritage), there seem to be two prevailing trends that are both motivated by their economic prospects. First, the replacement and redevelopment of post-industrial sites into new commercial areas, and second, the preservation of something based on a point in history deemed authentic and its associated, marketable narrative (Oevermann & Mieg, 2015, pp. 3-10; Schrumpf, Birkeland, & Johannessen, 2019). The first erases the traces we leave behind us, and the other attempts to temporally suspend those traces so that we may carry them with us as precious otherworldly objects, like Gollum with his ring. [16] And as with Gollum, over time, these precious, selected, suspensions of the past (and their given values) become a burden that can drag us from our own path through time and into its own suspended reality. Rather than creating our own aesthetic traces and values with the world, we begin to follow, to desire what they desire, value what they value and share in their aesthetic sensibilities and movements.

It has been suggested that an alternative can perhaps be found, after a place loses its economic function and before it is allocated a new one, with, for example, "curated

[16] Reference to Lord of the Rings, J. R. R. Tolkien

decay" (DeSilvey, 2017b) or "industrinatur" (Bangstad & Pétursdóttir, 2021). There we can follow the traces made not by planned action, but by the intra-play between nature, humans and the other forms making up the landscape, without any predetermined hierarchical distinctions. Tim Edensor, for example, approaches industrial ruins (from Henri Lefebvre´s "multiple readings of the city") as a plurality of ways of knowing. Where ruins are seen as a space for challenging and deconstructing the city. The dereliction of ruins, he says, is seen as a sign of waste, symbolic to politicians and entrepreneurs of diminishing prospects evoking fears of an uncertain future for the established regime (Edensor, 2005, pp. 4-8; Mould, Datta, & Odendaal, 2019).

The aesthetics of industrial ruins often evokes a "gothic" sensibility in abandoned areas, where we are confronted with "vicarious pleasures and fears, our vulnerability and mortality are exposed". Edensor instead takes a more positive outlook of ruins than the dominant dystopianism, seeing the "vitality, seething possibilities and manifold forms of life". Such places, he says, challenge the "myth of progress" and questions trends toward the economising of place, instead providing visions for how things could be differently imagined (Edensor, 2005, pp. 166-167). The gothic aesthetic can then be seen to epitomise a transgression and the collapse of boundaries, representing a part of the multiplicity of spaces found around a city, behind the preferred glossy image of progress. Such spaces offer a niche of ecological richness, where the boundaries between rural and urban blur. They offer space for "unsupervised play" where the body is liberated to engage in "sensuous interaction with the materiality of the city". In such "alternative playgrounds," he finds a freedom from the constraints and surveillance of ordinary life, "spaces of play" where youth and other fringe and subcultural groups can engage in activities outside of that which is "normally" allowed (Edensor, 2005, pp. 10-14).

Edensor views the aesthetic of industrial ruins not with a melancholic sense of foreboding, like the gothic, but rather more optimistically as "sites in which the becoming of new forms, orderings and aesthetics can emerge". While ruins embody a "physical remembering" of the past, they also "gesture towards the present and

future as temporal frames" that can be read as both "utopian and dystopian". They give "lie to those myths of endless progress" at the heart of neoliberalism, where new becomes old in cycles of creative destruction. Such places highlight the changing, fluid nature of the material world and their correlation to economic usefulness, as well as another aesthetic. Ruins offer sensual, corporeal experiences outside of the normal "consumer-oriented" experience, fostering an openness to difference by providing "alternative modes of moving through the city and ways of encountering otherness which involves dialogue, creativity and improvisation." They provide "different ways of remembering the past" from the commodified, mediated memories of the heritage industry. Such spaces suggest a knowledge of the past just beyond our grasp, requiring "us to fill in the blanks" (Edensor, 2005, pp. 15 & 165-171).

Caitlin DeSilvey (2006) asks if it is "possible to adopt an interpretive approach in which entropic processes of decomposition and decay, though implicated in the destruction of cultural memory traces on one register, contribute to the recovery of memory on another register… allowing other-than-human agencies to participate in the telling of stories about particular places." What Rodney Harrison calls "connectivity ethics", and Ioannis Poulios calls "living heritage," an alternative to the preservation instinct that acknowledges the rights of more-than-human forms as well (2017a, pp. 184-185). Harrison´s work draws on studies of indigenous cultures as well as theoretically from Latour in forming what he calls a "dialogical concept of heritage" (or connectivity ontology) which broadens the scope of actants it calls on to "influence the whole" (Harrison, 2013, pp. 16-19).

By engaging in the processes of entropy, DeSilvey (2017b) says, we can enter the web of relations we are embedded. While she admits that, for now, such a practice is likely to exist at the edges of dominant preservation practices in heritage management, she sees an *untapped* potential for "entropic heritage" where:

> Instead of asking the artefact to speak to a singular (human) past, such a method works with an ecology of memory – things decay and disappear, reform and regenerate, shift back and forth between different states, and always teeter on the edge of intelligibility.

> Remembrance comes into its own as a balancing act, an 'art of transience' which salvages meaning from waste things and reveals the complexity of our entangled material memories (DeSilvey, 2006, p. 336).

In my approach to indirect critical heritage, I use heritage as Harrison (2013) does, as a verb, heritaging, and extend it to include these wider processes at play within a landscape, something captured by terms such as landscaping (Howard et al., 2020; Krogh, 1995) or commoning (Bollier, 2014), where the land (or commons) is also made active as a verb.

The commons refer to both the natural environment that sustains life and the cultural codes, systems and practices by which communities have maintained within environments collectively over time prior to their enclosure (Bollier, 2014; Bowers, 2006). As such, "there is no commons without commoning" (Peter Linebaugh in Bollier, 2014, p. 19), as there is no heritage without *heritaging*. This suggests that heritage landscapes can be understood as a commons that should be engaged with more freely and dialogically.

It is, however, important to distinguish between two contrasting notions of freedom. Rather than the notion of being *free from*, which has been prevalent in post-enlightenment Western thinking, where the mind and the will are deemed separate and superior to the material/body world, the commons perspective proposes a *freedom within*. This notion of freedom supposes an intra-relationality between our rational will (mind) and material situatedness (body), where our will is formed within the world, much as Spinoza proposed (Braidotti, 2019a; Deleuze, 1988), where your ability to act is co-formed within the greater *body-mind* (Haukeland & Næss, 2008, p. 120). It is a freedom to act and start something new from where you are situated, but in ways that relinquish control of what is forming across the broader temporal space-time of a landscape you are within.

This situates the idea of heritaging within a wider meshwork of overlapping processes, many of which have little and sometimes nothing to do with humans, nor humans having influence over them, but they, conversely, exert great influence over our ways of moving, thinking and acting. From this perspective, heritaging is not only

what we control, represent or monetise, but what repeats, returns or fades from our former actions and traces over time, often unwittingly and surprisingly, like nuclear waste (Harrison in: Bangstad & Pétursdóttir, 2021), rare mushrooms (A. L. Tsing, 2015), forgotten cave art (Nomade et al., 2016) or driftwood returning to shore (Pétursdóttir, 2019), many of which will likely outlast our official representations of heritage (Bangstad & Pétursdóttir, 2021, p. 31). Then there are *plastiglomerates,* new rocks composed of plastic preserved by blending together with sand and sediment (Cresswell, 2020). And the recent discovery of widespread "forever chemicals", largely from the industrial period, that do not break down in the environment or the human body. [17]

Such examples illustrate what Harman (2018) means by the enduring potential for all forms ("objects") to become central and vital again within a new space-time, posing the question of whether it is really us who decides what lasts and how we will be remembered.

Memory

Although I did not set out to study the site in question from the perspective of memory specifically, as my approach has not been led by theoretical concepts, the presence and centrality of memory became clear within the experiential landscape. Further, the emergence of memory through the phenomenological approach I have taken has aided the forming of a sense of the heritaging landscape that goes beyond my own individual experience, in that it is the traces of diverse and temporally differentiated forms of remembering encountered that have shaped my movements and experiences, and the meanings I have tentatively drawn. This revealed some of

[17] From: https://foreverpollution.eu/ (retrieved 23.02.23)

the wider modes of heritaging underway, even though they may have been forgotten or "pruned" through the political and economic nexus of "official" heritage practices.

That said, I was aware of the growing importance of memory within the field of heritage, which is often referred to as "memory work" (L. Smith, 2006, p. 59), and phenomenologically how memories and emotions can be aroused through sensory encounters, a smell or a colour that may trigger and co-form a memory for example.

Here I want to outline briefly how I relate this project to the field of memory studies, where I depart from this, and then introduce some of the work that has been done on memory more recently from within the fields of heritage and landscape studies, as well as archaeology, that will become relevant later.

After lying dormant for most of the 20th Century, Maurice Halbwachs's (1992) writings on cultural and collective memory from the mid 1920s became a foundational text of a multi and trans-disciplinary interest in memory that emerged through the 1980s and 90s (Erll, Nünning, & Young, 2008, pp. 8-10; L. Smith, 2006, p. 57; Tamm, 2013). The result was a range of varying and competing theoretical and methodological approaches, most notably within psychology, neuroscience, cultural and social studies, history, and phenomenology.

At the heart of these variations was the distinction between the competing notions of memory being a purely cognitive and neurological phenomenon that occurs inside the brain and more distributive forms of memory spanning body, mind, society, and the world. In the latter, memory is seen neither to reside in objects nor in the brain alone but manifests in-between (Erll et al., 2008, p. 5; Sutton, 1998), through what I am calling an intra-play between the body-mind and the world in a way that is never fully stable or clear, as part of what has been referred to as memory ecologies (Bangstad & Pétursdóttir, 2021; DeSilvey, 2017b).

Some of the most influential early works on distributive memory during this early period, particularly in cultural and social studies that I find relevant in relation to heritage, were those of Jan and Aleida Assmann. Central to their thesis was the

concept of collective memory and the distinction made between communicative and cultural modes of remembering (Assmann & Czaplicka, 1995; Erll et al., 2008; Tamm, 2013).

Communicative memory, according to Assmann (1995, pp. 127-133) is part of a common oral history shared by a group that is maintained through common experiences and references, for example, through gossip and inside jokes. It is informal and has a limited temporal horizon of no more than a century. Cultural memory, on the other hand, develops a fixed horizon by concretising common identities around symbolic and formal objects such as museums, monuments, and texts. The communicated meaning these transmit become crystallised through traditions and practices that instruct and control how people behave and interact with those memories and therefore the meanings that form. These practices act as a "mnemonic energy" that may be carried "across millenia" as part of the "culturally institutionalised heritage of a society" (pp. 129-130). The function of cultural memory, as such, is to maintain a "normative self-image of the group". Despite this, Assmann argues, such forms of cultural memory are subject to changes and variation over time through their performance, through which they are continually re-invented and re-made in the present. As such, the histories that are told and the memories that are enlivened say "as much about the constitution and tendencies of (the) society" who perform them as they do about the past (pp. 131-133). It should be noted again that such processes of remembering are necessarily also processes of forgetting, as Rodney Harrison (2013) points out, in that we "prune" and cultivate what is deemed valuable. He argues for the need to delist and let be forms of cultural remembering (heritage sites) that have lost their relevance and value in the present, to avoid a "crisis of accumulation" (p.166).

The distinction made by Assmann (1995), where "communicative memory is characterised by its proximity to the everyday," and "cultural memory is characterized by its distance from the everyday" (p. 129), seems important with regards to this project and the emphasis on a flat ontological outlook. It is not that I am trying to ignore the more structured "normative" forms of remembering that are organised as

part of a cultural landscape, but rather that I am seeking to approach them in a different way, drawing them into the more-than-human, even though this makes them less distinct. It makes sense that a study of heritage as cultural memory centres around politics and power structures, but this is not my focus. My phenomenological approach is interested in exploring the phenomenon of heritage from a wider position, where such forces are viewed merely as one of many varying forces and processes that are intra-playing in the present.

My focus is on what the traces of industry are becoming, but by not focusing directly on the practices that aim at fixing cultural memory, I suggest, this has opened for what a heritage built around communicative forms of remembering today might look like, albeit only as suggested by the traces of contemporary movement and more-than-human processes I encounter. A question I will come back to at the end.

In addition to the change of perspective more-than-human ontologies demand, I should also mention the changes brought about through technological developments, where it has been suggested the notion of cultural memory should now be considered as a "transcultural" or "cosmopolitan memory" driven by new digital technologies and globalisation. Where our relationship to the past and to place are rapidly evolving, blurring the more defined and controllable borders that had existed between social and cultural groups geographically (Bond, Craps, & Vermeulen, 2017). And, as from a posthuman perspective, technology is included as a part of the more-them-human (Braidotti, 2019a; Haraway, 1991).

Within the authorised heritage discourse, Laurajane Smith (2006, pp. 57-66) suggests that the concept of memory has largely been greeted with a fleeting interest, in part due to the discomfort brought about by the emphasis on forgetting that accompanies remembering. Forgetting suggests an incompleteness and selectiveness at the heart of the official narratives and, as such, the identities that form, challenging their authority.

More recently, however, memory has become a central topic of interest related to a number of heritage concerns. For example, related to sites and stories of

remembrance from the Second World War and specifically the Holocaust, where there the communicative memories are now fading, and in considering how new technologies and forms of media can be used to store memories and what this does (Neta, 2021; Schultz, 2021), and, as mentioned, an interest in the hidden potentials of forgotten traces and voices and what they are becoming as part of a more-than-human remembering (Bangstad & Pétursdóttir, 2021).

Such an interest draws in wider forms such as soil, rocks, and water, along with unofficial everyday movements and uses, as active agents co-forming what and how things are remembered over time. This is more akin to an archaeological memory, as described by Laurent Olivier (2011), where more-than-human processes and materials are seen as active in shaping how things changed over time and, subsequently how they are remembered.

Olivier outlines the shifts that have occurred and the evolving nature of our relationship with memory and the past, how we have thought about it and how we have researched and attempted to contain and define it. Where an understanding of history as the knowable past, an ordered understanding that provided a "mythical basis for royal authority", became complicated by the struggles and disharmony the past continued to cause in the present, particularly during the 18th Century, relocating the past in the present. This led to an explosion of disciplines and ways of relating to the past, including natural history and human psychology, that "could not be synthesized". Humans became decentralised, "no longer the lone and necessary source of events he experienced" (pp. 87-88).

Throughout the 19th Century, he argues, attempts were made to normalise historical time and re-centre the human experience and development historically, based on ideological assumptions. That the past is fundamentally knowable, understandable and can be represented accurately due to a common nature of man throughout time, and that time was unidirectional, linear, and causal. However, as more and more was revealed about the past, a "hole" opened up (in the form of psychoanalytics and evolution), through which these assumptions "slipped through"

(pp. 89-92), revealing the past to be a "foreign country" (Lowenthal, 2015) only accessible through the lens of the present.

These problematic revelations were, he says, co-opted so as not to undermine "the view held that man was the lone agent of history" (Olivier & Greenspan, 2011, p. 92). However, this human-centric, linear view of time and the past is "hollow" of meaning, as it strips the material traces of the past from the processes through which they were being remembered, that is, by refusing to see them as "memory media" (Bangstad in: 2021, p. 239) in their own right. Such media do not reveal memories of the past but are rather brought back into the present where meaning and memories are re-formed. Such an approach re-locates artefacts from the past into an ever-evolving present, a "nowness", where by their meaning and knowledge of them are constantly subject to change and may then be forgotten once more (Olivier & Greenspan, 2011, pp. 95-97). What he is proposing is an approach to understanding the past by attending to the present, which is itself formed from the layers of the past and through which the past appears as new forms. It is the processes of the past becoming the future that we have access to, and it is an attentiveness to this, he suggests, that is perhaps of more value to the future (Olivier, 2021; 2011).

I have found Olivier's ideas very interesting in relation to my experiences, encounters and reflections, especially in relation to which memory media we turn to as we attempt to form our understandings and avoid a "material elitism" that prioritises official, narrative representations of the past (Olsen, 2021, pp. 7-8).

At times my approach can be viewed as archaeological in this vein, with, for example, how I have often found myself exploring and seeking traces within the landscape, requiring a process of imagining how forms might have changed and moved over time in relation to the surrounding forms and forces, as well as how repetitions of movements over time continual reform "kinetic memory" traces within the landscape (DeSilvey, 2010). It is this notion of a more-than-human memory that has become central within this project, as the title denotes, through an attentiveness

to how the past is becoming with(in) the present. These themes shall be explored in further detail, where they becomes relevant throughout the thesis.

Heritage as a landscape

Landscape is another contested concept that has been used and understood in a variety of ways across a range of fields and can, as such, be considered trans-disciplinary (Howard et al., 2020). The field of landscape studies relates closely to several of the key elements within this project, including phenomenology, heritage and identity, memory studies and the visual arts. Throughout this thesis, I have variously referred to the area I am studying as the landscape, or experiential landscape, and the heritage landscape. Here, I want to outline some of the background within which the term landscape is entangled and then position how I am using it in relation to my onto/methodology and the field of heritage.

According to the European Landscape Convention, a landscape means "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors". To protect a landscape, it states, means "actions to conserve and maintain the significant or characteristic features of a landscape, justified by its heritage value derived from its natural configuration and/or from human activity" (Council of Europe, 2000, pp. 9-10). There is a conflict in this understanding of the landscape, between a landscape as experienced by people, always in flux, and the quest to conserve or preserve certain characteristic features of the landscape, such as a building or a story in a sort of stasis. There is also a distinction here between cultural landscapes bound to universal human rights or the equally alienating notion of wilderness (Howard et al., 2020, p. 11).

Amongst the themes that landscape studies draws in, including architecture, planning, social rights and justice, and cultural heritage, there has also been a turn in recent years (within both landscape studies and cultural geography) toward more

embodied, material, and affective research concerned with the "everyday life" and the more-than-human processes underway (Anderson, 2010; Howard et al., 2020). Such approaches suggest a diving into an experiential landscape, not studied as something out there to be understood but rather something we are viscerally entangled. The phenomenological method I discuss in the coming chapters can be viewed as an example of these emerging trends, seeking other ways of knowing. Such approaches also invite different ontologies, where, as with heritage, there has been a shift from the term landscape to speaking of "landscaping", as in an unfolding entanglement seeking to move beyond visual or discursive representations toward "knowing the landscape ´as a body", where the distinctions between "seen" and "seer" become blurred (Howard et al., 2020, pp. 95-96).

This has, however, been met with criticisms, anxieties, and concerns within various academic disciplines. These specifically relate to a concern that such forms of research risk leaving the political and economic dimensions of cultural landscapes "in the background", as well as a "seeming lack of attention to the historicity", then in addition, there is the accusation of romanticism that in some cases is tantamount to a dismissive name calling (p.132).

According to John Wylie (2020), phenomenology and landscape share a common history of emerging during the "romantic movements in art, literature, music, science and philosophy" during the eighteenth and nineteenth centuries (p.128), and it is this that critics point loosely to when referring to such research as romanticised. This, however, I suggest, is both misguided and misleading of more recent phenomenological methods and certainly of the more-than-human or new materialist project in general.

In my approach, as I have and shall continue to emphasise, I do not deny that there are gaps or that some things remain in the background, but merely suggest this is always the case, that research of complex entanglements is necessarily partial. Further, that forms of research that emphasise power and politics as their central interest (of which there is no shortage), equally leave the embodied and more-than-

representational qualities of the lived landscape in the background. My hope is that my research approach is read not as a challenge or critique of other forms of research, but rather as a different approach that can be seen as complementary *to* rather than in opposition *of*. These aspects of power, politics and economics do exist in my research, but are found in how they impact and co-form the movement of bodies and, as such, the experiences and understandings gained within the landscape.

One of the common associations that is often implicit in the use of the term "romantic" as a critique relates to landscape art and the associated early tourism, where pristine, wild landscapes were sought out and observed from a viewpoint, establishing a sense of distance between the landscape as an object and the viewer. From a more-than-human or phenomenological ontology, such an understanding of a landscape couldn´t be more different, where the landscape is instead understood as something you explore sensorily as a part of it (Barrett & Ko, 2009; Ch 10: Howard et al., 2020). From such a perspective, to paraphrase Latour, it could be said that there has never been a landscape, in the sense of an objective, distanced and romanticised viewpoint.

A landscape, as I mean it here, is a continually moving and changing complex meshwork of countless forms and infinite potentiality that I am joining with. The landscape is not over there, it is not in front of me, it surrounds me, it is behind me, beside me, beneath me, above me and passing through me. It crosses spatial and temporal scales, many of which are beyond my sensory grasp. I do not use the term landscape to provoke, but because it is the term that makes sense to what I wish to understand and have experienced.

I could have used site, but this, for me, implies the artificial boundaries of the official heritage and an itinerary of verified routes and objects that I do not want to limit my focus to. I could have used area, but this brings up the image of a bird's eye view, a photo taken from a low-flying plane and a red line drawn with a sharpy. I could also have used land, but I found (with Tim Ingold (1993)) this is often easily reduced to soil or ground, typically "non-human" forms that appear fixed. It can also infer ownership and could be seen to exclude those forms which move through it,

seeing them as external or illegal, and I am not seeking to exclude or include nature or culture, but rather trying to understand them together. When I speak of the heritage landscape then, it is to emphasise the inclusion of all the forms and processes underway, regardless of them being regularly divided up into categories I find artificial.

In his highly influential essay, 'The Temporality of the Landscape', Ingold (1993) seeks to move beyond the opposing ideas of what he calls the "naturalistic" view, where the landscape is seen as an "external backdrop to human activities", and the "culturalist" view, where every landscape is considered a "particular cognitive or symbolic ordering of space". He proposes instead a "dwelling perspective" (which he later terms "inhabitation" (Ingold, 2013)) where the landscape is composed of the processes of formation that have occurred there before. It can be viewed as "a story" accessed through an "education of attention" (Ingold, 1993, pp. 152-153), much as Olivier suggests.

This perspective involves not a separation but an unbounded co-forming between the so-called human and non-human, between nature and culture, or body and mind. "Through living in it", Ingold says, "the landscape becomes a part of us, just as we are a part of it… each component enfolds within its essence the totality of its relations with each and every other" (1993, p. 154). This multiplicity of forms are "generated and sustained in and through the processual unfolding of a total field of relations that cuts across the emergent interface between organism and environment" (Ingold, 2016, pp. 156-157). This unfolding does not result in a final form that is fixed but is a continual process of becoming.

To inhabit a landscape, either as a visitor or a local, is to become a part of that which co-forms it. We attend and respond to other forms in the landscape as co-inhabitants, if only for a moment. The seeming permanence of a landscape is only a matter of the multiple relations to time exhibited by various differing forms. The landform, the river or the deer all exist within a multitude of overlapping temporalities. If seen as a time-lapse over thousands of years, as Ingold describes, the

landscape, as with the daily intra-play of forms, would also be seen to exist in a movement through time (pp. 161-4). And a visitor that inhabits a landscape only for a short time still engages with this in space-time.

As I have said, when I use the term Landscape, it does not refer to the romantic idea of a landscape as something out there to be viewed that we might find objectively beautiful or spiritually calming, nor a stable image we can capture and understand from a distance. It is instead something where, if we were to follow a line from any point we see back to ourselves, we find ourselves already embedded within (Abram, 1996; Howard et al., 2020; Ingold, 1993), and equally, what we smell, hear or taste. We are no longer looking at the landscape over there, but down around our feet. To quote Karen Barad on her agential realist account of research, "we are not outside observers of the world. Neither are we simply located in particular places in the world; rather, we are part of the world in its ongoing intra-activity… we are a part of that nature we seek to understand" (Barad, 2007, p. 184).

Then, as we encounter something, it is always already encountering other forms and is on the way to forming into something else. Decaying, rusting, growing, dripping, freezing, falling, preserving, telling stories, climbing, sitting almost still, playing dead. Through this encountering of encountering, we too are changed, forming new thoughts, emotions, and movements. We come away different than we were, even if it is not obvious at the time. Through this, the landscape becomes what Timothy Morton calls "weird". There are all kinds of things going on that don´t involve us, and we are decentred. What we encounter cannot be understood simply by maintaining a view over something, nor by cracking it open with our scientific "hammer", but through the experience of encountering (Morton, 2010, pp. 24-29) "the creative tension of self and world" through which the landscape appears (Howard et al., 2020, p. 136).

In a recent publication, ´Pathways: Exploring the Routes of a Movement Heritage´, Svensson et al. (2022) introduce the idea of a movement heritage from multiple

perspectives. By speaking of movement heritage instead of, say, walking heritage, they are encouraging the inclusion of the more-than-human forms that make up a particular landscape. Where our movements and the paths and forms they help form are seen to be part of a "co-dependency" (p.32) where both our movements and the paths are continually shaping and re-shaping one another and, as such, the forms of remembering this opens and closes for. This, linked to the previous section, suggests what we encounter is a remembering landscape.

From the experiential heritage landscape perspective I am suggesting, movement includes walking and other ways of moving without being about human movement exclusively. It rather implies the intra-relational quality of human movement within a larger moving whole, opening for an awareness of the multitude of interwoven forces at play, the "active set of relations that compose a space-time" (Springgay & Truman, 2018). Here the landscape itself, as Ingold described, is seen to be moving across a vast array of different yet overlapping temporalities. This way of thinking about and engaging with landscapes is what I have come to call "intra-play" (Richards & Haukeland, 2020). We do not move in a vacuum, isolated from or unaffected by our surroundings. I propose that we are rather moved by the landscape (both affectively and performatively) as we move through it and, in turn, move it.

Is/does/is/becoming

With this input, establishing the idea of the heritage landscape as a constellation of complex processes and differential forms of remembering underway across scales, I would like to revisit the process of questioning this project takes.

This project has a temporal-orientedness to it, and as such, questions both what it is we are studying and then how we ask questions about such phenomena. The initial question of how industry becomes heritage, opened first for the questions of what heritage is, what industry is and how something comes into being. Regarding the first two questions, I found the use of *is* problematic, in that it often implies a

defining and determining of something to someone and can infer ownership. It easily becomes human-centric and suggests instrumental value, what is it to me (or them) within a particular culture and a particular time.

Asking the question of what something is, implies and requires a chipping away (so to speak) at the "object" at hand to fashion an is - a defined and determined labelling of - that makes that form something other than and apart from us. To ask and answer a question in this way is to shape an essence of that form, as if it were a rock that you, through a process of chipping and polishing, sculpture into something edible that you can understand, sweeping away all the dust and rubble left over and ignoring all the other infinite forms and shapes that rock could have taken. With heritage we can do this both physically, in the way that we reconstruct, preserve, reuse, and move amongst traces from the past, but more essentially, it is in how we sculpt their meanings and values through stories and practices.

We could instead ask, as Bruno Latour (2005) might, what heritage does? What does it do with us in a particular space-time? By replacing the word *is* with *do*, we replace (but do not exclude) the urge to understand forms through our mental faculties (or presumptive concepts) alone with a curiosity to describe it from different perspectives. The further distinction here of excluding (or expanding) the *we,* is necessary in order to replace an overtly anthropocentric concern with it. Latour sought to include the non-human as a part of the social network, as *actants* actively influencing what is happening. By changing *is* to *do* we create an expanded *we* that includes the more-than-human as active co-creators of a network. But here, there is still an assumed isness, something definable or reducible we have access to.

Another reason for removing the anthropocentrism from the word "we" is that this project is concerned with what heritage does beyond the world of human actions and concerns alone. How does heritage work on, and how is heritage worked on by, for example, natural processes?

While I remain open to the authorised heritage processes I encounter, such as that of UNESCO and local public-private actors, these are viewed as inherently intentional and sculpturing of heritage, and there has already been much written about

this (Anheier & Isar, 2011; Birkeland, 2017; Harrison, 2013; Kirshenblatt-Gimblett, 2020; L. Smith, 2006, 2021). While I do not ignore these, I prefer to allow them to appear within the landscape rather than be drawn into a critical analysis of these processes, which is beyond the scope and interest of this project. The focus here falls equally on the dust and rubble, that is, the multitude of hidden possibilities discarded, ignored, or yet to be revealed by these processes.

Object-oriented thinkers (Bogost, 2012, 2016; Harman, 2018; Morton, 2013) have taken Latour's ideas, particularly that of a flat ontological approach between human and non-human forms but returned to the question of is. Rather than remaining focused on what a form does, that is, its observable interactions with other forms, they are focused on what Kant called "noumena", the thing-in-itself that we do not have direct access to (Harman, 2018, pp. 66-69).

According to Harman, where Latour "loses sight" of the difference between what a thing is-in-itself (where the form remains in a vacuum) and what it does (Harman, 2018, p. 109), an object-oriented approach is interested in the potential of a form beyond what is observable, where certain qualities always remain hidden and therefore the possibility for it to become something other or more than what it does in a particular network of relations is always present, and in theory "infinite". This brings us back to the question of *is* again, but in a new way, asking not what heritage is-to-us or does-with-us in a particular space-time, but what it is-in-itself and, as such, as experienced by what is coming into being.

While it may be true that a form's potential is infinite and, therefore, its real qualities are always beyond our reach, as Harman suggests, a criticism of this by Tim Ingold is that the object remains too static (Ingold, 2017c, p. 13). With his concept of lines, Ingold shifts the focus away from the form altogether to its pathway of becoming as part of a *meshwork* (Ingold, 2015). Such a view sets the question in motion again, asking not what heritage is (to-us or in-itself) or what it does in a particular context but what it is *becoming*, when heritage processes entangle with other lines? It is in this meshwork of lines-of-becoming that human and more-than-human

lines become together. Not simply us doing to the world, but the world doing to us as we do to it, what Karen Barad (2007), who I shall discuss more later, calls intra-action.

Despite the apparent temporary fuzziness of things, I remain interested in asking what heritage is and what industry is, but in an object-oriented way. What are they in themselves beyond the human-centric desire for ownership or the power to define and limit? Is there an understanding that I can develop a sense of from within the heritage landscapes?

The question then, perhaps, is not how industry becomes heritage, but rather, what is becoming within the experiential heritage landscape I encounter. Where becoming is viewed as synonymous with heritage(ing), as an active movement in-between the past and the future. Where what has been passed on or that which is rediscovered after centuries in the silt, and that which has seemingly vanished, suddenly become central again. And what this is becoming in any given present in a continual process of forming.

With such an approach, the questions we ask in research are themselves shown to live along lines (as here), drifting and weaving through various perspectives, always leading to new questions, or ways of asking questions, and pointing towards the different forms of knowledge we can generate as researchers. If movement is life, as Ingold suggests,[18] then in order to study it, research must surely, I propose, also be mobile and free to move and become along its path too, free to play.

[18] Also Nietzsche who wrote "all that lives, moves; this doing does not exist for specific purposes, it is life itself" in: (Menke & Jackson, 2013, p. 89)

INTRA-PLAYING WITH HERITAGE
(onto/methodology)

The phenomenon being studied (the heritaging landscape) is understood here as something that cannot easily or precisely be defined (in terms of what it "is" to a particular cultural, political, or economic group). Such landscapes are understood as flows of intra-playing forms across multiple temporal and spatial scales that we join with as researchers, and it is this I explore in the coming chapter. Although it occurs along a seemingly irrelevant temporality, even the compounded matter of bedrock, that forms the material foundation of a place as we imagine it, was somewhere and something else entirely one hundred million years ago and will be again in the deep future. This move situates the project within a school of thought that brings ontology to the fore. Neither the world nor the object of study are a given. Nothing is a fixed and reliable reality we have direct access to. What is being studied is rather what comes into being through the process of doing research, bringing both the more-than-human world and the movement and effects of the researcher into focus. However, this emphasis on the immediacy of the moment and what is unfolding does not exclude the past or future but rather views them as an intricate part of that which forms. The past does not exist as an isolatable or accessible object, but rather reappears continuously in non-linear and non-sequential ways and through multiple forms, such as traces, paths, ways of thinking, memories, stories, and repetitions of movement, which in turn influence that which forms in the present (Olivier & Greenspan, 2011, p. 8). As do the speculative possibilities of the future, that which we intend and strive for, that we fear, attempt to avoid or try to design, all are a part of what forms in the present while we are visiting, inhabiting, researching, and going

about our daily lives. And while it is easy for any research (carried out by a human) to start to sound human-centric, most of the cross-temporal intra-playing that forms a place has little or nothing to do with human beings alone, minus (-) the illusion of an all-powerful free will.

Neither a bowl, a fork, a nail, or a computer are human in themselves. And even though these have been co-formed between humans and the qualities of the world they inhabit, this does not make them especially unique. Water flowing forms the way of a river, then over a cliff carved by the glacial ice, the falling water, battering the softer top rocks below, forms a pool of water much like a bowl. Animals use claws to grip and pick up food. Small branches of trees, forking out in multiple potential-laden directions, are used by primates for extracting honey and ants. The woodpecker, through repetitive hammering, forms holes in wood. Networks of mycelium beneath the forest transfer nutrients and information between trees, enabling a collective response to external threats and pressures. Blue whales can communicate at distances of up to one thousand miles apart.

Humans are fond of describing themselves as unique, but it should be possible to acknowledge this without dissolving the uniqueness of other species or other forms. Part of our apparent uniqueness is held in the idea that it is humans alone, human brain power, that has allowed us to accomplish so much. Where nature evolves, humans invent. But throughout history, most human inventions have been inspired by nature, a practice actively pursued by designers today (Benyus, 2002; Gambino, 2009). Blue whales may not have gone to the moon, but then again, maybe they would see little point, as there is no water or oxygen there.[19] Despite all its accomplishments and uniqueness, the one thing human beings have not managed to achieve, in a lasting collective way, is to live within the world in a manner that can be sustained. Rather, as most evidence now concludes, we have achieved the opposite. Such a problem, it

[19] A reference to James Lovelock (2000, p. 141), who playfully speculates as to the potential of the unexplained size of a blues whales brain. Whereby, they may have thought of complex constructions, but lack the tools, craft and cultural arrangement to turn "thought in hardware".

has been suggested, requires a whole new way of thinking at every level, including how and why we generate knowledge (Curry, 2011; Haraway, 2016; Morton, 2010; Weber, 2019).

I begin with images and descriptions of my first encounter with the Rjukan-Notodden world heritage site, where I first attempted to move openly and freely through the landscape with an attentive awareness of how I was being pulled and pushed, and how my path formed between myself and the forms surrounding me. This initial encounter brought out qualities and renderings that helped develop the onto/methodological approach this project takes, where heritage landscapes are viewed as continually moving intra-plays of (multi-temporal) forms that we join with. Most notably, I was left with a sense of a world at play, meaning a way of being or intra-being that remained, for the most part, outside of language, *aesthetic*. Where the various – seemingly disparate – intra-plays I encountered became connected within the landscape by my movements. Here, traces of the past, movements within the present and the possibilities of the future overlapped.

Initial encounter

Arriving at the bus station in Notodden, I am immediately flanked by both
the new and the old along the waterfront of a lake.
On one side are a newly built culture house and library,
a high school, and a supermarket, with further developments underway
beyond them.
On the other, an old industrial area called Hydroparken, a fusion of buildings
and sounds with steam rising from a chimney somewhere in the middle.
The remanence of industry is still present in sound, just about, but the
singular mechanical rhythm echoing out from the mass of structures only
seems to emphasise the sense of inactivity that drifts around the place.

A sort of post-industrial silence.

A sign on a nearby building lists eighteen company names along with their logos.

A layer of frost clings to the surfaces, and the low winter sun casts across the landscape catching three lamps above the sign and creating shadows that point north.

I turn that way and am drawn toward another shadow, this time a very distinct shadow from the railings of some steps going up to the side. The shadow falls next to a no parking sign, a red circle with a line through it. I wonder how many of the people who work here or go to school here would recognise where it was.

I take a photo.

I too am formed into shadow, this other me stretching out, beckoning me towards them, and I follow.

Normally I might have sought out the sunshine by the lake to counter the biting frost in the air. But I have been that way before, and I am curious to find what has been forgotten.

The road continues around a corner, past a café and some other buildings that have been converted into offices. In front of the café stands an old tree, the scar of a branch cut long ago draws me in. It was a low branch that would have been facing out towards where the road is now.

The outer bark has folded around as if it had continued to grow for a while after it was cut. Now it grasps onto the inner branch like botox lips. The surface of the wound is speckled with a dark colouration over the pale wood that is dry and cracked. The rings remain clear but are too numerous to count. Moss and lichen have formed around its edges and on the bark of the tree, and there are layers of yellow dust that are neither moss nor tree.

Taking a photo and zooming in, the image becomes pixilated, all tone and pattern like a David Hockney painting. The pixels reveal the forms within forms as subtly as a 1980s video game.

Photos, like landscapes, make different senses when you zoom in.

I climb up on a wall to try to get an overview.

There are several routes into the complex of structures, but I decide to continue north, following my own shadow again around a large building as it moves between the side of the building and a fenced-off railway track.

I come to a closed museum.

Outside stands some sort of old machine part, a stone plaque in memory of the engineers, and a statue of Professor Kristian Birkeland 1867–1917 speckled white and green from the moist, humid shade and topped with frost. Inside the windows of the former museum hang logos for Yara International.

Otherwise, the building seems empty and unused.

On the other side, I emerge into the shade of another large building and am confronted by a metal sculpture composed mostly of rectangles and semi-circular shapes, forged together into what appears to represent a man riding an animal.

Nearby stands a large red turbine repurposed as a sculpture, set in concrete in the centre of a patch of grass with three spotlights positioned around its base.

There are several roads, one heading back in the direction I came from and two heading south towards the lake. But I am drawn to a desire path that continues between the railway track and another building. I follow this path into an area that appears to be at the edges of official use. Away from the more curated displays of history, the office spaces, and the remaining industry.

There is a trace on the wall where something used to hang, now there are only four screw holes and a square patch of unfaded paint, then a circular yellow sign that says smoking forbidden (røkning forbudt).

As the desire path opens out and fades from view, a derelict train track runs through a cluster of new-growth trees that stand bare and brittle, pointing in all directions. Frosted leaves cover the floor, crisp underfoot and cold to the touch.

The tracks begin abruptly, first on one side and then on the other a few meters later, supported by solid wooden blocks and coarse stones. Moving in closer, islands of moss protrude out from the wood. Their edges are shaded with frost that appears like waves crashing against a shore.

Leaves scattered about have become pressed into the cracks, moistening the wood. The tracks are fastened by solid metal bolts, all rust-red with splashes of orange. Tiny mites busy around the surface.

Nuts and bolts can be found here and there, half buried in the gravel, detached from their original uses.

I dig one out from under some leaves and stones and hold it in my hand. It is heavy and solid. I absorb its weight. I think about taking it but decide to put it back in its hole.

Behind the tracks, there are piles of packed rubble from a building that must have once stood here, pulverised dusty slabs,

powder white on one side.

Then there is another small stretch of track with two old wooden train carriages sitting on it, their windows smashed in. The pieces of track are not much longer than the carriages themselves and are surrounded by open space. The back of the carriages are covered in graffiti, with trees growing up around their edges and in between them. One tree captures my attention. It had sprouted underneath one of the carriages, and as it grew, it curved its way between a small metal hook on the side, forming in accommodation of the carriage's solidity.

The south-facing side is well kept, with a painted sign for a local blues festival on one of the doors, the trees have been cleared, and there is no graffiti.

The surrounding area appears mostly barren.

There are vehicle tracks encircling the train carriages like a large roundabout.

There are boats out of water dotted about, and a faded yellow container stands on metal legs.

All the sounds come from a distance, from the main road over the railway line, faint noises from the buildings and seagulls cawing.

The train carriage is made from metal and hardened wood; it is more solid than the young tree,
so the tree has had to form around it.
But the carriage is changing too.
Not only in appearance but also in form, the tree is changing the carriage in various ways. It tells a different story about the carriage than the front side or a carriage preserved in a museum. It speaks more openly of the temporal nature of the carriage, that it is not separate or frozen but moving in time. Through the spring, as winter morphs into summer, new branches will slowly reach out. Leaves will begin to sprout, creating more shade, trapping moisture, and encouraging animals, birds, insects and natural processes of decay and entropy.

Moving closer, between the trees and the carriage, a tuft of moss sits between a metal ledge and the red-painted wood. The surfaces are speckled with powder-like dots, lime green, pale cream and white and in the grooves and joins lichen flourishes. The paint is peeling away. It is brittle to the touch, exposing the darkened rotting wood and corroding the metal underneath. Slowly the carriage is weathering, eroding, forming into something else. Through an opening underneath, a spider web waits patiently next to wilted dry grass.

The story of the tree bending in response to the qualities of the carriage is only one story from a particular moment that has already passed, but it does not define the tree or the carriage. A story can be read in the curve of the tree, but it does not tell the story of what is or will happen as they continue their co-forming together.

Moving back toward the main concentration of buildings, I am drawn toward a sound. It is a mechanical sound repeating itself in a steady rhythm,
cla-clack, cla-clacka,
cla-clack, cla-clacka,
cla-clack, cla-clack, cla-clacka.

I am suddenly dwarfed by the size and scale of the buildings, sheer grey monoliths, aged and chipped but with newly painted doors, bright blue, and mint green. The remanence of train tracks, embedded in the surface of the road, disappear underneath them.
An assemblage of large, polished metal pipes and tubes stand like a giant church organ.

As I near the clacking sound, I notice a small blue door up some steps to my left. It is partly covered in stickers that feel out of place.

The steps are directly in front of the door and made of heavy gridded metal that clatters under my feet as I climb up to read the stickers.

“Teenagers against drugs”

“Black label skateboards since 1998”

“Make Notodden skate again”

“Skate fight club”

“Notodden Skateboarding,

decks, trucks and rock’n roll”

The last one is a larger circular sticker in the centre of the door.

It is locked, as are the freight doors next to it, and there is no other information or signs of activity. The building looks abandoned. A placard on the building (150) says it was built in 1953 as a packaging factory.

There are no people around,

just the echoes from their movements somewhere else.

A forklift truck whizzes passed between two adjacent streets.

I reach the source of the mechanical noise and peer inside through an opening in the loading dock, there must be people in there, but I cannot see them.

Empty pallets are stacked against the wall.

A sign on the building (130) says it was built in 1926 as a chemical plant. It says they mixed nitrogen and hydrogen to produce ammonia here, which was used in the production of agricultural fertiliser.

Across the road is another building (140) built in 1909 as a barrel and sack factory. Its gates are open. Inside is a forklift truck and pallets loaded with cardboard boxes wrapped in plastic. The large space is supported by several thick square concrete struts and cross beams that have been painted quite intricately with various motifs and images.

It appears to be an active warehouse and I do not want to enter without permission, so I move around the side of the building to find an official entrance. Towards the far end, I find a doorway to a company called Alfa Care.

The door is open. I climb two floors of stairs and enter what feels like any other new and modern office. People are sitting at desks, talking on phones, and typing on computers. I speak with someone at the first desk and explain my interest in gaining access to the storage room and am directed towards someone else at the back of the office.

They greet me and we chat for a while. They explain what it is they do, supplying equipment related to sports injuries and that the industrial building was ideal for storage. They don't know anything about the building's previous uses, nor the artwork on the beams, but offer to take me down into the storeroom so I can look around.

We leave through a side door and are suddenly back in the industrial space, only now up in the ceiling on a metal walkway. Below are rows of high shelves filled with boxes. We follow the walkway along the contours of the building before descending some stairs.

I thank them, and they leave me to examine the images.

Whoever did this must have taken their time. The paintings cover five support struts and the cross beams between. There are various patterns, colours, and styles (suggesting multiple artists) all swirling and snaking around the struts and culminating in a large eye in the middle of one of the beams.

I think of ancient rock art and how, as with rock art, the why and when and what it meant to those who did it remains a mystery.

The remainder of this chapter will attempt to elucidate what I mean by intra-play, how it has developed, and why I find it useful for studying landscapes (that are understood to be moving and complex) from within. The term Intra-play formed through fieldwork, reflections, readings and discussions with my supervisor Per Ingvar Haukeland, from which we published the article 'A phenomenology of intra-play for sustainability research within heritage landscapes' (Richards & Haukeland, 2020) which forms the basis for the next section. First, I want to reflect a little to illustrate how I view this process and way of working with theory, in preparation for the next section.

The term intra-play acts as a process ontology (Braidotti, 2019b; Pickering & Guzik, 2008) that imagines the world being studied to be fluid and unstable, never becoming anything fixed you can encircle or define. It also acts as an epistemology and a methodology questioning how and why we do research, where our thoughts, bodies, and language are understood to be formed through an intra-play with the thoughts, bodies, and languages we encounter. Intra-play, as I mean it, is both an ontology and a method because it is not only a way to think about how the world is (as something external) but something we are automatically caught up in as researchers. We are always intra-playing at some level. It is, as such, a way of joining and imagining with the world we encounter as it comes into being along our path of research. This also opens for a new relationship with theory, where theories are understood (rather than fixed or isolated) to be nomadic and drifting, not driving enquiries but becoming vital through their encounters within the world (Irwin, 2013; Pétursdóttir, 2019) and

"while they are themselves of certain weight and figure, it matters what things they bump into, become entangled with, and moved by" (Pétursdóttir & Olsen, 2018).

Theories and concepts are then also (re)formed as they help to form knowing experiences. As such, this project, the questions it asks, and the experiences encountered have "bumped into" many overlapping and intra-playing theories and philosophies that are both helpful and relevant in forming knowledge from within a becoming world.

Throughout this process, some ideas, concepts and theories have become more central and influential than others, requiring a deeper understanding. However, the scope of influence that informs our thoughts and ideas, and subsequently how and what type of knowledge forms, is comprised of different levels of understanding and ways of interpreting. No theory or concept has developed in isolation, even though a particular strand or line of thought may become central and require greater depth. We cannot simply block out other influences and the bearing they have on how we think and act and how we interpret what we encounter. Nor can we know everything. When we read something, we are always interpreting. That is, we are changing what was written and how it was intended from a new (our own) context. When someone is an expert on Kant, for example, and they hold a lecture, it is always their own interpretation of what Kant meant, or of what others have written about Kant (interpretation of an interpretation). They never (no matter how convincing they try to be) become Kant or know his internal sense of what he meant. Our way of interpreting is itself influenced by our earlier encounters, from conversations, books, films and tv shows to encounters on the bus or walking in the forest. We cannot isolate or identify what it is specifically that is influencing us and shaping our interpretation and understanding of a text. It is too complex and where it begins, or ends is never truly clear. All we can do is try to frame such complexity within an imaginary of the processes underway.

So, while there is depth of understanding, and this is important, there is also breadth of understanding too. Within the theoretical landscape of ideas, as with the material landscape, there is a peripheral understanding that contains a range of

influences we do not have full control over but are embedded in nonetheless. And while this should not be confused with depth, neither should it be ignored, in order that depth of knowledge does not become so narrow we lose sight of other ideas that suddenly become important.

I imagine this landscape of ideas as layers in the soil. On the surface, we have the flowers and grasses, new methods and ideas, the famous quotations that everyone uses, but sometimes out of context. We cannot simply pluck a quote and use it as we want, this would be too shallow. We must dig down and follow the stem of the plant into the soil, where the roots begin to spread out, seeking nourishment, to explore what is feeding them. But soon, the roots begin to tangle with a mesh of other roots from other plants and flowers. This is the most fertile layer, but also the most chaotic. Ideas become entangled, and it is difficult to tell where one begins, and another ends. And all the while, new seeds of ideas push up towards the surface, and old ones are pulled back into the soil, down into the rich layer of humus below.

If we dig down, following only one idea or one theorist, we can go very deep, but our path and our view becomes narrow (by necessity). If we go too deep, we reach the hard bedrock where ideas become almost fixed and disconnected, solidifying into a sort of truth yet hard to access or penetrate in any useful way. Kant is dead, so to speak, the man, not the ideas, and rock is only bedrock if it supports the vibrant fertile upper layers where ideas can become entangled and confused and form new ideas. In those layers, we find a compost of interpretations about how we "should" do research and what it all means. Where it is neither possible to know everything, nor to disentangle and isolate one clean and pure understanding.

Intra-play, as a method, includes everything ontologically without knowing what everything is. Accepting the fragmentary and limited nature of experience and, as such, knowledge, always stretching out beyond our grasp. This opens for a "different species of knowledge, a way of knowing that does not lead to certainties or truths about the world or the ways things are" (de Bolla in: Bangstad & Pétursdóttir, 2021,

p. 159). Knowledge is rather relocated within the "knowing subject" (Haraway, 2016) whose ways of moving and interpreting are equally complex and fragmentary.

It is inspired by a range of ideas and concepts which embody the same spirit, without trying to do exactly what they describe. It is to feel one's own way, opening for the ideas, questions and renderings that form within the encounters you have and following where they lead you (Irwin, 2013). What I have access to with the ideas and writings I discuss in this section is my interpretation of those works in relation to my encounters, and as I dig down, I have tried to find the fertile layer where ideas are fluid and active but before they become too narrow and heavy to work with.

Theoretical landscape: play & intra

> Rational cognition and sensible cognition provide an idea of truth,
> however - which is useful for being in the world -
> which is a sensory condition? [20]
>
> Christoph Menke

Intra-play stems from an understanding of the concept of play as a primary aesthetic force through which forms are formed, and of intra as distinct from inter, as used by Karen Barad (2007), where the play is understood not as an action of one form, nor of separate forms within a network, but as something constantly underway in-between varying yet inseparable forms. I will now explore how I understand and am using the terms play and intra through the layers of ideas and theory that have become central, when read against my experiences. Then in the next chapter, I look at specific methods within sensory ethnography and arts-based research that have helped me in

[20] Menke, C. (2013, p. 16)

exploring how knowledge, and a way of expressing that knowledge, might form through intra-playing within a landscape.

What do I mean by play? A child plays, but that is not exactly what I mean, and neither is it entirely not what I mean. We play sports and games and so on and so forth, and again this is not what I mean, and neither is it not what I mean. In both cases, I would say that the individual might reach a level of "intoxication" within the activity they are engaged in. They reach a "state of play" through which they are engaged with the world in a different way (Bohm, 2004; Menke & Jackson, 2013). A child moving freely in a world where anything can become something else, or a sportsperson contained within the constructed reality of a game, whose body precedes their process of thought.

It is, perhaps, the way the word play is so often applied that I find difficult rather than the examples (of a child or a game) which, I suppose, are the first things that come to mind for most people when they hear the word play. Less so would people think of the wind playing with the leaves, the painter playing with the canvas, or the tree playing with the train carriage. However, these perhaps come closer to what I mean. They say, "where are the children?", "oh, they are just playing" or "it is only a game you are playing" to, in a way, dismiss the activity as something outside of the important world of work, practical/rational accomplishment or social purpose.

Play, as I mean it, is instead something more fundamental, something central and primary to human life and life in general. It is a primary condition through which we engage with the world, how we learn, innovate, move, develop, and form understandings of the world we are embedded in. It is a way of being that can be both unconscious (just being) and consciously invoked (a "state of play"). It refers to an embodied, embedded dialogue between a person (or any other form) and the world

of forms that surrounds them, where, in the meeting, the potential for something new unfolding is always present.

I will begin my discussion with Johan Huizinga (1955) who asserts that play is primary, that it is pre-human as "animals play just like men". In being pre-human, play does not cohere to humanly conceived "antitheses of wisdom and folly… truth and falsehood, good and evil… it has no moral function". So, anyone hoping to prescribe play to their own ideological intentions will be disappointed, as play is pre-ideological.

In defining play, Huizinga finds that it is "not susceptible of exact definition". He instead suggests characteristics that help us to encircle what he means by play. But first, he divides play into two threads (which could be problematic for what I mean). He labels them higher forms of play as in social play (that is his focus) and a primitive or primordial play he ascribes to children and animals. I would perhaps rename these two distinctions, say primordial play rather as 'pure play' or a purer form of play and higher play as a 'diluted' or more controlled form of play. Doing so also, in a way, reverses (at least linguistically) the hierarchical feel ascribed. With pure and diluted, these forms remain connected, only in the latter more of something else is added.

He summarises that "the formal characteristics of play, we might call it a free activity standing quite consciously outside "ordinary" life as being "not-serious", but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained from it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner" (Huizinga, 1955, pp. 1-27).

Here, though, play is already encased, with limits of time and space and fixed rules, a part of the realm he describes as "higher" (or diluted) play. But he also says that "play creates order, is order… a temporary perfection to an imperfect world". Perhaps this helps to distinguish between a game, where the rules are pre-determined, and play, which forms the order that makes games possible but is itself free from pre-determined rules.

Huizinga also discusses fun, the enjoyment of the child or animal and the opposition to the seriousness of the "real" world. But play is not fun in the sense of folly or silliness, it is serious also. He finds the word 'aard' in Dutch or 'wesen' in German better captures what he means, which translates as essence or being. Wesen oder nich wesen, dat is de Fraag. ("To be or not to be, that is the question").[21] This perhaps puts us back into the stream of primordial (or pure) play that is closer to my meaning.

Christoph Menke extends this view, drawing on Johann Gottfried Herder and Friedrich Nietzsche; he takes play back to its purest form, saying that concepts and ideas such as the moral good or what a purposeful act is are ultimately tied to our capacities (primarily that of reason), which he says are learned capacities. By placing our capacity of reason before what is good or true or meaningful, or as a way of judging if we should act, we block out the potential for developing new conceptions of those things, of what is meaningful or good. Menke points to the artist, who he says is good at "not knowing", bravely stopping at shapes and tone. The force (Kräfte) of the artist is their "heightened state of play," an intoxication, similar to what Huizinga described as a "seizure". It is through play that they do that which they cannot do, without knowing why they do it, they go beyond their capacities and experience something new. Through this process, they form a new conception of "the good" beyond the good act of reason (social purpose), they experience this state of play itself to be good, a "good as living self" - being - (Menke & Jackson, 2013, pp. 81-98).

Menke asserts that play is the force of a non-teleological-aesthetic concept of life that Herder described as the nature of man "prior to the formation of rational faculties". It is aesthetic "because it is not yet "clear"; not cognition but feeling," expressive. It is non-teleological as it does not adhere to external laws or organic

[21] Shakespeare, W. Hamlet. Act III, Scene I

desires as the other biological and mechanical forces do. It is pre-normative and pre-rational, responsive (Menke, 2010, pp. 554-565), where:

> In the operation of the mechanical, biological, rational force, something general - law, purpose, norm - realises itself. In the operation of the aesthetic force, nothing realises itself. The operation of the aesthetic force is a mere play… The aesthetic freedom of a way of acting that escapes the rule of generality (p. 567).

The pleasure of play is then the free unfolding of these forces that, in contrast to normative and rational faculties, act as an "enlivenment". For Herder, the operation of this aesthetic force is "imagination", as the "play of expansion and contraction" where the imagination gives rise to new images from its association with other images in a continuous unfolding of new meanings that allows us to transcend that which came before, and it was this force that rendered man capable of forming rational faculties to begin with, "the force of imagination is the precondition for reason". Furthermore, he argues, it is in our aesthetic nature, in our ability to imagine, that people are equal, "equal in being able to become different from what they are now." Only after, when we have developed capacities through this force, do we become socially unequal in our capacities by nature (2010, pp. 260-270; 2011, p. 15).

Play is not moral; it is pre-moral. Play is not rational; it is pre-rational. Play is primary (as Huizinga and Menke agree). This makes play useless to designed or planned processes but fundamental and natural to emergent and creative processes, where success (in play), according to Menke, is "a living act exceeding or falling short of purposeful action" (2013, p. 91).

I do not propose here that the force of play is the answer to a particular problem. I do not propose it is positive or negative. It merely offers the possibility of another way of doing, being and knowing that is often overlooked or constrained. Play does not like being put in a box. If you wish to try this, next time you see a child absorbed in play or an artist in flow, go and impose limits or rules on them, try to "rationalise" what they are doing and see what occurs (Huizinga would call you a spoilsport), the

play will be broken and the outcome distorted, they are engaged with the world in a different way.

Play, as mentioned, is a contested, ambiguous, "hard to pin down" term subject to a variety of rhetorical uses (Salen & Zimmerman, 2006; Sutton-Smith, 1997). In its purest form, I propose it is a sensory condition, in that we play-with-the-world. It is play because it is a free activity between two or more things. It is free as the goal of the activity is internal (as it is unconscious). On the other hand, we think the world through our conceptual capacities, our cognitive condition. As soon as the forces of play interact with the world, they become entangled with the processes of rational cognition. These are the two ways through which we know the world, both of which, as Menke says, offer an "idea of truth." Despite their opposite natures, these two are inseparably intertwined. Rational cognition (despite Descartes's best efforts) cannot be wholly separated from the world, and if we are to act in the world, the body must navigate the limits of social life.

Huizinga offers a useful analysis of the play elements of culture. My departure from him comes, however, with his focus on what he calls "higher" forms of play, by which he means established forms of play and games, and also with his insistence that play is separate from ordinary life.

I have so far explored the concept of play and suggested it represents a force that comes prior to the conceptual world but is not separate from it. Further, that play is realised as an aesthetic expression of freedom (within).

With Huizinga and, to an extent, Menke, the focus is largely on human actions, where the emphasis of the force of play remains a human attribute, even though, for example, the artist is relating aesthetically with the world. What I am proposing is to extend this notion beyond the human and make it more-than-human. Not simply by saying that animals also play, but that the force of play itself is not an attribute of an

individual thing or form but emerges in-between them, and I mean that this should be a fairly simple and intuitive move, if we accept that play comes before reason. If play comes prior to reason, then it also comes prior to the dualisms between man and nature and the hierarchies of agency that have arisen from this. Play, as such, is a force that exists within an "ecology of things" (Bennett, 2010), where our actions, our agency, our thoughts, feelings and what we create are seen to be formed from within this multiplicity.

Following Menke, play - as I mean it to be understood - is a force that arises in-between forms, through which they do something they have not done before, even if that something new is a "repetition" (Lefebvre, 2013). It is how we "go beyond", and is understood as such in art, innovation, and creativity generally (Bateson & Martin, 2013; Bogost, 2016; Ryall, Russell, & MacLean, 2018). However, the aesthetic force of play does not happen in isolation, you cannot play by yourself, nor does play occur between separate "objects". The force of play, I argue, always unfolds in-between distinct yet inseparable forms in their continual e/affective moving and forming together.

The forces of play are not separate from the past or future; rather, they are intimately woven into what unfolds. Memories, ideas, habits, stories, fears, dreams, and intentions all e/affect the play and are, in turn, changed through the encounter. Outside of the human realm too, the bough of a tree shaped by the prevailing wind is a form of memory strengthening the tree in preparation for the next storm. Here we can speak of shapes, movements, tendencies, qualities, features and e/affects.

This in-betweenness of things is captured by the prefix "intra", as used by Karen Barad (2007) with her concept of intra-action instead of inter. The distinction being that with inter, the action is understood to be occurring between separate things in a nodal network, whereas intra locates the action in-between forms (Barad, 2003, p. 815; Richards & Haukeland, 2020). Here the differing forms are seen to be inseparable from the actions, intentions, meanings, and other forms that come into being through this process.

The similarities between how I am using play and how Barad is using action would likely outweigh any differences. However, as I have argued earlier, I wish to distinguish between play, as the openness and freedom of "living self", the good of being, and action, understood as a purposeful and reasoned act that adheres to pre-established notions of a moral or social good. It is not that play discards political or ethical issues, but rather remains open to their continued forming outside of reason.

Methodologically, what play suggests is a continuous, unfolding process of engaging with and responding to a diversity of forms and imaginative aesthetic expressions, through a haptic (or full sensory) engagement with the world. A process that does not seek end goals external to itself (such as good or rational action) but rather seeks the experience of the process. The aesthetic freedom that allows us to go beyond and experience or create something new. As such, the word play invokes an openness and freedom to new intra-relations that dissolves the notion of a singular intentionality (or hylomorphic imposing of an idea onto a passive material world) that lingers, I suggest, over words like action or craft.

It does not, when talking about infinite potential, discard or deny the tendencies and limits of forms. The seed from a birch tree does not contain the potential to grow into a rose bush. It has an inner tendency, or life force, towards a form, but the actual forms it will take, how it will grow and become along its journey, or if it will grow at all, is subject to a continuous intra-playing with the other forms it encounters through time. The journey of every tree is, in this sense, unique and its potential number of forms and directions unknowable.

Another of Barad's (2007) conceptual and metaphorical tools I touched on earlier (that is useful in relation to this) is that of diffraction. She describes diffraction as a phenomenon distinct from the more commonly used notion of reflection, with examples from physics, and then stretches this out over broader natural/cultural/social fields, including how we critically assess our own research. Here reflexivity as a method, linked to notions of mirroring and sameness, is queered by the idea of diffraction as unquantifiable differences and ontologies of becoming.

Simply put, if we never experience the same phenomenon in the same way twice, our reflections are also momentary and temporal in their usefulness.

Diffractions in physics deal with how (sound, light, water) waves bend, spread and overlap in patterns of difference after they encounter another form. As these patterns of difference are non-repeatable, and that space, time and matter do not exist before their intra-actions, it is the "nature of entanglements" she seeks to explore (2007, pp. 71-74). Through intra-playing, every form is continually being diffractively formed in new and unpredictable ways. Shaped, changed, joined with, cut down, trampled, sprayed, sat on, preserved, painted, ignored, captured, printed, spread, rusted, and rotted. As it is when we intra-play as researchers, we are e/affected in multiple ways, changed, while we also effect and affect the world we meet, in ways that diffract out in unforeseen, unclear and unintended directions.

Central to what I seek to convey by the term intra is really a feeling, and then a sense of what that feeling means or embodies. It is to be within a landscape that is encompassing you, attuned to the sensory flows you are not only experiencing (more-or-less consciously) but co-forming along with the multiple other forms and the infinite potentials such complexity contains. This intra-being of forms is not something you imagine or believe but something you witness and experience. One of the clearest examples, both concretely and metaphorically, is that of the wind passing through a landscape. The wind itself is invisible, but for the effect it has on other forms, of dancing trees, seagulls riding thermal waves or smoke from a smokestack wiping this way and that. The wind is a force that can take on many forms of strength and direction, formed from other complex processes and intra-plays of heat and movement far away. It cannot be reduced to a neatly defined thing. There is no windiness, really, apart from what is experienced. The wind passes through a landscape, and its path of movement is formed along the way together with what it meets. Slaloming amongst trees, weathering and shaping them as it too is shaped and weathered. The wind does not pass through a building but is slowed and moved around it. It flows over mountains, blows through tunnels and under untethered

trampolines, lifting them up and into the garden next door.[22] It carries with it sounds, clouds and rain, picks up dust and leaves and plastic bags, co-forming their dance. It can blow all day or come in bursts out of nowhere, and even on the stillest of days, a quivering blade of grass reminds you it is still there. The wind is one of the great movers, always at play.

With the feel of intra-play such experiences provide, we can extend this sense of the world around us to all other forms, including ourselves as tourists, researchers, or inhabitants of a landscape. Here wind (for example) can be metaphorically extended (as is often done; they blew through town like Thelma and Louis, a political storm is brewing) when thinking of ideas, technical revolutions, language, rivers, roads, and mountains. The primary distinction between mountains and wind is their vastly (from our perspective) differing temporalities. Both are essential, both are moving, both are shaping and forming the landscape through their intra-plays.

To come closer to what I wish to express with intra-play, I find it helpful to consider the work and ideas of other people who seem to be describing something similar and the philosophies and theories that underpin such ways of thinking and doing research. When starting to approach this, it is quickly discovered that many paths lead to Gilles Deleuze and Félix Guattari, whose dense works provide a plethora of concepts and ideas that help to encapsulate the complexity of how we experience and encounter the world and how we might write about it, including that of the *rhizome*.[23]

Another central figure that many, if not most, of the threads I have followed, arrive at (either implicitly or explicitly) are the ideas of Baruch Spinoza, who was

[22] This is something I saw while working in this thesis, the wind taking the trampoline, when taking a break from the screen and looking over my garden.

[23] This term, which I use in reference to my writing in part two, refers to Deleuze & Guattari´s metaphorical use of complex root systems beneath the soil, such as mycelium. They extend this in their analysis of culture and especially language. Arguing that forming is non-linear, non-hierarchical and multiple, yet that their remains a connectivity between all parts that is too complex to be "traced" from without (2013, pp. 3-26).

himself one of Deleuze's primary influences, and it is Deleuze's (1988) reading of Spinoza that most interests me here.

Spinoza, writing in the mid-1600s, offered an alternative to the dualisms that were emerging during the enlightenment, particularly from Descartes and the so-called body-mind split. Instead, Spinoza proposed a holistic ontology of existence that strikes uncannily close to recent understandings emerging from quantum physics and the entanglement of mind and matter that Barad describes. According to Deleuze, for Spinoza, everything (or god-universe-nature) is composed from a singular substance with "an infinity of attributes", with all things being a variation of this substance (p.17). The mind and body are not considered separate, with the will of the rational mind in control, the two, he argued, are rather entangled in a sort of dialogue, where "an action in the mind is necessarily an action in the body as well" and equally a passion of the body a passion of the mind (p.18), one is not devalued or made secondary to the other, they exist in parallel and are both equally opaque to the individual. When a body meets another body or an idea another idea, through the encounter, they are changed. Sometimes they "combine to form a more powerful whole, and sometimes one decomposes the other destroying the cohesion of its parts". But all we have access to is what happens, that is the "effects separated from their real causes". Such a way of thinking means to submit that ideas like control and absolute free will are instead formed in amongst the encounters our body/mind has without our being fully aware of it.

As we are encountering, we are also being encountered.

Spinoza does not speak of good and evil but rather good and bad, which represent the e/affects of our encounters on us (and us on other body/minds). Bad encounters are those incompatible with our being, and we experience these as a sadness (or decomposition). The good compounds its relation with us in a joyful sense (composition). It is "that which agrees with our nature or does not agree with it". With this, he is proposing an ethics of joy, where we should, simply put, seek out and

engage with encounters that increase our powers of joyfulness. This, I find, is similar and brings us back to the ethics of play outlined above, where play is understood as something aesthetic, to experience the good of living that comes before the moral good of social purpose. Here, together with other forms, we are able to go beyond and exceed ourselves, forming something new.

WAYS OF MOVING (methods)

I shall now shift from discussing intra-play as an onto/methodology, or way of thinking about and imagining the world we study, toward how we might join with the intra-playing landscape as researchers, where we seek to develop a sense of it and express that sense without reducing it to closed, conceptual representations of what something is.

First, following directly on from the previous chapter, I shall solidify my research approach, using Ingold's distinction between Haptic and Hylomorphic engagement, where knowledge is seen as something being co-formed between us and the world. Then outline four ways of intra-play developed for sustainability research within heritage landscapes (Richards & Haukeland, 2020).

I shall then discuss the more concrete ways in which I will document and express this, drawing on examples from arts-based research methods, visual and sensory ethnography and poetic and reflective modes of writing. Before ending by discussing the ethical considerations such research requires and proposing a playful and performative approach, an ethical way of moving, captured by the metaphorical metamorphosis *becoming driftwood*.

Haptic & Hylomorphic ways of knowing

Tim Ingold (2011, 2013) introduces two concepts he refers to as haptic and hylomorphic "ways of knowing". According to Ingold, to know haptically is to step in amongst and engage with the world from within, rather than attempt to impose your will, intentions, or abstractions onto the world from outside. He explores this

with examples of craft making, where he describes making haptically as "a process of growth," where the maker is a "participant in amongst a world of active materials… adding his own impetus to the forces and energies in play" (Ingold, 2013, p. 21).

Juhani Pallasmaa (2012) makes a similar point in his critique of modern architecture, with what he calls a "hegemony of the eye" (ibid., p. 28) at the expense of a haptic, multi-sensory approach. This "frontal ontology" (ibid., p. 33) removes the body from both the process of making and experiencing space, pushing us out of space. He highlights the importance of peripheral vision for drawing us into a haptic sense of space. Here "focused vision confronts us with the world whereas peripheral vision envelops us in the flesh of the world." (Ibid., p. 14). This phrase, *flesh of the world* (from Merleau-Ponty (2013)), refers to how we carnally extend into the world through the forms we co-respond with as we wander along our way of life (Richards & Haukeland, 2020).

Applied to research, it suggests a shift from the hylomorphic way of knowing, represented by abstract and representational approaches, to a haptic way of knowing drawn from the flux of concrete experiences and "correspondences" situated in space-time (Ingold, 2017b). To sustain a landscape is not to preserve it as an artefact, but to animate it haptically through the spontaneous intra-play of forms passing through it. To know haptically is to feel and intuit what makes sense, not simply intellectually grasp its logic. If researchers study heritage landscapes in a hylomorphic way from *without*, it will form a different type of knowledge than if one studies the landscape haptically from *within*, as an inhabitant. What I seek to do here is simply extend this notion of haptic knowing to the process of doing research, considering the research questions, concepts and theories as something formed haptically, in amongst the different forces at play (Richards & Haukeland, 2020).

Methodologically, Ingold is keen to point out the distinction between ethnography and anthropology, whose method he says is participatory observation. He says that "anthropology is a generous, open-ended, comparative and yet critical inquiry into

the conditions and potentials of human life in the one world we all inhabit." (Ingold, 2018, p. 58) He emphasises that such research is a form of transformational learning that forms the person you become through your research rather than the objective documenting approach of the ethnographer (Ingold, 2013, p. 4; 2017a, p. 23).

As such, he says, writing is a part of this when it is not simply a Geertzian description of what is seen but a transformational process of participation. It is not about collecting data, but about joining speculatively with the world you seek to understand (Ingold, 2013, p. 4). "Liberated" from ethnography, he proposes an anthropology that is open to participate more artistically with the world it encounters, to correspond with it, which he illustrates using the metaphor of a ball.

> Let us compare a hard object – say a ball – with a squishy one. The first, when it comes up against other things in the world, can have an impact. It can hit them, or even break them. In the hard sciences, every hit is a datum; if you accumulate enough data, you may achieve a breakthrough. The surface of the world has yielded under the impact of your incessant blows, and having done so, yields up some of its secrets. The squishy ball, by contrast, bends and deforms when it encounters other things, taking into itself some of their characteristics while they, in turn, bend to its pressure in accordance with their own inclinations and dispositions. The ball responds to things as they respond to it. Or in a word, it enters with things into a relation of *correspondence*. In their practice of participant observation, anthropologists are correspondents (Ingold, 2016, pp. 9-10).

Research becomes an experiment with unknown lines you should follow and co-respond with rather than describe and represent. It is an anthropology *with* rather than an anthropology *of,* where we learn *from* rather than *about* the world. To step into what Ingold calls the in-between, the life of lines, where "there are no subjects, no objects, no subject-object hybrids, only verbs" (Ingold, 2015, p. 152). Where things are not things but becomings; heritaging, commoning, "humaning," corresponding, questioning, playing. A form of researching open to its own becoming within the

process of attending to the *affordances* (Gibson, 2014) the world-we-meet offers, in a process that never really closes.

Four ways of Intra-play

The phenomenological method developed and applied as a part of this project has a history of its own. This history includes, as I touched on in the opening chapter, my own early education and research using experiential and phenomenological methods, along with training in meditation practices. Then throughout this project, I attended PhD courses focused on phenomenological, sensory, and arts-based methods, which involved practical experimentation and theoretical study. This included a short experimental project entitled 'An Ice-lolly Melting in the Sun' aiming to render my ontology artistically.[24] These stages culminated, along with my early fieldwork, in publishing a methodological article, that I discuss further below. After this, I co-organised workshops, testing the methodology along with others, first with students studying heritage and outdoor life, and then together with my co-author and a research group at Agder University in 2022.[25]

Our attention is a limited resource (Crawford, 2016), and parts of phenomenology are in some ways akin to meditation or mindfulness (Finlay, 2009, p. 6; Ingold, 2013; Introna, 2009, p. 39). These approaches aim to help develop an openness and attentiveness to both what is around you and yourself as a part of what is forming, and as with any method, they require practice. This is something that became clear during those workshops, where the process was compressed into one or two days. Here some people took to the task more immediately while others struggled, seemingly uncomfortable with not knowing exactly what they should find out, or

[24] The video and accompanying story can be accessed here: https://vimeo.com/433595748

[25] On list of activities: https://www.uia.no/forskning/kunstfag/kunst-og-sosiale-relasjoner (retrieved 02.02.23)

seemingly unable to shift to the mindset required or stay off their phones. Generally, though, people found the approach useful, leading to questions, insights, and discussions about the multiple ways we can encounter and draw meaning phenomenologically.

In the article – ´a phenomenology of intra-play for sustainability research within heritage landscapes´ (Richards & Haukeland, 2020) – we identified four tentative ways of animating a phenomenology of intra-play as a non-prescriptive research methodology: co-attending, co-responding, co-forming and co-rendering. In both of our (the author's) research approaches, we use ourselves as a participant in ways that animate the various forms we encounter and intra-play with, for revealing new understandings of what the landscape is becoming and the possibilities it has, to move, touch and form meaning.

First, we found that 'attention' is a more haptic word than 'intention' in describing how we open ourselves to the world of forms within the heritage landscape. To be attentive or 'pay attention' is a way of opening our body-mind to the forms we meet. To follow the way of attention is to move with a sense of openness, which involves a wide-angle, peripheral vision at first. The other side of attention is focused vision on the forms and intra-plays we encounter, to 'attend' to what we meet along the way. And as we attend to a form, it attends to us; something forms in-between us that was not there before, a phenomenon. What is sought through the way of co-attention is to get a sense of the landscape. Abram (1996) describes this sense of a landscape as a "reciprocal participation – between one´s own flesh and the encompassing flesh of the world" (p. 128). As human beings, we cannot be fully open, we have limits as to what we can sense and our capacity to be attentive, we also have inner impulses and forces that steer us, our weight. The goal here is to extend our openness as much as possible so that we are sensing the landscape as something we are a part of haptically.

Second, is to co-respond with the other forms we meet through the haptic and performative process called *intra-play*.[26] This opens for the idea that any form can become essential and central in a particular space-time, containing the potential to alter how the heritage landscape is experienced and what it may become. Co-responding is also a way of 'care', in the Heideggerian sense of 'mattering', where one door opens and another closes. Here we can consider what we are drawn toward in an aesthetic sense, but also an ethic of distinction between what opens and what closes. There is a skill of discernment involved in the way we co-respond, or what the composer, John Cage, called a "response-ability".[27] There is something obliging us in the face-to-face meeting with this form, as if the form 'demands' to be seen or heard and in which we respond to each other.

Third, the way of co-forming that arises from this "response-ability" sets out to express that which emerges from the intra-play. This working together to express what is there is a relational process, enhanced by the means of expression that you as a researcher choose. Yet, this choice is not completely 'free', as the forms we intra-play with, whether a tree or a river, a building or a person, have their 'say' in the choices made. Artistic forms of expression can perhaps capture more of the haptic and more-than-representational qualities of what we experience, as I have found that film, photography and soundscaping, although others find drawing, sculpture or poetry better suits them. However, such artistic practices also have a language of techniques that are human-centred, that need to be considered. What is co-formed should be an expression of the encounter formed between yourself and the other forms involved. The goal here is to move past intention, by not trying to carve

[26] The term performative refers to a new materialist use of the term Barad (2007) describes as material-discursive intra-actions, through which the (human-nonhuman) characteristics, behaviours and qualities of forms -form together. See also Bryant, L (2016): http://www.rhizomes.net/issue30/bryant.html (retrieved 01.10.22)

[27] From Essay one, Cage, John. *Silence: Lectures and Writings.* 1961. Middletown, CT: Wesleyan University Press.

something into the world, but to form something together with the world, even though you are a part of its realisation.

Fourth, is to open a way of understanding how a landscape is becoming, by drawing out what Irwin calls "renderings" (co-rendering). She is reluctant to speak of 'concepts' in the expressive process, since they seem too defined, fixed, and final. Renderings, on the other hand, are temporary, in flux and may form and change through the process of doing research. They are "performative concepts of possibility" (2008, p. 4), making explicit what is implicit in the co-forming. These co-renderings form a sense of what the experiential landscape tells us about what is, what has been and the potential for what may become through our intra-play within it. It is not imposing an external construction onto the world, but neither is it objective. It is about forming a sense or understanding of the landscape you did not have before, that would not have formed hylomorphically from outside.

A/r/tography & renderings

The "non-methodology" Rita Irwin calls A/r/tography (which stands for artist, researcher, teacher) is useful here for more concretely considering what we can do when researching the intra-playing landscape. A/r/tography is rooted in the work of Maurice Merleau-Ponty and Jean Luc Nancy, "maintaining that meaning is constituted between beings" (2008, p. 3). It is a non-methodology as Irwin instead regards it as a process, "similar to an understanding of action research that does not follow a prescribed plan or method but rather pursues an ongoing inquiry committed to continuously asking questions..." where "knowledge is always in a state of becoming" (2008, p. 2). Such methodological gaps require an approach to research "that is playful, exploratory, and expressive", between the tensions of art and academic writing (Springgay et al., 2005, p. 897).

> It is often an anxious life, where the a/r/tographer is unable to come to conclusions or to settle into a linear pattern of inquiry. Instead, there is a nervousness, a reverberation within the excess of the doubling process. Living inquiry refuses absolutes; rather, it engages with a continual process of not-knowing, of searching for meaning that is difficult and in tension. Tension that is nervous, agitated, and un/predictable (Springgay et al., p. 902).

The problem with such forms of research, I find, is they can feel so unstable and uncertain at times, often bordering on the absurd. One minute it can feel hopeless and meaningless, as if you are trying to grasp something always just beyond your reach, but then you are immediately reminded of its immanence and power. You sense it encompassing you. The challenge is not entirely, however, with regards to access phenomenologically (as everyone experiences the world through their body-mind), but in communicating this in a way that does not reduce the experience to something severed from itself. Instead of researching experience and producing something verifiable, the goal (in this case) is to experience doing research (or visiting or living generally) and try to communicate the value in doing this, at the "intersection(s) of knowing and being" (Irwin 2005, pp900).

With renderings, as I have discussed earlier, we are talking about concepts in motion, in a constant process of dialogue between "knowing and being". However, where in a/r/tography it is concepts/renderings that lead the enquiry (Irwin, 2008, p. 3), I am allowing renderings to form through the process of research, through the qualities and features that appear within the landscape, leaving it open enough for other meanings and interpretations to be drawn after.

We are also, however, dealing with other already established and multiple meaning-filled concepts, ideas, and ways of doing things. These, for example heritage and sustainability, are used in research, policy-making and business planning to mean something that is supposedly set in concrete. They are often preceded by a supplementary word for clarity - *economically sustainable* or *cultural heritage* - often emphasising the priority and diminishing the meaning of the word itself. For many, economic sustainability means the opposite of sustainable actions, and cultural

heritage means isolated objects suspended in time, rather than the more-than-human intra-play through which forms form.

By seeking out new renderings to express and explore what something could be, we can unsettle the simple application of these words, which are often taken for granted or used to smooth things over while maintaining the status quo, and open for a potential beyond how they are (ethically and politically) represented. And ultimately reveal them to be more useful with regard to planning and living within landscapes. It is not an attempt to redefine the words but rather to reveal their extended value when understood as processes that are experienced, rather than principles of discursive control. How can we experience heritage and sustainability within landscapes, rather than define and use them?

Non-narrative cinema & research

My approach to filmmaking in this project comes from a tradition known as non-narrative documentary cinema, which is closely related to video ethnography, discussed in the next section. Here, I shall outline some of this history as it relates to the fields of sociology and anthropology, then introduce those films that have influenced me.

The practices of photography and sociology emerged around the same time during the late 1830s, with Louis Daguerre filing a patent for his photographic method during the same year as Auguste Comte coined the term sociology (Becker, 1974; Shrum & Scott, 2017, p. 4).

Despite an interest in photography by earlier sociologists and anthropologists, with both practices seeking to qualitatively document social life, by the turn of the century, photographs had disappeared from sociological work, just as the movie camera was being invented, and the discipline began to identify more with the hard sciences, where field notes and data were considered the valid forms of empirical documentation. It was not until the late 1960s that photography and video equipment

began to reappear as part of the sociology tool kit, and even more recently that practices of visual ethnography have been more widely accepted as valuable methods for understanding and documenting the world (S. Pink, 2006; S. Pink, et al., 2015; Shrum & Scott, 2017).

Throughout this time, cinema developed its own history of non-narrative and ethnographic works. Dziga Vertov's 1929 film classic 'Man with a Movie Camera', a silent film from Soviet Ukraine, captured the rhythms and flows of social life and the class structures of the time, where the film's editing and speed follows the rhythms and speeds of the world around it. The film is famous for having developed techniques such as juxtaposition, jump cuts and montage, where edited sequences of contrast and difference are woven together, giving new meanings. Along with early forms of special effects, slow motion, and rapid cross-cutting. Vertov's work began a movement within cinema known as Cinéma vérité (meaning truthful cinema), where the appearance of the filmmaker in the film reminds the audience of their proximity and ethical involvement (Roberts, 2000).

James Benning's 1977 film, 'One Way Boogie Woogie', consists of sixty one-minute-long static shots capturing the industrial decline of Milwaukee. The film includes both random and unplanned events that occur within those minutes, where sometimes nothing happens, as well as some staged performances. Twenty-seven years later, in 2004, he re-filmed it shot for shot, using the same actors when possible. Watched side by side, these films reveal the forming of the landscape through day-to-day intra-plays.

Benning's use of long static shots, that forces our attention toward the possibilities of what may or may not appear, has inspired a number of ethnographic filmmakers, including myself. More recent examples include: Ilisa Barbash and Lucien Castaing-Taylor's 2003 film 'Sweetgrass', which follows at an intimate distance the final journey of a group of ageing shepherds through the Beartooth Mountains in Montana. Castaing-Taylor and Verena Paravel's 2012 film 'Leviathan', brings the viewer into visceral contact with the ocean, boat, and guts of a commercial fishing boat in the Northern Atlantic.

Jennifer Baichwal created a portrait of the photographic works of Edward Burtynsky, following the chain of production and waste in China, with the 2006 film 'Manufactured Landscapes'. And finally, Nikolaus Geyrhalter's 2016 film 'Homo Sapiens' captures the processes of nature unfolding within abandoned and forgotten landscapes.

These films are examples of works that have influenced me and show the potential for combining creative processes such as filmmaking with research, bringing the viewer into the world in productive and meaningful ways.

Video ethnography

There are today a number of examples of methodologies within the social sciences and humanities actively exploring the sensory, phenomenological and more-than-representational qualities of lived experience, including Visual Ethnography (S. Pink, 2006, 2007; S. Pink, et al., 2015; Redmon, 2019) and Sensory Ethnography (Knight, 2020; S. Pink, 2009; Vannini, 2015). These not only challenge the assertion that ethnography is not participatory or transformative but do so by exploring creative methods such as non-narrative filmmaking, soundscaping, drawing and other (traditionally) artistic practices. They do however, support Ingolds argument about the importance of a more creative and artistic approach when researching the lived, experiential world of becoming.

David Redmon (2019) argues that the use of video ethnography, a type of *non-narrative* filmmaking that seeks to thoughtfully attend to the world, is uniquely suited for such an enquiry.[28] He says that it "favours the production of phenomenological and more-than-representational inquiries into sensuous life as a distinct way of knowing, relating

[28] My first education as a filmmaker also makes this approach relevant.

and understanding – it requires the researcher's presence as he or she records lived experience" (2019, p. 4). Such an approach is opposed to semiotics, instead stepping into the lived experience that comes prior to meaning. He argues that "an interpretation that we come to now would be different from one we come to in six months' time. Interpretations mutate as we go through life and have different experiences, so the moment a filmmaker assigns one to a film it constrains the aesthetic potentialities that the film can put into play." (2019, p. 9) By not guiding, interpreting, and telling the viewer what they should see and value, you leave open the possibility for a multiplicity of experiences and for the viewing experiences to change with time and become layered and nuanced.

Redmon emphasises the importance of the body of the filmmaker, becoming intertwined, "bringing audiences into the world of the subject in striking, visceral ways" (2019, p. 3), attempting to evoke what Merleau-Ponty calls "wild experience", transforming while being transformed and inviting the audience to add their own experiences into their interpretations and understandings of what they are seeing (2019, pp. 15-19).

The research approach that I have applied and that has evolved throughout this project, seeks to combine an attentive phenomenological movement through heritage landscapes with artistic/ethnographic expressions that attempt to capture the more-than-representational qualities of that movement and the encounters experienced along the way.

How I have combined these elements has been subject to variation and experimentation during my early encounters, before I settled on a set of techniques. During my first encounter with the Notodden industrial park, described early, I only had a photo camera and a notebook with me. I moved with an attentiveness to the sensory world I was within and practised maintaining a haptic openness, noting what I was drawn towards and why. I took photos that both attempted to capture the wider ambience and feel of the landscape and then closer shots of the features and qualities I became attentive toward, that revealed something to me I hadn't thought of before.

However, when I came to write about my encounters, while I had descriptions that captured some of the sensations of my encounters, the writing I found became too visual-centric, dominating the other senses. Further that the static photographs had a more framed feel to them, a frozen quality that worked against the memories of the experience.

The next time I had a photo and video camera with a microphone, so I was then able to capture the surrounding sounds as I filmed. Even though I continued to use static shots, the qualities of movement were re-enlivened, the quivering of a blade of grass or tiny insects exploring the rusting surfaces. The sounds, however, were too directional and remained secondary to the image, as the sounds were only recorded as I filmed. I tried then with a separate sound record and headphones that extended my audible sensory reach beyond that of my human ears alone. From then on, I could move with the sound recorder, exploring the soundscape and allowing this other sense to become central, uncovering phenomena independently from what I could see. I also found that a focus on sound enhanced the haptic experience, as where vision can easily become unidirectional, sounds appear from all around you and from within you. The sounds of my movement, my breath and my footsteps became a visceral part of the experience. I also found I could talk into the microphone, to say things to my later writing self.

As the process developed, I became frustrated at times with the filming, finding it interrupted my phenomenological flow in a way that sound recording did not. I began to use only a sound recorder as I moved around initially, as part of the phenomenological practice, then later went back and filmed those forms that became central. Although this broke the flow in a sense, it allowed for a more intact experience both as a researcher and for the viewers of the film.

What is encountered, as described by Morton, Ingold and Barad, is, however, not the form-in-itself. When studying from a landscape perspective, we cannot understand the whole in isolation as a postcard image, nor can we break it up into its constitutive

parts and understand it as a complicated machine. What we encounter is its complexity, the phenomena of forms as they appear to us.

The video and sound that have formed through the encounters are, of course, not the original phenomenon but an expression of it and, as such, a new phenomenon. When this is viewed, either by me or someone else, it will always be a new experience every time, never the original experience, but rather, as Castaing-Taylor describes, giving an "experience of the experience" (Redmon, 2019, p. 17). However, as the person who co-formed the expression, I retain my own internal sense of the initial encounter and a more haptic sensory feel of the wider context, that another viewer would need to fill with their own experiences, memories, and imagination. Although my experience of watching and relating to the experience is also always a new and potential laden encounter.

Writing

It is then through the writing, interwoven with multi-sensory mediums such as sound, photography, and video, that the intra-play continues, in dialogue, testing its validity "in conversation with the world, with other writing, and, reflexively, with itself" (Knudsen & Stage, 2015, p. 224) through conceptual renderings.

Even though the image in a film or photo is not the original image encountered, nor a sound the actual sound, as they are bounded and limited, those moments having passed by and faded. They are, however, still images and sounds, an image of an image, a sound of a sound, an experience of an experience. Written language, on the other hand, is no longer an image or a sound, even though they may evoke images and sounds in the minds of the reader. Writing can, nonetheless, lead further along the slippery slope of representation I seek to avoid.

Conversely, written language can do things that sound and image cannot, namely forming and expressing thoughts that form along the way. Even though the viewer forms thoughts themself from their experience of the sound and image, those

thoughts are detached from the original experience, and the sense that came from this. What writing can do, and aims to do here, is to connect the two sounds and images, the two phenomena. Where instead of writing about the recorded sound and image and what they might mean or are – that is telling the reader what they should understand (which would be a representation) – we can try to write backwards, towards the initial experiencing, connecting it with the thoughts, memories, and sensations of the original encounter.

The process of writing in part two is composed of two phases, one is more directly linked to the encounter, the phenomenological descriptions, and the other are reflections and explorations of the qualities and features those descriptions reveal and what they might mean.

In the first phase, I use the images and sounds, along with notes from the phenomenological encounter. I attempt to, in a sense, write the experience, using these sensory devices to re-experience. This begins by going through sounds, photos, and videos soon after, logging them and making notes of thoughts and gaps that are immediately apparent. The sound documentation is very extensive, capturing almost all my encounters. The film and photography are more focused, capturing the scales and details of the landscape. As I write, for example, about being in the museum at Vemork, I am listening to the soundscape of the museum and my movements and encounters there. I also combine this with editing the videos and sounds together, re-forming them into a new phenomenon I can experience mnemonically. I also have pieces of concrete, rusting metal and driftwood on my desk.

The sense of the landscape did not come at once. The qualities and features built up over time and through this, the sense or understanding and the renderings formed and became clear through the writing. While writing these parts, I have also considered how I might write with a sort of film grammar or language, where film techniques can be used in the writing, which, I at least, find to be closer to that of thought and memory. A montage, for example, written as a list of forms or a rapid sequence of events connecting them within a whole experience, even though they

might seem spatially and temporally separated. Juxtaposition, where seemingly distinct and contrasting qualities combine to form new meanings. Or Jump cuts, which move abruptly between forms, and scales, as well as forwards and backwards in time to highlight the non-sequential nature of e/affect. The encounters appear as fragments of a journey, neither linear nor sequential, appearing rather as they relate to the qualities within the writing process.

The second phase of writing involves beginning to draw out how the qualities and features can be understood in relation to a sense or understanding that has been revealed. Again, this revealed sense is not objective, not a singular truth, but that which co-forms in-between me and the landscape I attended to and is in many ways metaphorical. In that they reveal something without saying that that is what it is in a closed or final way. These sections speak to the two renderings I have arrived at (echoes and edges), seeking to express the sense of what heritage is (*in itself*) and how it comes into being, from my experiences within a more-than-human, remembering landscape.

I view the process of writing here, as Anna Gibbs (in: Knudsen & Stage, 2015) describes, as a method too, where the writing is not considered simply as a "writing up of what has been discovered" but a process of sense-making and discovery itself (p. 222). Where writing can wander and *stray* (Rebecca Solnit, 2014), revealing unexpected connections and associations beyond the experience itself. Such a way of writing attempts to move away from a representational – telling what is – towards a more performative mode of writing formed as part of the world (Barad, 2007, p. 133).

Ethics

While the questions this project asks and the themes likely to be explored are not obviously connected to sensitive, personal, or criminal matters that one should be especially careful when handling (to do no harm), this can never be certain. In

addition, the unknown aspects of the approach I have proposed (following the lines where they lead) further opens for such possibilities. This raises ethical questions regarding how free we are to move and interact with the world in an unplanned way, balancing the need to be transparent regarding your intentions and the rights of those you are meeting along the way, without breaking the flow of your bodily experience of the living unfolding space-time you are a part of. The use of video and sound recording technologies adds a further layer of questions with regard to this, such as issues around anonymity and how and what can be published.

When using video, Redmon (2019) speaks about the importance of empowering those you are filming to inform you when they want you to turn off the camera or sound recorder. This, he says, is not only important for developing a relationship of trust, but also brings the experiential aspect of ethics into the video, where it is often concealed in writing. The moment the camera or microphone (as an extension of the body) turns away from something or is told to turn away from something, it brings the viewer into direct contact with the sudden and continuous ethical negotiations the researcher must undergo as a part of the lived experience of doing research, where "ethical boundaries are muddy, messy, and personal" (2019, p. 112).

Throughout the project, I have been cautious when capturing sound and images without permission and not to invade people's sense of privacy or personal space unnecessarily. As things turned out (as was discussed in chapter zero), for several reasons, my project was pushed further from humans in my approach and much of what I encountered involved other-than-human forms or traces of human movements and intra-plays. I did meet people, sometimes in simple conversations, and I was often directed or moved by these. Sometimes I interviewed people, in which case they signed and waiver agreeing to their participation.

At other times I found ways to capture human movement through, for example, the sound of children contrasted with other images, or blurred images of people with the focus on their wider surroundings. In order to avoid them being identified, but equally avoid the break of flow that gaining permission would have required.

However, there are other ethical considerations with capturing "non"-human forms, too, such as how these will be interpreted and received. Rust and decay, for example, are fascinating from a research perspective, but equally, it represents for some people the scars of loss and the pain of deindustrialisation. However, my approach has not been to focus on such things, but to move through the landscape with an attentiveness to what industry is becoming, and I feel my path in full reveals a balance. But this is clearly limited. It is one path of movement that opens for what is revealed but closes for much else, which is why I emphasise that it is not seeking to represent the landscape as a whole.

When immersed in such forms of research, moral or ethical considerations could act as a hindrance to that which is coming into being, closing certain lines of becoming. This may not be avoidable considering the importance of ethical considerations, but an approach that may be useful here is an "ethics of care" that, as opposed to an ethics of justice, sees a shift from traditional notions of ethics rooted in universal rights and autonomy to a relational and contextual understanding of ethics, (Israel & Hay, 2006, pp. 21-22) including the more-than-human world not simply as a backdrop (Abram, 1996; Puig de la Bellacasa, 2017). Such an approach requires an attentiveness and responsiveness to the multitude of forms, their affective qualities and what they are a part of forming as part of an ethics Linda Knight calls "ethical wayfinding" (2020, pp. 85-90), not caring from (a perspective) but a caring-with the world we meet (Pettersen, 2018; Puig de la Bellacasa, 2017). In an attempt to capture this notion of ethics, I shall close this section by describing a metaphorical metamorphosis I call becoming driftwood, as a way of imagining how I can try to move ethically.

(becoming) Driftwood

I am suggesting that heritage is not definable objects or stories from the past but rather something that forms through a performative intra-play within the landscape,

which includes, here, the encounters and ethical considerations of the researcher. Considering this, I have come to find the notion of drift (I mentioned briefly earlier) to be a useful metaphor, suggesting a way of moving and interacting as part of the landscape that captures much of what I have been trying to express. Where our less determined movement hints at the more complex whole that forms and sustains those landscapes and the viability of life within them, while helping to avoid a distanced, material elitism.

In the 1960s, situationist Guy Débord helped to develop an experiential method called psychogeography.[29] This method attempted to examine how the natural forces of the geographic environment shape the structures of society, the conception societies have of the world and "the emotions and behaviour of individuals". Despite the shortcomings and problems associated with this method (discussed earlier), the idea of psychogeographic drift remains useful; here, the drifter seeks out new encounters through a playful movement while remaining aware of how they are being e/affected by the other forms around them. While drift, or the 'transient passage through varied ambiences', lacks a 'clear destination', it does have a purpose, which distinguishes it from the more submissive wandering of the flaneur. The purpose of drift is to seek out and experience particular moods and ambiences within a landscape that can help form new aesthetic understandings and perspectives of that place (Coverley, 2010, pp. 88-96).

Þóra Pétursdóttir (2019) considers the possibility of driftwood itself as heritage "in and of the Anthropocene", highlighting the potential of forms that might normally be considered waste to become relevant and central to our way of thinking. From Karen Barad and Donna Haraway, she highlights the "radical" openness of matter where processes never end or close, "things don't simply add up" into neat stories (p. 99). By thinking metaphorically with driftwood as a product of drift, we can re-evaluate experiential research as something formed by our movements, by how we

[29] An organisation of social revolutionaries in Europe consisting of artists, intellectuals, and political theorists between 1957 and 1972, (Coverley, 2010), *Psychogeography.*

move and how we become directed. Driftwood is perhaps the ultimate drifter, but even driftwood is not helpless. It has weight and length and shape and density, it has a body that has an effect and, in that sense, co-forms its drift, as I do as a researcher. It does not start out as driftwood however, along the way, a piece of wood or a branch that has ended up in the water is slowly formed. It is shaped and smoothed by its journey into what we come to call driftwood. Much like Ingold's squishy ball or Morton's weird encounters, there is a playfulness to its movement and encountering that shapes (itself) and shapes (the world).

As researchers and visitors, we can choose, I suggest, to be more-or-less driftwood-like in our approach, where our desire to make our own paths in the landscape are realised through an intra-play within it; that is to say, we co-form our path within that we seek to understand. Like driftwood, we have weight and length and density (a body and a purpose), we have an effect, but like driftwood, we are also shaped by our movements – we and our research are formed and changed along the way in unexpected ways.

We can choose to pre-determine our route through a landscape with a theoretical and methodological map showing the direction our movement should take and what we wish to find out, but this is a way of moving that does not co-respond; it is to "look but not see".[30] Alternately we can allow our path to form along the way through experiencing the territory, where our drifting might traverse valued sites, museums, unofficial trodden paths, forgotten places, opening for unexpected encounters and directions, as well as forming interventions of its own.[31] Such a way of moving and experiencing perhaps comes close to what Rebecca Solnit (2014) refers to as "writing the landscape".

[30] From Thoreau and Searls (Thoreau & Searls, 2009), *The Journal 1837–1861,* p.373.

[31] Dr Alfred Korzybski is popularly quoted to have said "the map is not the territory … the word is not the thing'".

PART TWO

Wondrous is this foundation – the fates have broken
and shattered this city; the work of giants crumbles.
The roofs are ruined, the towers toppled,
frost in the mortar has broken the gate,
torn and worn and shorn by the storm,
eaten through with age. The earth's grasp
holds the builders, rotten, forgotten,
the hard grip of the ground, until a hundred
generations of men are gone. This wall, rust-stained
and moss-covered, has endured one kingdom after another,
stood in the storm, steep and tall, then tumbled.

Unknown, 8th century Saxon poem, 'The Ruin'.

PATHWAYS WITHIN THE HERITAGE LANDSCAPE

This project includes video and sound work
formed as a part of the process.
These can be found at the following channel:
https://www.youtube.com/@becomingheritage

The paths of movement it is possible to form within the world are infinite and never repeatable. Whether decisions are made beforehand, with meetings, sites, and transport pre-arranged, or more spontaneously and "self"-directed, the encounters and experiences a person has, and the interpretations and affects that form, cannot be replicated close-up, even though they may appear to be repetitions.

In this chapter, what I describe are the qualities, features and sensibilitives that formed along one such path, my path of research within the landscape known as the Rjukan-Notodden World Heritage Site. My movement follows the methodology of intra-play I have discussed, and an attentive awareness of how it is I am being moved by the landscape, both affectively and directionally. Where my movement is understood as something that is co-formed between myself and the other forms I encounter. This movement is not always smooth though, things jar us, and impose

on our encounters, both from within the phenomenological experience but also through what we bring with us and the complex power dynamics and pressures surrounding how we experience, which also try to direct or push us in a certain way. All of this is a part of co-forming my drifting movement.

As I have outlined in the introduction, I did not arrive here as a blank slate. I brought with me thoughts, ideas, questions, and knowledge from my previous experiences and from reading about the area, its stories and similar research methods. The encounters and movements described are drawn in part from field notes, sounds, conversations, video recordings and photos, combined with memories, feelings, and sensations from between the autumn of 2018 and summer of 2022. The phenomenological sense these encounters co-formed is captured in a more sensory, more-than-representational way in the film that accompanies this thesis. The text attempts to draw out qualities from those encounters. Tactile, sensory, and affective qualities that repeated or became central in how I was moved and directed, co-forming the conceptual renderings of Edges and Echoes. These two renderings will later help me in answering my research questions, of how things come into being and what (industrial) heritage is, even though these answers are not fixed and final.

The two sections in this chapter are composed of empirical-analytical fragments from my movements within the Rjukan-Notodden World Heritage Site. These fragments do not follow directly on from one another in a strict order, and while they stand alone, they are also connected *Rhizomatically* through the experiential landscape. My hope is that they will collectively enrich an understanding of the experiences, and of the renderings and how they have formed.

Film and writing offer different qualities to research, as I discussed earlier, where what is more readily captured through the medium of images, movement, and sound, cannot be translated so easily into written language without transforming it into something else.

The following is instead a more *diffractive* exploration of my journey. It is not the journey itself, nor the encounters had along the way, but an amalgam of the memories,

imagination, thoughts, feelings, visual and sensory documentation, along with reflections that splinter in various unforeseen directions. As has been stated, this is not a complete or coherent story, and neither is it intended to be. It is simply one of possibly infinite numbers of complex paths that could have formed and the sense-making process that followed.

This research is not about me, as it is not my journey alone. It is about the landscape I am researching within and all the processes, forms, and intra-plays – large and small, human and more-than-human – that became a part of what formed along the way. It is my experience, but again my experience is not mine alone. It is what forms in-between, what reveals itself through the encounters, from within the infinite mesh of potential. I am a part of it (as there is no research without a researcher), but this is a story of rain and wind and rock and concrete and rust and people and stories and paths and traces and sounds and absence and echoes and edges and forms at play.

The intention here is to explore how I might write about the qualities of experience without reducing them to closed representations or romantic images. Then to draw out the knowledge (or the sense) this process revealed about the forming landscape and about heritage.

I will try not to impose normative values, or at least remain aware of them. And even though these are experiences of what moved and formed with me in various ways, this is, to a great extent, an ordinary and often mundane journey. I am not attempting to portray the beauty or vulnerability of the nature/culture continuum, but rather explore the everyday processes of becoming I encountered within the industrial heritage landscape.

EDGES

Stoic forms

Early on, I determined to call everything forms. It seems important, if we are to take the idea of a more-than-human (flat ontological) outlook seriously, that we should begin without distinguishing and dividing the world up through an already established language and its culturally associated powers, expectations, and meanings. As I discussed, there are an array of different terms people have chosen to use with similar intentions, each with their own advantages and disadvantages. My argument with regards to forms is that this term allows for both the unique, hidden qualities of the thing-in-itself, that it is never entirely reachable in its fullness, but also that it is never entirely of itself either. No form is fixed and final, nor separate from relations. No form is invulnerable to the metabolism of nature. There is a constant "chiasm" between forms.

To contemplate the landscape as being comprised of forms (both established forms of seeming permanence and as-yet unrealised forms revealing themselves) requires an imaginary that stretches through deep time, both backwards and forwards. From such a contemplative position, forms appear as the ultimate stoics. And while it is difficult to feel stoic as a human, all forms, I suggest, in their patient and inevitable forming and changing, brought on through unforeseen encounters and uncontrollable events across vast temporalities, are deeply stoic.

This is a sense I gained through innumerable encounters within the landscape, that have e/affected my way of moving, thinking and being.

The landscapes moves with me as I drive,
weaving in amongst the contours of rock and water.
Through tunnels bored into the ancient layers of time, speeding my ascent.
Stopping for coffee, a helpful man directs me

along a footpath for a while, then arching round, I scramble up a slope over traces of other feet.

I find myself on a hill at the tip of this World Heritage site.

The wind is blowing nearly continuously.

Whistling up over the edge of the hill, passing through me, battering my ears and distorting the levels on my sound recorder.

The trees are small, their branches twisted and turned by the winds, weighed down by the snow, grazed on by deer and the sheep out to pasture.

My gaze forms a line to the horizon, weaving in amongst the differing forms that draw my attention.

There are some larger trees further down, a path cuts through them, avoiding patches of wetland, making its way toward a collection of modern cabins.

Lake Møsvatn spreads across the land like shattered slate, dark and shiny, jagged and dotted with islands, a large peninsula protruding to its middle.

The wind ripples across its surface, racing toward me.
The horizon is filled with mountains speckled with snow and streams heading down from the mountain plateau.
Stretching all the way to the west coast before dropping off into fjords, clawed into the coastline by the retreating glacial ice thousands of years ago.
The landscape appears to me as a mass of shaking autumn colours.
Like a thousand tiny hands of reds and browns and oranges and yellows, waving at me as they head toward winter.

I follow the mountain horizon around to the end of the lake, where the water waits.
On one side is deep water, calm and patient, gently lapping between the rocks.
On the other, the valley floor, bare rocks slicing through a forest of birch.
There are pools of water and floating leaves but no flow. The rocks are dry and covered with lichen.

But there is always the threat of becoming river again, a sign warns.
A no man's land.
Small groups of birch have begun to grow where the river once ran freely,
daring to withstand the occasional flood of released energy.
The leaves and grasses rustle in an uncertain rhythm.
The dry riverbed vanishes down the valley toward Lake Skarfoss and the
Skarfoss dam in the distance.
Beyond, the valley carries on, and beyond that, and beyond that.

All the forms I see are connected to me. I am made central. Not to the landscape but through my experience of it. It is me standing here, sensing, and thinking about the landscape, trying to understand something from within it, but I am momentary and tiny, insignificant to the rock or the water.

The landscape projects an unerring sense of permanence. A settled state on which we might depend and build our cultures. The rocks and minerals, if we could access this, would experience the movement of time differently. Where, over hundreds of millions of years, they have formed and continue to form in amongst their qualities, their weights and densities, the hardness and softness of each composite layer's drift. Between fire and ice, acidic rains, baking sun and battering winds. All these tiny, imperceptible movements that shape our lives and experiences through time.

Compressing time, it is possible to imagine the land itself as a giant creature gently breathing.

These processes of formation can be thought of as irrelevant in our day-to-day lives, occurring at a level so much larger and moving so much more slowly than our perception of space and time allows for. This geologic level is, for us, and for most of the time, static and stable enough to ignore. We only notice its movement when we are suddenly humbled by the short and violent outbursts that sometimes occur, collapsing our buildings, washing away our farms and livelihoods or preserving our bodies in volcanic dust. Yet at the same time, these slow formations underpin the

very viability of our existence, the shapes of our cultures, our movements, the function of our technologies, our ways of thinking, and the matter of our bodies.

This stoic movement through time was not only evident in the land's form and the temporality of earth and rock, but through small and unexpected encounters, connecting forgotten and remembered forms across experiences that became juxtaposed.

I walk through a group of school kids on the way up the stairs to the main floor of the Vemork museum.
Their noises soften and ease, trapped by the walls and ceilings below.
Another group stands at the entrance of the heavy water exhibit. Someone is talking, a projected image of a nuclear bomb explodes behind them.
Three red arrowheads positioned on a shiny silver wall point me into an exhibit.
An open folder with a QR code,
three small glass windows in the wall display parts of an image behind, each with an information plaque.
I move slowly through the exhibit of industrial forms.
An old grandfather clock stands against the wall, stuck on midnight. And artificial clock sounds bounce around the room. A hand-painted sign points to gas masks and a fire cupboard. A white first aid box and a photo from 1912 of two men in bed with their legs in slings being cared for by a nurse.
A circular "smoking forbidden" sign. A row of large cylinders, like a microbrewery, with tubes and pipes going in and out.
The bust of a moustached man's head high up near the ceiling on a wooden pole.
A group of students pass me, chatting and laughing.
A red cardboard arrow points to a display of fake rocks and walls, where a projected video of the Rjukan waterfall plays on a short loop.

A painting of moustached men with red flags marching between the valley sides over an artificial stone/foam bridge. A series of photos of houses, followed by models of houses.

The floor shifts from metal to wood.

Photos of a worker's revolution and a sour-looking woman by her back door. Household items are placed around. A bucket, cups, a stool, a mirror, and a soap tray on the wall.

Photos of the site's UNESCO enshrinement, a crowd of people in the snow, and men shaking hands.

High above the museum,

eleven large metal pipes stretch at an easy angle before disappearing over the edge of the valley. Formed of individual sections, silver with large patches of rust-red bursting through, and joined together by large nuts and bolts.

It is very still here, no wind, only the occasional chuckle of a distant bird.

Piles of rubble are strewn around. Rusted wire, strips of metal, stones, rotting wood releasing old screws. Worn down wooden boxes on struts.

An old controller, light silvery blue with buttons, switches, and lights, like a weapon launcher in a sixties bond film.

I want to go under the pipes. But the bank is steep, formed of loose stones. I wander around, seeking a way. A faint line marks a possible path. I begin to walk, then must sit and slide down on my side.

Underneath are shadows formed by the pipes, held up by stone arches. Small thin trees and shrubs make the most of it.

A bucket stands on the rocks.

Pale blue and silver, speckled with rust around the rim. Crushed, bent, and twisted like the mountain birch.

Inside, a substance clings to its side, a thick rusted screw lies at the bottom, and wire holds the handles on.

I think of the bucket in the museum again.

Shiny green speckled with white, placed on a stool with cups and soap. Dry and warm.

Their contexts and forms, their paths through time so different, yet united in their patience. Both standing where they were placed, becoming something other than they were. Moving in time.

When introducing my method, I used the metaphor of driftwood to capture the metamorphic spirit of my approach to studying landscapes. This involves a letting go, or overcoming, of our impulse as researchers to often distance ourselves from what we are studying or to pre-set limits or goals that might restrict our movement. This is not about just *going with the flow*, as it involves explicit awareness and attention to how we are being affected and directed. As I argued, we are body/minds with an inner directedness, but that directedness is always being formed in some way through an aesthetic intra-play between us and the world we are adrift within. It is through these encounters that knowledge is forming.

In terms of how we do research, we have, of course, more self-directness (in a sense) than a piece of driftwood, but this is also a choice. To extend the metaphor, we could research as a catamaran, a speed boat or tanker and head more forcefully in one direction, toward something specific. This is very useful for very many objectives but will ultimately lead to different types of encounters and a different kind of knowledge than a more driftwood-like approach. Plus, it should be said the power of the ocean, the wind and unforeseen icebergs often make folly of our seafaring goals. Driftwood is more accepting of what it can influence as well as what it cannot. Its journey embodies a different kind of knowledge, of ocean currents, wind direction, island coves, rocks, and resting birds, before washing ashore somewhere and drying out. Through this, it is changed. Its form is different from when it started; shaped by its encounters. The journey is sculpted into its form.

My own movement through the Rjukan-Notodden landscape was also shaped and formed along the way. I found that I tended to follow paths, either official paths or unofficial desire lines, animal tracks or faint traces of earlier movements. Rarely did I stray from the path, only when I was foraging for traces of train tracks or attempting to reach the source of a sound. When I did stray, I quickly ran into trouble and was pushed back by the tide, so to speak. I came against steep drops where it would have been dangerous to continue, thick impenetrable undergrowth, slippery or unstable rocks, and high fences with danger signs. If I was drawn toward something,

I would usually find a path, or traces of earlier movement, a "path intelligence" that made its way there.

Whichever way I was drawn, like the ocean currents, led me in one direction and away from another. Even though my movement was unplanned, I still made choices along the way in response to the traces of movement that were already there. I was, in a sense, led through the landscape by the effects earlier movements had on me. This revealed various and diverse paths of remembering that have been formed and reformed over time, while others remained hidden.

Throughout the process, I too was changed. The aesthetic experience of the encounters became a part of me in terms of sensory memories that I could embody, feel, and re-enliven in contrasting situations. Adding layers to the meanings and e/affects of later encounters, connecting disparate forms of becoming.

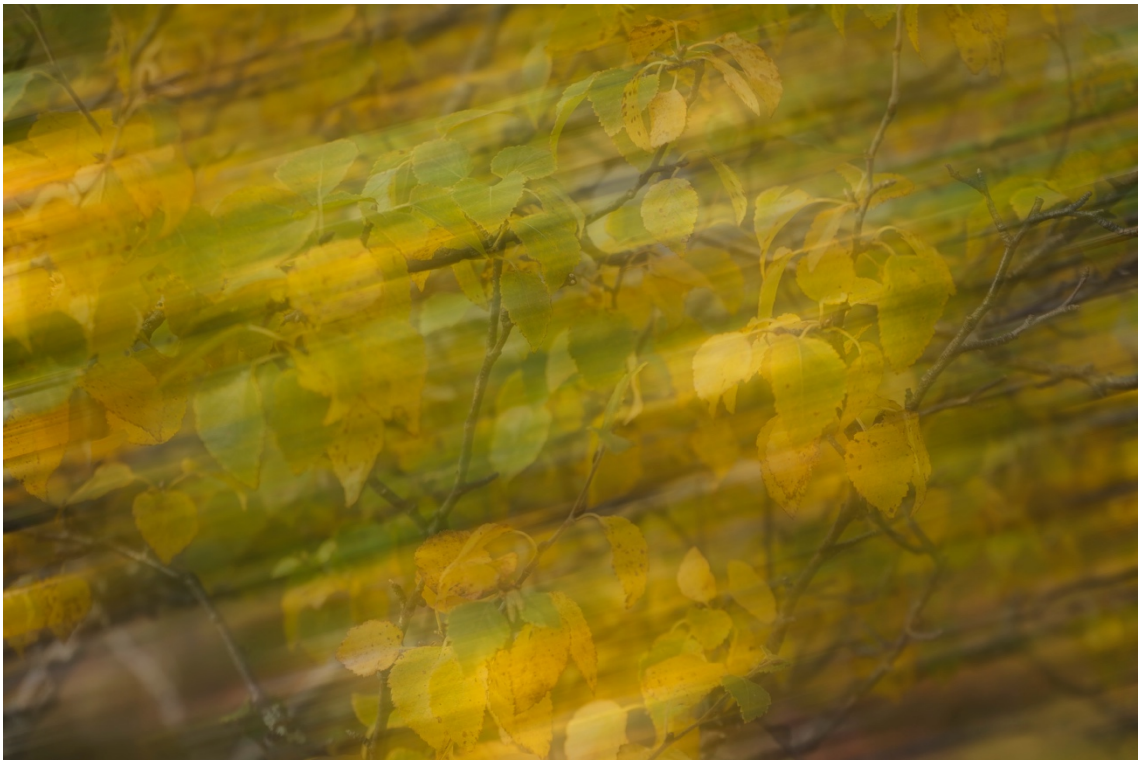
An acceptance of the incomplete and fragmentary nature of co-formed knowledge, where controlled conditions are replaced with drifting ambiences and objects replaced by hidden potentials, is a stoic sensibility forms reveal.

Borders

There is a UNESCO board about the Skarfoss dam. Behind it, a narrow, trodden footpath weaves its way through the undergrowth toward the lake.

I lock the car and head off at pace.

The surrounding forms whisk passed, becoming a blur. The ground squelches beneath me, leaving deep footprints. Twigs snap and my breath quickens and deepens.



I reach a ledge overlooking the dam.
Small birch trees line the valley sides, their autumn leaves hanging on in the gusts of wind.
The lake is brought to an abrupt halt by a straight concrete wall with a narrow, gated road on top.
Metal flaps hold the water back.
On one side, deep water laps the edge, waiting, drifting, and mixing. The other falls off onto bare rocks and shallow pools that disappear down the valley once more.

I move back along the path more slowly.
Attending to its form.
Winding in amongst the swaying grasses, around small rocks, mounds of earth and lichen-covered boulders, avoiding bogs and pools of water.
There is an intelligence to this path.

Trees and shrubs flourish along its banks. Blueberries bob up and down, their branches nourished by the roots of a rotting tree. The thick heavy needles of a juniper bush jolt back against the wind with a seeming determination, for where they want to be.

Purples, reds, pinks, oranges, greens, whites, browns, and yellows envelop the ground, shimmering and dancing to their own beats in a polyphony of movement and colour. A raindrop clings to a fallen leaf. Tufts of amber grass wrestle with the surface of a dark pool of water. The charcoal remains of a fire, and a partially burnt log nestles in the shade of a rock, speckled with leaves and Heather. The path is trodden to earth, kept bare by the imprints of the countless feet that have walked this way before.

Further along the dry riverbed.

It´s been raining for days.

Water runs in from the mountainsides, down the rock face, filling pools until they overflow, forming small streams from pool to pool. The water moves, becoming a river once more.

As the valley deepens, where a waterfall would have been, there are traces of a stone structure.

An old water mill.

Stacked flattened stones on two sides, one square and one narrower, a gap in between that is dug down into the ground, with large grooves across from one another.

Screws and corners of rusted metal sheets embedded in the rock stick out through the moss and fading grass.

It is becoming hard to decipher the mill from the surrounding rocks.

The path here was marked but difficult to find.
Passed an old overgrown tennis court that once belonged to a hotel, an
outdoor stage for a summer play,
the ravine at the base of the Rjukan waterfall, dried up,
and Vemork museum on the other side of a gorge.

The notion of edges seemed important when considering what defines forms, what forms them, and how they become something new. A concept that is useful to think about when considering edges is that of borders, and specifically, the distinction between borders and boundaries within cellular, ecological, and social/cultural systems. Where a philosophy of borders formed through encounters, points towards intra-connection and co-forming rather than division.

With what he calls the "edge condition", Richard Sennett (2017, 2018) stretches knowledge about cells out over ecological and urban contexts. The cell wall (representing a boundary condition) holds things in, while the cell membrane (or border condition) is both "porous and resistant", letting in and out what is needed by

the cell. Only a wall, without any porosity, sealing the cell off from the world, would mean death.

In ecology, the boundary is considered a place of lower activity, often due to the roaming of large predators. Whereas borders, for example the edge of a forest, a hedge row or shoreline, are places of high activity, diversity, evolution, and resilience. Such conditions operate at multiple levels, from landscapes to continents to planetary down to lichen-covered rock and micro-organisms.

The forms associated with industrial infrastructure and the urban spaces industrialisation epitomise, can be understood on one level as an attempted boundary (or wall) condition between human forms/cultures/technologies and nature. Pavements, streets, squares, factories, and dams, where the movements and flows that shape landscapes are controlled by machines, chemicals, steel, and concrete. The borders remain porous, though, letting in what is needed; flows of water, food, complex assemblages of ancient, displaced matter like phones and cars and blenders, and letting out energy, goods, waste, packaging, plastic, tourists and Co2. While resisting anything that might destabilise the order.

Is it though that bounded, individual forms, more-or-less open to their environment, float around randomly bumping into other forms? Or rather that environments are themselves forms, formed out of diverse intra-connected, overlapping collaborations, across multiple temporal and spatial levels? [32]

When moving toward and away from the Skarfoss dam, I experienced the form of the path in different ways. On the way there, I moved very quickly, focused on the path and on getting to the dam, and the surroundings became a blur. On the way back, I moved slowly, attending to the path itself as a form. This brought into focus how the path, as with the riverbed, is not only the trodden area we call a path but is also defined by and formed of the non-path forms along its edges. And as with the

[32] Panarchy describes evolving hierarchical natural-cultural systems (across multiple spatial-temporal scales) that are entangled in continual adaptive cycles of growth, accumulation, collapse and renewal (Holling & Gunderson, 2002).

river not being a river without water, a path is not really a path without another form (in this case me) moving along it, continuing its path form. It becomes a path with and through me as my movement is, in turn, shaped by it.

I shall return to the theme of paths later; however, it illustrates how borders (or what Sennett calls the "edge condition" or Noel Parker (2009) refers the as "the margins") are not interesting here because they divide things up, but because they connect things that are different, holding them together while simultaneously forming them into something new, before dissolving and forming again into difference.

Borderology is a term that refers to a philosophy of borders formed within international border zones, with a focus on local relations, projects, cooperation, trade, and other actions such as tourism and resource and nature management. It proposes an international politics not centred in Moscow, Washington or Berlin, but within multiple different border zones, as the principal basis of international relations and national identities, by bringing together the philosophical traditions of Kant and Bakhtin (Methi, Sergeev, Bieńkowska, & Nikiforova, 2019).

Kant proposed the notion of a cosmopolitan perspective, or ethic, that challenged the still dominant notion of the "other" as less than human, of less worth, where outside the city walls the barbarian other waits. His idea was a basic human right to move, of open borders and a world order based on laws concerning relations between people and not between states. He proposed turning border regions into transnational institutions that join rather than separate nation-states (Kant, 2016).

One of the problems with Kant's thinking here, is that it was still rooted in universalism, "the universal nature in man" and the freedom of the individual. And while many of us today live in a version of the cosmopolitan world he imagined, it is predominantly based on nationality, race, economic advantage, and an adherence to universal western values. For those who often desperately need to cross borders, that challenge is arguably becoming increasingly difficult and unstable.

From the perspective of Bakhtin, life is dialogic, a shared event where living is about participating in dialogue. And where meaning comes about through dialogue at

whatever level it takes place (Holquist, 2002, pp. 21-22). Dialogue is the relation between self and other, where "other" could imply another person, but equally (I argue) a plant, animal, idea, or any form. This dialogue, like play, is *a priori*, meaning that all existence is a web of interconnections from which meanings and identities are continually being generated in new ways. Linked and in constant dialogue through different means, language being just one form.

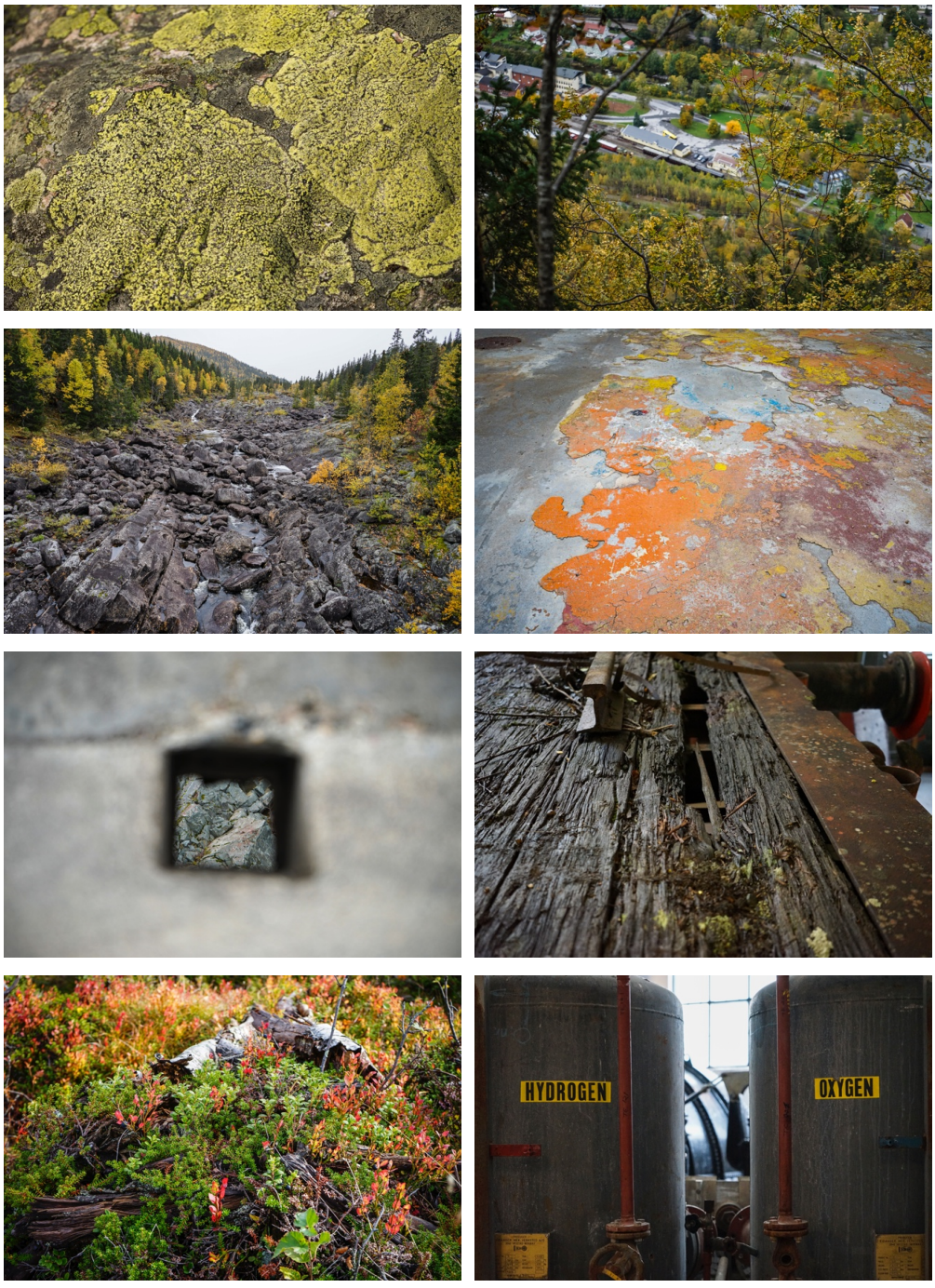
The relation between self and other is, then, shaped by the different positions and perspectives we have from earlier encounters. I see you, where you sit, your context, what is behind you, and I see this through my perspectives. Equally, what I say and do are always formed and influenced by earlier encounters. Then you see me, my context and act from your perspective. Neither of us are this other in or to ourselves though. This otherness, or othering, is rather performed within the encounter, part you and part me. The other could, as such, be seen to exist in-between forms, as the phenomenon of the encounter.

The dialogical self is always in relation, always more and less than itself, and it is through this relation we continue to form. Meanings and identities, or textures and qualities, are always generated through an intra-play between self and other, whether the other is real or imaginary, material or immaterial. Life is, as such, expressed as a continuum of networks of statements or actions and responses. Where statements and actions are always informed by earlier statements and actions and anticipate future responses in a never-ending flow of movement (Holquist, 2002, pp. 14-25).

Such a dialogical way of thinking proposes an alternative ethic that we can again learn from forms. This is an ethic not based on a universal right to move freely, as autonomous individuals, but rather a movement formed through constant negotiation, where the edges of forms become blurred, and the border zone is shown to be – not one or the other – but something new that is always forming in new ways.

Tim Flohr Sørensen (2021, pp. 146-163) uses the term "surface ecologies" in a similar way when challenging the idea that the surface is something superficial, disguising a deeper importance that should be uncovered. It is rather that when

encountering the surface, certain depths (or potentials) are revealed, but not in a neat and easily understood manner.



What is revealed (or forms) within the encounter is also always unique. How the landscape appears to me is not how it would appear to every form. For example, with colours and shapes and movements. Not only colour-blind or visually impaired

humans, but there are also many dichromat animals that have limited colour vision and monochromats who can only see in shades of black and white, such as bats and rodents. Equally, the speed with which the landscape moves, the waving leaves, the grasses whipped to the ground by the wind. Smaller creatures such as starlings or woodlice would experience this movement to be slower than I do, or perhaps, if it were fast enough, as if there was no movement at all. As such, what I experience can be understood not as a quality of the landscape in and of itself, nor what I project onto it, but rather qualities that are co-formed between myself, the wind, the light, and the landscape I am within, (or watching again on video many hundreds of kilometres away). And despite any similarities between what other humans and I might see, how we are affected, the thoughts, feelings and impulses that form, what we are drawn toward – our aesthetic experience – will be different.

The border zones, I suggest, are the overlapping edges of forms and constellations of forms, where it is impossible to usefully distinguish between forms, they rather blur. It is curious that the effect of blurring the photograph of the leaves, to illustrate my lack of attention, expresses more accurately this messy, moving intra-play.

One of the most spoken about dichotomies, that is particularly relevant here, is the so-called nature/culture divide. But how do we speak of nature and culture without dividing them. What happens in-between them?

The industrial forms protected within the landscape are registered as cultural heritage, but the wider landscape is not recognised within the natural heritage framework (which is kept separate). This could be critically described as an example of a "culturalistic" view and a "symbolic ordering of space" (Ingold, 1993) driven by a belief in human exceptionalism and progress.

In a world formed of edges, however, the urban, the rural and the natural are perhaps better imagined as varying constellations of overlapping, moving and stoic forms made from the same basic stuff. As with all "our" modernist dualities, the world does not distinguish between what is natural and what is cultural. A city, as such, is

no less natural than a forest from a more-than-human perspective, the two rather blur at the edges merging into one another.

This "humanist project" (Braidotti, 2017) to dominate and make the more-than-human other than "us", which reinforces a self-understanding of ourselves as somehow distinct and separate from nature, is queered by the appearance of the border zones found in post-industrial landscapes.

Concrete

Concrete is, in many ways, industrialisations (attempted) boundary-making material legacy, a monument to and "technofossil" (Zalasiewicz, Williams, Waters, Barnosky, & Haff, 2014) of the paving over of our causal entanglements with the world. Helping to form many of the most valued and cared for forms within the World Heritage site, including buildings, dams, bridges, and riverbanks, as well as newly built attractions.

While concrete-like materials can be found as far back as the Mayan Empire and Nabataean traders of the 4th Century BC, it is with the forming of Portland cement in the middle of the 19th Century that concrete became a defining composition of the modern humanist industrial project and its enduring forms. Consisting primarily of calcium oxide extracted from limestone, formed from the fossilised remains of plants and animals, mixed with silicon dioxide, aluminium oxide, iron oxide and bauxite—containing hydrated aluminium. A production process that produces its weight again in CO_2. [33]

[33] https://www.britannica.com/technology/cement-building-material/History-of-cement & https://www.sciencedirect.com/topics/materials-science/portland-cement (retrieved 19.03.22)

It acts as both a symbolic representation of the man-nature split in durable material form, as well as an example of the fallacy of such a way of thinking. Showing – clearly – the continuum of life (bone to rock, metal, water, and air) that underpins the viability of urban living and development. The split is only made believable by our limited view of time, the speed with which concrete can be produced minus the rate of ruination, and the notion of man-made objects as somehow outside of nature.

Despite its malleability, a characteristic feature of concrete, as it has appeared, are straight lines, clean edges and angles joined by an expanse of homogenous grey smoothness. It is said that nature does not produce straight lines, weaving rather in a synergetic dance. But such a view reopens the duality we have just closed. If we are to accept humans back into nature, then they are, among other things, the straight-line and concrete-producing arm of nature (the world).

At a time when urban greening is being promoted from a design perspective as a social and ecological good, images of unplanned and uncontrolled nature, often in former industrial areas, represent too many the wrong type of greening, as Edensor illustrated. Where these wild edges evoke a sense of loss and decline, a sickness at the

heart of the progress industrialisation promised. Combined with the pop-culture storying of dystopic streets, where nature, crime and poverty have taken over, and robo-cops seem the only solution.

This wildness, which we prefer to visit out there or hang up as a "naturalistic" backdrop to our cultural lives (Ingold, 1993), is not where it is meant to be. No longer held back by the concrete boundaries, lawnmowers or state-employed pesticide distributors, suddenly, it is growing around our feet, tripping up the ideas of where we thought we were headed, challenging our position as kingpin world makers.

How images of overgrown train tracks, cracked concrete and collapsing buildings are experienced depends on the perspective of the viewer, as I have discovered when showing my images and films. While for some viewing them evokes bodily sensations of loss and decline, others see hope, a rewilding and renewal in an otherwise "paved over and poisoned" landscape, unsettling the colonial mindset (R Solnit, 2007). For others still, it is dismissed as aesthetics, with photographs of decay, so-called "ruin

porn", increasingly popular on social media and in blogs and coffee table books (Millington, 2013).

Trends like No Mow May and campaigns promoting the protection of biodiversity and habitats for insects, including bees, have seen a change within some urban areas. It is increasingly common, for example on university and public land, to see dandelions flourish in spring and meadows of wild grasses later in summer, where there were neatly (robo-) mowed lawns before.

However, through these cracks and trends, concrete endures. As with many other forms symbolic of the industrial period, concrete did not exist prior to humans. It was co-formed between humans and the qualities of which it is composed. And not wanting to reopen the duality between human culture and nature, I refrain from calling such forms unnatural or artificial. It is an example of what Braidotti calls "zoe/geo/techno", a form which embodies the continuum of the biological, geological, and technological that constitutes the posthuman condition. And what Jan Zalasiewicz (2009; 2014) calls "technofossils", that he suggests will form an enduring legacy of industrial civilisation in the layer of strata now forming, known as the Anthropocene.

While there is no way to directly compare the durability of concrete in the deep future, by analysing geological processes from the deep past, Zalasiewicz suggests that traces of most human cities will remain within the strata in 100 million years. Providing (if they can be found) a rich source of fossils, including fragile imprints of concrete, for future geologists to "interpret and misinterpret" as they attempt to understand who we were (2009, pp. 173-189). In the shorter term though, over the next 10,000 years or so, concrete will remain a durable inheritance of industrial societies.

Crossing a bridge into the industrial park in Rjukan, I can hear groups of young people calling out.

"Has anyone found eighteen?" shouts a boy.

"Yes, eighteen is here", a distant voice replies.

The valley is cloaked in drifting fog, lingering in amongst the trees and cracks of the mountainside. Dotted about are laminated A4 posters hung by pieces of string.

I try to follow the voices in amongst the buildings of brick and concrete.

I find number 18, "Arbeider og Slusk", information about the worker health and safety laws and how it was different back then, and multiple-choice questions.

There is a photo of nineteen men, in working clothes, in the middle sits one woman.

It is quiet here. The odd shout from a school student echoes around, calling attention to another poster, they are moving in groups of three or four, but I can never seem to find them, always remaining at a distance from me.

A truck passes, hissing through the puddles.

An old fire station stands empty, neither a fire station, nor a museum, nor a ruin, just waiting.

I climb up some steps to the top of a concrete wall, running parallel with the last row of buildings before the valley starts getting steep.

A grey line holding back the forest.

Behind is a dirt road formed from tyre tracks with grass growing in between.

Looking down at the backs of the buildings there are piles of different industrial forms, like in the museum.

Old machine parts, tools, tables, tubes, and pipes, but coarse and dirty, some set in concrete slabs.

All piled up on pallets in the open air, but kept out of the rain by an overhang from the building.

Through some trees, I see a new school group get off a bus and gather for further instructions, talking and animated.

There are pieces of rusted metal strewn along the edge of the road and the forest, some poles with a disc at the end and then a small spike, like a thick heavy ski pole. Another looks like a giant old-fashioned sewing spool, set into a block of concrete covered completely with moss.

The road goes over a channel that has been formed in the mountainside, it is lined with carefully stacked square stones, disappearing under the road.

It is very still here, but the voices of the school children shouting can still be heard if I listen carefully.

This unauthorised greening shows another way to process and remember the past, situate the present and imagine the future (DeSilvey, 2017b). Not only as a story of loss and decline, of the failings of the industrial dream, nor the heroic identity-building narrative of human exceptionalism and progress, told from enclosed bubbles of preservation. But what Anna Tsing (2015) calls a "third nature" or the "possibility of life in capitalist ruins", found most vibrantly within the edges, where concrete is absorbed back into the forest. Here we experience the dance of movement that forms forms, a bodily-discursive intra-play prior to language that re-entangles the world, or

rather us in it. And in so doing forms new conditions, of leaves, shade, moisture, and habitats. An attentiveness to this opens for the possibility of a collaborative movement into the future, a reconsidering of how we develop and a curiosity toward the hidden potential such collaborations could release.

Rust

I was told about some old tracks one day by Eivind, at a gathering of Rjukanbanens venner (Rjukan´s train line friends). A volunteer group I had heard about the year before, who help to maintain the trains and tracks up from Mæl. They were there preparing for the yearly river walk the next day, my second, which is one of the few days in the year the trains still run.

As we were wrapping up, I had mentioned that I had been trying to find traces of the old tracks up to Vemork that day, that I had seen fade away outside the museum. He told me that most of them had been removed, but that there were some forgotten

micro-tracks even further up in the forest from the beginning of the industrial period, when they had built the tunnels for the Såheim power station. I didn´t have any more information, but I set out to see what I could find the next day.

Climbing up the from Såheim power station.
My breath becomes heavy, the landscape is steep, even with the path taking wide swings.
I hear the sounds from Rjukan in the distance, of cars, or the river perhaps. It is not always easy to tell the difference.
The bird sounds I heard when I started out have fallen silent now.
I come to a fork in the path, one-way more directly up toward the mountain, the other, which I follow, a tractor road bearing left before narrowing and flattening out.
At various points, I find old, rusted bits of metal piled up along the edge of the path. It is not obvious what they are or were, thin metal strips and chains with large hooks.
Further along are some pieces of track, smaller and thinner than a modern rail track or the ones found further down.
All different lengths, strewn into the woods, some sticking up, some bent and buried under bushes, shrubs, and grass.
I move in closer,
the surface is eroded and crisp with bright shades of reddish orange. Flakes of rust like the scales of a snake, coarse and sharp,
I pick at one, and it peels off easily.
A taste forms in my mouth, like when you lick a battery.
I continue further and come to a larger open area, a semi-circle of small tracks stands intact. Thin like the others but not rusted in the same way.

Set into the undergrowth, almost disappearing at one point amongst the grass and nettles, they are held off the ground by thick blocks of wood, some solid, some thinned away over time.

The tracks themselves are joined together by nuts and bolts and held down by heavy nails driven into the wood. The edges of the nails, thinned, hardened and sharp, cling to the tracks with a sense of desperation.

They circle around before disappearing into two parallel tunnels in the mountainside, no more than ten meters apart. One has a brick arch with a smooth dome-shape over the entrance. The other is rougher, hand carved into the rock face. Danger signs hang in the entrances where, after a short stretch, the tracks disappear underneath a door.

The entrance to the tunnel on the right is overgrown and harder to reach, the tunnel to the left is more open and appears to be maintained. To the side of the tracks the tunnel shelters wooden materials, a step ladder and buckets, and some snow shovels hang on the wall.

It had been raining heavily in the days prior, and the bare rock face is green and dripping wet. The grass hangs heavy with moisture. Bird song sounds around me again now, and even though I am further away, the sounds of Rjukan seem louder as they echo and ripple up the valley side.

The path ends here, beyond is overgrown with young trees.

Encounters with rust were a frequent feature when moving within the landscape, suddenly appearing, particularly around the industrial parks and along the edges of the more official heritaging. The shades of orange and red and the variety of textures and stages became, for me, symbolic of a heritaging of industry underway within the landscape.

Then, bringing those experiences with me into the museum, rust became noticeable in its absence. The smoother and more visual-centric experiences within the museum, where the shiny black turbines and forms behind glass and hung on walls resisted touch, contrasted with the excitement of searching the woods for hours after rusted traces of the early and mostly forgotten stages of industrial development.

As with concrete, rust was so present that its qualities spoke (so to speak) to the processes of post-industrial becoming. But whereas concrete is only deemed problematic when it ceases to function as it should, when it is neglected, exposing the inside to water, and ice, cracking or overtaken by moss, the colour and texture of rust is in itself seen by many as a symbol of ruination, decay, neglect, and the stories they want to avoid.

This contrast captures something distinct about the phenomenon of industrial heritaging, in comparison with, for example, the heritage of ancient civilisations, where the discovery of rusted metal (a sword or coin) might become international news. Forgetting the temporalities of geology or even civilisations, the heritaging of industry is something that, by any scale, is happening so immediately that it is

overlapping its own unfolding. Without the gap that might make its rust a feature of discovery and fascination rather than an emotional sore to be avoided, it represents instead a "scar", as Anna Storm (2014) would call it, that is all too fresh for many of those who live there.

Rust is a process that effects iron and alloys like steel (that contain iron), where the metal oxidises when exposed to moisture from water or humid air, forming hydroxides. The water molecules penetrate microscopic gaps in the seemingly solid surface of the iron, and once inside, the hydrogen atoms form acids which subsequently expose more of the iron, weakening its structure. This process does not happen in isolation, it is an intra-play of various qualities in-between forms and will continue until either all the iron is eroded, or the metal is cleaned and protected. [34]

If you rub dry rust with your finger, it releases a powder, small particles like sand or sawdust. When wet, the powder forms into a liquid that stains your finger an orangey red. I encountered rust at many different stages, from powdery surfaces, where the forms remained solid and intact, to thin flaking layers that peeled off, the metal becoming thinner and weaker, vanishing as powder and liquid seeping into the ground and beyond my reach. But even though the process of rust ultimately results in it becoming thinner and seemingly disappearing, the initial stage of rust causes an expansion before the erosion as oxides form on the surface. The terms "rusting on"

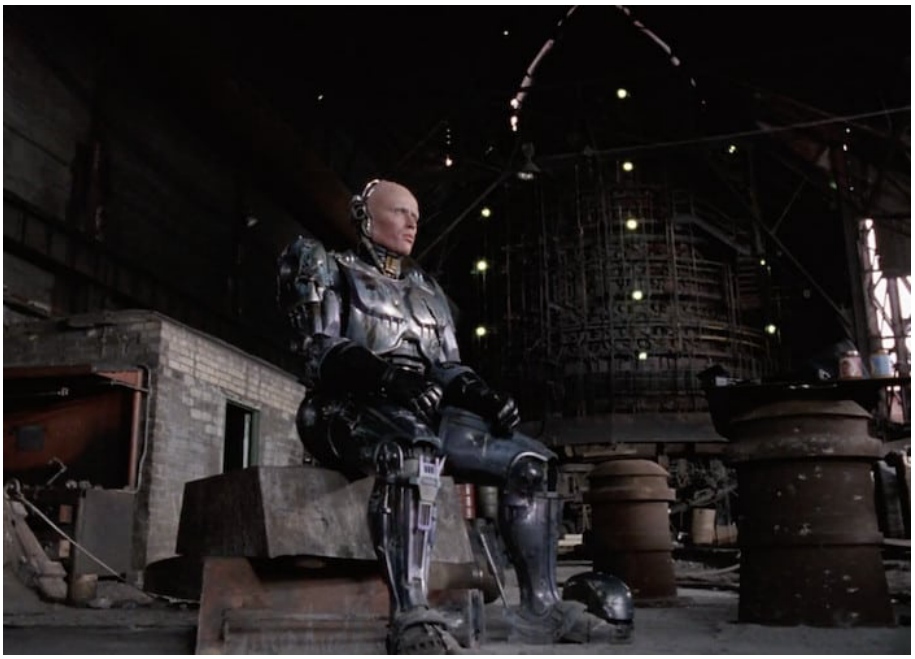
[34] https://www.sciencedirect.com/topics/materials-science/rust (retrieved 25.09.22)

and "rusting off" refer to when, often, a bolt or a nail becomes too rusted to either be removed or screwed back in due to their expansion.[35]

An area in the North-East of America most famous for the decline of the second industrial revolution is commonly known as "the rust belt". An area famous for its steel industry, automotive manufacturing, coal mining and shipping. The deindustrialisation of this rapidly built and highly populated area has been linked to rising crime, erosion of trust in politics, racial tensions, and the breakdown of communities and families as part of a rising individualism (Binelli, 2013; Fukuyama, 2000; R Solnit, 2007).

[35] The terms also suggest a poltical dimension to rust, both in terms of the political aesthetic Edensor and in reference to what were "rusted on" blue collar voters who are now abandoning their parties (Chan, 2018).

The 1987 film Robocop, set in Detroit at the height of these tensions, depicts a near future (now past) where crime and poverty have nearly destroyed "old" Detroit, and an underfunded police force struggles to maintain order. After a robbery, Officer Murphy follows the suspects to an abandoned steelworks where, after searching through the rusted ruins, he is killed by the gang. His body is then used to make an experimental cyborg police officer by the corporation now running the police department, whose real aim is to clear the streets so that the city can be demolished and make way for a new development. He has a shiny titanium shell, resistant to rust and bullets, but soon a moral confliction, brought about by memories intruding from his biological remains, turns him against his creators and to protecting "old" rusty Detroit.



Still image from Robocop, 1987, Orion Pictures.[36]

The scene the film portrays is uncannily similar to Rebecca Solnit´s (2007) description of Detroit today (minus the cyborg cops). Where every time a new

[36] From: https://filmschoolrejects.com/robocop-video-essay/ (retrieved 29.09.22)

building goes up in the new city, a ruin appears in old downtown, with trees growing along the ledges of some of the high rises. The train station, for example, was built by the same architect as Grand Central station in New York (a national treasure) and whereas:

> Grand Central thrives; this broken building stands alone just beyond the grim silence of Michigan Avenue and only half a mile from the abandoned Tiger Stadium. Rings of cyclone fence forbid exploration. The last train left on January 5, 1988—the day before Epiphany. The building has been so thoroughly gutted that on sunny days the light seems to come through the upper stories as though through a cheese grater; there is little left but concrete and stone. All the windows are smashed out. The copper pipes and wires, I was told, were torn out by the scavengers who harvest material from abandoned buildings around the city and hasten their decay.

Detroit is also famous for its urban greening, both the unplanned spreading of trees, grasses and plants and a rise in community gardens on abandoned lots. This is not meant to romanticise, but it offers an example of the possibilities Anna Tsing (2015) refers to along the rust belt. Rust, as such, depicts industry as something that is passing by and opening space for something new in the future.

The meanings associated with rust are not isolated to any one place, it reaches out as a feature of the industrial decline across the western world, and these wider associations and representations are also a part of the intra-plays that form our emotional responses and identities.

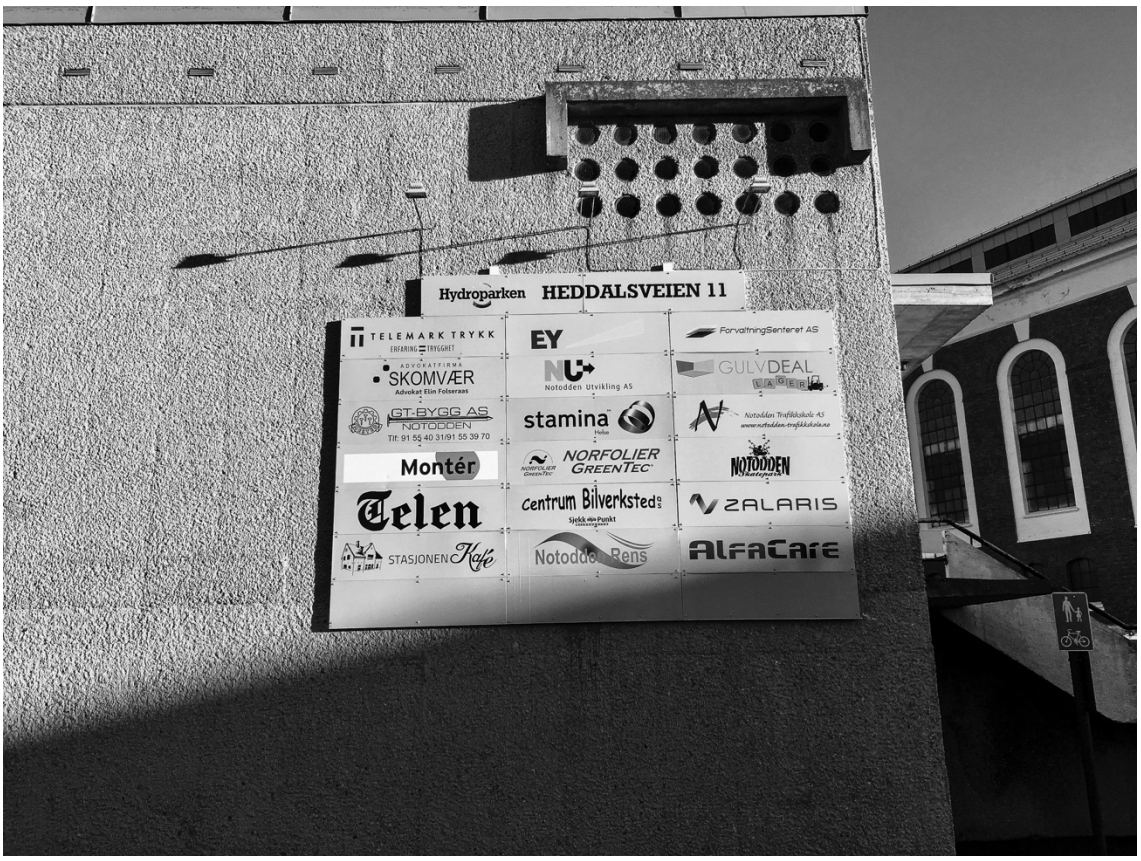
Shadows

My initial encounter with the world heritage site (described earlier) was an attentive wandering within Hydroparken in Notodden. Those encounters helped form the onto-methodological concept of intra-play, but it was shadows that played a central role in how I moved.

The day I visited Notodden happened to be a sunny day, the low winter sun struck every form in its path, and together they formed sharp, clear shadows that caused the landscape to lean over. I too was formed into shadow, this other me stretching out into my periphery, beckoning me towards it. On another day with clouds or rain or the higher summer sun, I would have perhaps been led along a different path. That day, however, two sides of the area were revealed, the light side and the shadow side, that were not separate but connected.

Shadows are formed when light waves become blocked, forming a two-dimensional silhouette of the blocking form. The length and speed of a shadow are determined by the distance between the light source and the form blocking it, and its shape is altered again by the surface on which it forms. Without light there would be no shadow. But shadows are what give forms their visual definition. As light strikes a surface, its appearance is revealed by how it responds to light. A surface that reflects or absorbs light too much might disguise or obscure definition, becoming too bright to look at or too opaque to really see. The definition that reveals the qualities and

textures of a form is an intra-play between light and shadow across a surface and, in turn, our sensory interpretation. Photography and film deal with this, they are shadow arts, capturing the definitions of blocked light.



I was drawn to the shadows. I chose to walk into the shadows instead of the sunlight, in part because I was seeking out hidden qualities and forms of becoming. This path led me to the edge of the area, to what I would instinctively call the back of the area, but it could be called north, or shade or something else. Opposed to the light, south, front side, the side of human activity, of pruned trees and mown lawns, a more edible aesthetic. Two sides so different, yet inseparable, formed of one another like the path.


WAKE UP!
SPRAY BOYS
VANDALISM
MAZE

It was the train carriages that captured this most clearly. On the front, light-facing side was a painted logo promoting the annual blues festival. The rest of the carriage was coated in a worn red paint, but it was clean, the ground around it kept clear of trees and grass. On the back, or shadow side, the carriages were covered with graffiti, the windows were smashed in, and bottles lay on the ground by the tracks. Trees grew freely in amongst the carriages, intra-playing and forming together. In the summer, the backs of the carriages were kept in shade again by the leaves of the trees, and shade is not passive; it acts, trapping moisture and accelerating processes of decay, as with the mountainsides and the rust. Here the surface of the carriages was changing more rapidly than the front. Paint peeling, wood rotting, metal thinning and flaking, and lichen and moss flourishing.

The carriages do not represent one form, or one set of relations. It was not front or back, remembered or forgotten but formed of both, all at once. There were traces of official and unofficial use, preservation and decay, nature and culture, together intra-playing and forming a path through time.

Tonight is the annual river walk in Rjukan.
The sound of the river can be heard flowing again, runoff from the power stations and accumulated rain and snow melt from the mountains.
There is the sound of spray from passing cars. Behind me some birds chirp in the trees along the edge of the valley side.
Across the river, in the industrial area, some sort of machine is moving around, clattering and humming.
It is dusk, the sky is cooling, and the daylight is slipping out of the valley.
I walk along the river toward where, I have been told, one of the old trains will take people for a ride.
Candles every few meters light the way. Here and there, people are setting up a display or preparing a performance.

Next to the train track a small group of people gather, and more trickle in from all directions.
A train appears from behind some trees to the right, its horn blows as it nears, and it rumbles and hisses to a stop.

The conductor, Knut, is dressed in a conductor's uniform.
He´s not a Rjukan Boy, he told me once, but calls himself one anyway as he has lived here for forty years. Working on the trains until they closed, then, after some years away, as a volunteer and for the museum.
On board, the seating is organised into booths. Maroon leather benches with upright backs, the leather pinned down into three cushioned bulges, with space for three or four people on each side.
Above the seats are baggage racks made from strips of finely polished wood laid side by side.
The walls and window frames are a dark polished wood. There is a large window between each set of seats, and unlit lanterns hang on the wall.
It is murky inside, outside the light has turned a frosty blue, and the carriage is only lit by a single light bulb at either end, which casts a shadow through the baggage racks, spreading down the walls and across the seats.
A child announces that "now we are leaving", and imitates the sound of a train whistle "choo choo". Knut chats with people in the carriage, the mood is good.
The carriage rattles and begins to move. I am acutely aware that we are moving within a landscape, unlike on a modern train.
It is a short trip, along the river, through a tunnel, coming out at the train station in Hydroparken.

It is almost dark now, and two men greet us as we disembark. They are dressed in old worker´s clothing and black fedoras, their faces are muddied with face paint, carrying sledgehammers and a lantern.

The light from the candles cuts a path through the shadows, around the next building and towards the industrial park.

A girl is performing a solo dance, dressed in a white ballerina outfit, lit by a neon purple light.

The valley sides and mountains behind are a deep blue colour now.

I continue to follow the candles and soon hear some music up ahead, saxophone and piano.

The loading gate to one of the industrial buildings is half open, and underneath sit two ladies. On the wall next to the gate is the projected image of a couple dancing in silhouette. Music is coming from a speaker. The two ladies behind the desk are chatting.

They are selling woollen sitting mats they have woven, but they are also (really) here with information about Rjukanbanens venner.

Currently, the train runs from Rjukan and down to the shores of lake Tinnsjå at Mæl, but they hope this can be expanded to include a boat ride in the future. They work on restoring, painting, and oiling the carriages. The track has been extended to a storage building so that the trains can be kept out of the rain and worked on undercover. One of them grew up here, and the other moved here later, but both have been a part of the organisation for many years.

I wish them well and continue following the candles.

It is dark now, and the mountains form black silhouettes against the deep blue sky. It is still all around, only the distant sound of the river gently passing, then the music from the film starts up again behind me.

Next to the bridge is a gazebo, a fire is going, and a generator is humming. A man calls out, "would you like a toddy, warm toddy?", "is it a real toddy," I ask, "yes, without alcohol," he says, "that´s not a real toddy", I reply, "no no", he laughs, "warm squash (saft)" he offers me a biscuit too.

I continue over the bridge. The river is flowing quite quickly now. A little way down the road is a building called Rjukan Varelager (warehouse), now run by two artists.

They opened the café for the first time today. Selling pancakes, coffee, and soft drinks. Some people wander in, others just look through the window.

The record player plays afro-cuban music. It has an urban feel, with second-hand tables and chairs, a wooden piano creates a breaker at one end, and a fish tank another. There are green plants dotted about, a bar made from old books and a play corner for children. In the middle of the room there is a counter where they are making the pancakes.

People are sitting around some of the tables, a group of kids are gathered playing Looping Louie.

At the far end is an exhibit, hung fabrics, backlit, with patterns inspired by the area. Behind them, on one side, is a workspace with art equipment, tables and general clutter put out of sight.

I head out to walk along the river again.

The mountains have disappeared into the darkness now. I follow the candles flickering in the breeze.

Some young girls dressed in neon-lit butterfly suits are running and dancing on an opening of grass. There are various sculptures and displays by local artists, glassware, a water feature, dreamcatchers hanging from trees, and a light show is projected under a bridge.

A group of teenagers run past laughing.

A crowd has gathered where some children are performing a choreographed dance.

A gentle wind is blowing droplets of rain out of the darkness.

Although shadows usually refer to a phenomenon of light and how this effects the visual textures of the world we encounter, it can also be used when referring to other phenomena. Such as acoustic shadow where, as with light, audio waves are prevented from passing another form. Or rain shadows, such as an area of arid land behind a mountain range that absorbs most of the precipitation.

Post-industrial landscapes can themselves be described as examples of shadows, or "shadow places", as Val Plumwood (2008) described, where the ecological, social and cultural consequence of our consumer-driven economies on "other" landscapes elude our attention. These places are more easily abandoned and degraded because nobody is watching, at least nobody with a voice in the global economy.

The Rjukan-Notodden area can be understood as a shadow place where, as the industrial period passed, energy continued to be sent out from the valleys to other towns and cities, building and powering modern life (as Solnit found with old Detroit) while leaving the riverbeds dry and communities of people from the industrial period a splintered sense of identity. And while places and identities always change, of course, it is perhaps the speed with which this occurred and continues to occur in the post-industrial global economy that causes trauma. Where ways of living do not even last one working life anymore.

Rjukan is famously barren of sun, positioned quite literally in the shadow of a mountain. Shade and darkness are features that are ever-present. A gondola was built in 1929 so that the workers might have access to sunshine. And more recently, a giant mirror has been installed on top of the valley to reflect the sunlight onto the town square, which is said to have been a plan of Sam Eydes back then.

When speaking to Knut, he said that now he´s getting older, it's a bit sad when the sun is gone, but people here are used to it; he feels "safe between the mountains".

Down in the valley, the sun struggles continuously with the horizon, never quite appearing.
I take the gondola out of the shadows and up to the top of the mountainside.
The sun just makes it above the horizon.
Looking across the valley, Vemork appears as a dot in amongst the forest of pine and birch that cloak the mountains.
And Rjukan, a long thin town that never strays far from the river, it meanders along the valley floor before disappearing around a bend.

The tops of the valleys are dusted with snow, and the peaks disappear into low clouds.
Streams and rivers run, cutting through the trees and over the bare mountain face. Areas of forest above the town are kept open by spoils of stone and rock.

Arrows point to several walks, an adventure trail including platforms hung between the trees, and another to see the sun mirror. There is a lavvo and an earth fire crackling softly beside it, warming the frosty air around.
It fills the sky with smoke and through it are the silhouettes of people jumping between the platforms in the tree line.
The sounds up here disappear more quickly, straining to cover the distance, as if they simply jump over the edge.

Here in Rjukan, we find a place in the shadow of a mountain, but also in the shadow of an industry that has passed by, which, in recent decades, has been primarily a process of extraction, and the social and ecological consequences of this. But such shadow places, it could be argued, have shadow places of their own in the age of heritage. Where the lost, forgotten and hidden forms of becoming are airbrushed out of sight, kept in the shadows of official heritaging, as part of an "economy of attention" (Waldenfels, 2011, p. 68). However, as I have suggested, these two sides are not separate, as heritaging processes are not only about which "objects" are preserved and valued, or the stories told but is also a process of that which is not valued and the stories not told, the official heritage is also formed and defined by that which is considered not heritage, suggesting that in order to understand what is becoming within the landscape, we need to explore the edges, where we might see what is under the surface of these processes. Something evoked by one final encounter of shadows.

I follow a winding road along the contours of the Lake Møsvatn peninsula.
The road ends at what would be the middle of the lake if the peninsula was not here.
The road opens out into a large car park. There are no markings, the tarmac is breaking up leaving an area of dusty rocky earth, the grass is kept down by car tyres.

Surrounding this are several buildings, spread out, some lined with garage doors, others more like warehouses, and a small black building facing the water with an information board on the back.

It is a pale red with Møsstrondbygdelag 2006 carved into the top.

There are a few posters about local activities, ice scooter information and cabin land for sale, plus a bus timetable. A sign above states that the harbour is reserved for permanent residents only.

A short walk from the car park is a small cove composed of coarse sand, pebbles of various sizes and partly submerged rocks.

The middle of the cove is beach-like, mostly sand and small pebbles. There are these tufts dotted around the beach, like islands without water, small clusters of soil, moss, and grasses, with silver-leaved shrubs growing on top.

The rocks increase in numbers further along the peninsula.

It is calm next to the water, away from the strong winds up above.

What wind there is forms rippling waves that reflect a silvery blue, causing the grasses and shrubs along the edges to shimmer with a double movement.
Both the forms and their rippled reflections dancing together.
A few meters from the shore, a large rock sits half submerged, casting a shadow over the water in front.
Rather the concealing though, the shadow breaks through the shimmering surface, forming a window into the lake, revealing the sand and stones below.

The Alien

One final port of call for encircling what the edge might be, and why it might be meaningful for understanding what it is we encounter when researching processes of becoming and heritaging, is the idea of the alien or alienness.

The alien is a term that feeds into many emotions and reactions and is often connected, both etymologically and associatively, to terms like the stranger, the foreigner, or the other. But while those terms are often used in reference to what is different or separate in a specific way, even if they are not really (the other is othered *by* or the stranger is strange *to* someone or something, rather than in and of itself), the alien remains a mystery. This is a distinction Bernhard Waldenfels (2011) makes, where the alien, he says, does not reside in one form or the other but is rather formed of both, not as a distinct third, but an experiential disturbance or uncertainty. Our sense of self and the autonomy of our intentions are challenged. Within these alien edges, as Merleau Ponty put it, "wild spaces" are opened inside us and in our cultures.

Examples of edges and this disturbance are literally everywhere. The shoreline of the lake, for example, where the level of the water is always in flux with the rhythms of the rainfall, wind, and the opening of the dam. The sand, rocks, plants, and drifting matter that form this alien space are sometimes part of the land and dry, and sometimes a part of the lake, immersed. It is neither land nor lake but formed of both. The forms themselves are negotiated through this movement. The turrets of sand and mud around the roots of the grasses become islands as the water level rises, where shrubs flourish, and the rocks are smoothed and weathered into pebbles. Then there are the forms that live alongside, the animals, birds, insects, fish, the humans, and the boats, moving in a sort of dance within the edge.

Equally, the edges of the path, where the so-called non-path forms are what give the path its definition, making the traces of former movement visible. Or the train carriage, which is not simply an environment hosting "others" but becoming something else. This change, this forming, happening at the level of oxides and hydroxides of iron, oxygen, moisture, lichen, and wood fungi, are "world-making" intra-plays inseparable from the multiple layers around it and before it.

Seed, leaf, tree, fauna, insect, birds, calcium carbonate, seashells, coral, algae, concrete, steel, energy, transportation, globalisation, budget cuts, economic decline, rust, dust, and the blues.

The alien edge shows us that nothing is quite what it was, nor is it what it is becoming (even though forms may perform certain functions within a particular constellation over a period of time), nothing is certain. On my final visit to Notodden, I went first to visit the train carriages, as I always did. This time though, the carriages had been removed, and the trees cut away.

The edge is the alien, neither one nor another but more than simply the in-between. The in-between can sound neutral, but this is a contested zone, where the qualities and characteristics of the alien are continually being negotiated and fought over through the intra-plays that form it, where what is forming remains unclear, uncertain, and fragile. This is similar to what Anna Tsing (2012, 2015) calls the "latent commons", which reflects not a romantic notion but the overgrown and "unruly" edges, full of *secrets* and the possibilities for the kinds of messy collaborations needed to make the world work. This is not smooth, though; as I have illustrated, collaboration "means working across difference, which leads to contamination", which can be uncomfortable and upsetting, but "without collaboration, we all die"

(A. L. Tsing, 2015, p. 28). The world, or the landscape (as I am using it), is as such held together, moved, and continuously formed through the alien edges, that is, the movement, qualities, and responses of forms intra-playing. And these edges go "all the way down" through spatial and temporal scales (Haraway, 2016, p. 33).

This notion of the alien also applies to us; as researchers, visitors, or inhabitants, we cannot exclude ourselves. As a human is also a collaborative assemblage (A. L. Tsing, 2015) of more-than-human forms we call human, held in place by the forces around it, holding it down, holding it together, hydrating, dehydrating, passing through it, forming it. It is not that we observe the alien, the alien edge is formed through us within the encounter, where it is not quite clear what is what. The alien is not just me, but it is not objective. My movements, how I am affected, the images, thoughts, references, and metaphors that form, the colours and tones, the choices I make, the text I write, none of it is just me. And although this is fairly obvious on one level, it is also uncanny and unclear, as our methods, questions and interpretations become contaminated too by this process.

It feels, sometimes, like a lot of fuss and effort, it gets confusing, and it is easy to get sucked back into the human analytical mode, asking what it is again? But if we are talking about giving a "voice" or attuning ourselves to the more-than-human world, then it should be clear from the outset that this will not necessarily produce facts ("factoids") that seem politically and economically "useful". It will not tell us how much of the world can be chopped down, ignored or forgotten while still achieving certain data points. And from a sustainability perspective, rather than (as is often portrayed) a vulnerable nature in need of our protection, the intra-play of forms within the alien edges I experienced, suggests a more-than-human world that is instead waiting stoically to clean up after us, where the possibility of something new always exists.

Sustainability, as such, does not mean imposing a rights-of-nature as something separate from culture or as a performative political add-on, but, as Tsing argues, an ethics of collaborative survival that, of concern to us, includes our own. Such an ethic

starts perhaps with the act of making visible and taking seriously what the world we are formed of is doing and becoming too, allowing the complex wildness to entangle us once again. The world is doing things. If we pay attention, we can learn a great deal about collaboration, temporality, toxicity and beauty, about how to live *in* the world again and move forward together with the othering forms and the alien edges that underpin our existence.

To open to this alienness is to open to the infinite potential forms, and the landscapes they form, contain. The concept of alienness reveals this inherent potential to become more than they are in any particular context, to mean more than they mean to us. We do not get to pick and choose, as "humans are never fully in control" (A. L. Tsing, 2015, p. 255). The other forms become a part of us through the alienness of intra-play. Forms are freed from their object-ness to take on new roles in new constellations, both materially and in terms of forming new understandings and meanings. Tangibly and intangibly together.

The edges of post-industrial and abandoned areas provide a particularly rich source for such experiences, where the intra-play of forms unfolds, from a more-than-human perspective, outside of a particular political/class aesthetic, challenging understandings of authenticity and preservation that seek to somehow isolate forms from this movement through time. But this is only one side. Equally, the "authorised" heritaging of traces from the past are also processes of becoming where in museums, for example, and from an intra-play perspective, such encounters can be experienced as equally alien.

This inclusion suggests a more-than-human heritaging that does not distinguish between the official human-centric processes and the forgotten or silenced shadows and edges. All are simply part of the heritaging underway within landscapes.

ECHOES

Sound

I am writing this at a cabin. Far away from the Rjukan-Notodden World Heritage Site, but thinking and reflecting back, listening to the sounds of the landscape and my movements within it. About how sounds move us, direct us, and how we experience them as a method.

I go out and listen. I hear my breath, the wind, the water running off the roof as the snow melts, the generator rumbling.
I follow the sound of water dripping, it has bored a hole in the snow and the grass beneath is now visible. Water splashes out from a large puddle that has formed in the middle.
I step off the deck and my feet go deep into the snow, deeper than they did yesterday. My footsteps are heavier, walking is harder,
I crunch a path.
I walk to the back of the cabin toward the generator. The sound gets louder and louder, a mechanical and steady sound, with sudden shudders and surges. Drowning out every other sound as I stand next to it, even my crunching footsteps.
I turn it off.
Suddenly the landscape of sounds opens, first like silence, but my ears adjust. I hear the wind rustling the branches of the trees in an unpredictable rhythm of gusts and dips, then moments of calm.
The wind picks up again.
Tools hanging on the side of the cabin rattle.

I scramble up the side of a large rock, it is slippery, and my feet scratch to find a grip. I stand on top and listen.

My breath, the wind, a tapping, a metal tapping sound from the serrated sheets of tin roofing covering some timber. The roofing has been tied down with metal wire but still moves when the wind blows hard enough.

The sound of water running in the distance drifts past me.

As I get closer, the sound gets louder. I see water running into a little stream, dripping down from under the moss and rocks in the mountainside. A small cave and pool have formed here over the years.

The sound starts to dominate. Then as I get closer it is all I can hear. No wind, no tapping metal roofing, no breath.

The sound of melting water silences the wider landscape of sounds.

You know it is the sound of spring,

provided you have heard spring before.

First, we become aware of ourselves, our breath, quiet or heavy depending on how we have been moving and if the terrain is steep or flat. Through this, we are made aware that it is us who is here, moving, sensing, and perceiving.

Then any sounds of our movements, the rustling of our jackets, a branch as we brush past it, the sound of our foot pressing into the wet mud forming a visible trace of our movement, "I was here". There are the sounds that are triggered or stopped by our movements, the birds moving from one tree to the next, the person who pauses their conversation as we pass by. These remind us that we are not only here but that we have an effect, and that those effects create traces that continue on after we have gone and may be continued by those who come after us.

Then there are the sounds of the wider landscape we are a part of. The wind blowing through a cluster of trees, a train passing through a valley, a distant waterfall or motorway, the drip of melting snow from the roof. The forces and movements of wind and water do not have sounds in and of themselves, we can feel them against

our skin, but the rustling of leaves, the whistling of the chimney, or the pattering of rocks alert us to their presence, their sound is formed together with the other forms they meet.

This landscape of sound is a performance in time, of the countless movements and intra-plays that are continually forming and changing the landscape. Some sounds are long, and some are short. Some fade in and out gently, almost imperceptibly, like an aeroplane passing high overhead. Others are abrupt, like 1960s batman –KAPOW, BIFF, ZLONK, WHAM. Some sounds drift across your path as the wind changes direction, or as you cross their path, and some must be sought out. Others still are beyond what our human ears or even our technologies can detect. Then there are dominant sounds that, if you get too close, become a monologue silencing everything else.

Listening within a landscape draws you immediately and unwittingly into the haptic, sensory world you are a part of. What you hear is the consequence of movements, and movement is the consequence of intra-playing forms. What is (and isn´t) moving, what can and cannot be heard and what forms are intra-playing with one another. Sound is the experiential appearance of a place moving in time.

For R. Murray Schafer (1994) the soundscape is our ever-present "acoustic environment". He asks the question, "what is the relationship between man and the sounds of his environment and what happens when those sounds change" (1994, pp. 3-4). He is particularly concerned by the rapid changes and effects brought on by the industrial revolution.

Listening to the surrounding acoustics there is a sense of a grammar to sound, not a logical structure like in written language, but a rhythm formed of movements, responses, and gaps between and amongst different sounds. There is a relation between the whistling wind and the rattling scythe, but acoustically they are different sounds forming part of a soundscape. They are no longer sequential as in their force relations. They occur simultaneously; their differences combine to form a new sound. As a sound fades or stops it opens for the possibility of new sounds, that may well

have been there all along but are only revealed by this acoustic space. Sounds are then punctuated by what is not sound, or, more precisely, perhaps, quieter or less perceptible sounds waiting to be revealed. Silence is what we cannot hear or detect with our instruments, but there is still sound. Absolute silence is surely death.

Anna Tsing (2015, pp. 23-24) uses the term "polyphony" in a similar way, referring to the musical form where separate sounds combine in moments of harmony and moments of dissonance, a notion she finds speaks to the assemblage of world-making rhythms, "human and not human" that compose a landscape too.

Sound can tell us a lot about what a place is becoming and how it is forming. It disturbs more visual or hylomorphic forms of observation, by refusing to "stay over there", you become encircled. There is a wholeness to the sound of a landscape, but this is neither singular nor composed of separable multitudes. It is a complex and fragmented wholeness, the immediate traces of a becoming landscape. Sound reveals the intra-relatedness of material forms that were explored in the previous section, with overlapping edges that are neither one thing nor the other. The way they move, the way they appear and then fade. How they overlap, at one point dominating and the next fading either quickly or slowly as another sound appears, together forming a new sound. Each sound is formed through an intra-play of different forms brought together. But each sound, moving out over the landscape, crosses, blends, and becomes inseparable from this wider sound, never fixed, never final, never repeated.

There is a knowledge inherent in soundscapes, attuning us to our surroundings. In his critique of industrial sounds, Schafer describes the steady disappearance of sounds of nature and of early rural living not only in terms of a loss, but by the introduction of an entirely different form of sound and a rapid increase in sound levels. The industrial period, he argues, can be characterised as an era of invention. And with each invention came an increase in sound levels and a disappearance of rhythm, that is the rhythm that punctuates, defines, and creates space for other sounds to be heard. The industrial sound is characterised by what he calls "flat line" sounds, a monologue

of ventilators, electric humming, engines, and combine harvesters, a continuous "imperialist" sound that drowns out all else. This imperialist sound, he says, became symbolic of industrial progress and a "calling card" of "Western Man". Further, despite knowledge of the links between deafness and noise being established as early as 1831, it was one of the last "pollutants" to be recognised as a health risk and was not addressed until after 1970 in most industrial countries (1994, pp. 71-80).

Still now, moving around in former industrial areas, the impacts are present in how we experience the soundscape. Walking around in the industrial parks in Rjukan and Notodden, in amongst the industrial structures, it was hard to navigate toward or identify a sound as you might in a forest say. The sounds move around and deceive you, like when I was unable to follow the groups of students, their voices echoed amongst the buildings, but they stayed at a distance, never quite where I thought they would be, a hall of mirrors. Then on entering the museum, the sounds of the wider landscape vanished, and the sounds of the museum could not escape the walls, merging into a homogenous and disorienting hum. This is perhaps particularly true of industrial museums, with their typically high ceilings, metal machines and stone or concrete walls creating a harsh acoustic environment.

Entering the museum at Vemork, the sounds of the wider landscape vanish.
Contained by the thick walls reflecting and echoing every movement.
There are two school groups here, the lady at reception tells me, as part of the area's cultural schoolbag program.
I move into the main engine room.
An enormous room with high ceilings and thick walls, but the sound is hollow.
There is no clear line of sight, finely polished black turbines stacked in rows, the wandering groups of people are only present through their sounds, echoing upward, forming an indistinguishable mash that then gets lost in the ceiling.

The slightest sound of movement fills the space for a moment and then joins this noise hovering above.
The wood, metal grids, tiles and stone
all hold their own audible qualities,
released in response to the uncoordinated movement of feet.
Squeaking trainers, chairs being dragged, each spoken word, all repeat two or three times before being absorbed.
There is a clanking of glasses and hum of a fridge in the cafeteria, the sound of a restaurant dishwasher hisses to life.
Morse code and the voices of actors drift out of the heavy water exhibit.
The main hall is empty now, but the room never rests, as if it has a sound of its own continually reverberating around.
Inside a dormant turbine, a static hum of air swirls.
At the far end of the hall, a third exhibit presents the history of industrialisation here and the journey to becoming a World Heritage site.
Old black and white video footage is projected onto a large wall, people moving around the town, buildings, people waving at the camera, and playing tennis.
Cups, bottles, and dynamite are set into the floor under heavy-duty glass.
Display cases house shovels, rope, a pickaxe, heavy pins and a hammer, there are mannequins dressed in worker gear, both new and old.
All still and steady.
A voice from a transparent plastic dome, like a vintage salon hairdryer, tells a narrative of the area as I stand underneath.
The flooring morphs into train tracks, set into pale cut-off square tiles carefully adjoined by smaller black squares,
scratched and scuffed and cracked.

A new school class of younger children arrive, funnelling out of the central door. A round of clapping erupts in response to the room's echo, talking and laughing, chairs are dragged around, two boys hide behind a cardboard sign, the metal flooring clanks under fast-moving feet.
The teacher sees me with my microphone and tries to quiet down the kids. I signal for her not to worry, "this is why I am here".

I thank the people at the front desk and head outside again, the humming of echoed sound falls away.
Outside I notice the sounds mix and amalgamate too, but in a different way. Here they form a collective sound of the landscape, but their individual qualities remain, instead of morphing into one homogenous noise that dominates all else.
Train tracks, running from the museum toward Rjukan, are set crisscrossing into the surface of the road. I follow them until they fade away. The road continues, more shards of rusty metal embedded in moss-covered rocks litter the edges.
After a while, I come to a locked two-meter-high gate. The fencing continues for some meters up and down the hill on either side. Hanging on the gate is a circle with a red hand inside, and below a sign informs that unauthorised access is forbidden.
To the right, a desire path scrambles up the bank to the edge of the fencing and down the other side.
Then the road carry's on along the side of the valley.

Standing out on a terrace in Rjukan at night, I became aware that the sounds of the wider landscape were clearer. The busy movements of humans and the last remaining sounds of industrial machines had fallen silent revealing new sounds, the birds settling in for the night, the creaking trees moving in the breeze behind me, and the wind

moving between the houses and the river. These sounds, during the day, appear occasionally, with a gust of wind or in a gap in human or machine movement, but really, they are there all along.

By considering the soundscape, I was left with this sense of a *double loss* in former industrial areas. The wider soundscape has, for most of human history, been an important form of knowing between humans and the surrounding landscapes they inhabit (Abram, 1996, pp. 77-86). Revealing if something is changing, if fewer trees are creaking, the river is quieter, or there are less birds than normal, warning of dangers. This is one of the first things that was taken from cultures and people by the industrial revolution, replaced by increasingly mechanistic and imperialist sounds. The first loss.

What happened next, after a place lost its usefulness and the industrial project had moved on, is the noises of industry began to fade. The chugging of trains, the steam from the factory pipes, the clanking and pressing of the machines and the movement and bustle of people. As these noises began to fade and become less frequent, it was experienced as a second loss to those who had become accustomed to them. The return of the sounds of nature, where the river is now silent, the birds are less, and the concrete disorients, is greeted with a sense of sorrow, decline and failure. Not at the loss of nature that has occurred, but at the loss of the sounds of industry, which evaporated as soon as the economy and infrastructure moved on. The sounds of the decline of the surrounding nature would likely not be apparent to many of the people, separated by generations from what had been lost. Rather than seeing the end of industrial life as a recovery of the landscape, it is talked about almost solely as a decline (Birkeland, 2015; Hansen, 2002). The industrial sound had come to embody the security of the lifelong work industrialisation promised.

Places move and change, either slowly or rapidly. As the industry at Rjukan and Notodden moved on it was a turbulent and painful time for many people, as it was across the world in industrial communities (Griffin, 2013; Anna Storm, 2014), which are important stories that deserve to be told. However, my focus here must remain on the landscape as a whole and not prioritise, or more precisely separate, the human

over the other forms that compose the landscape. To the wider landscape of forms, the end of industry could be viewed as a form of rejuvenation, recovery, and new possibilities. It is possible to say this without denying the problems and suffering caused by an economic system that transcends place.

The futures of Rjukan and Notodden are an open question. With its enlistment on the UNESCO world heritage list, there has been a decisive step in moving from industry to the forging of cultural memories. Where stories and selected "objects" form part of an identity building, and more visitors and tourists provide opportunities for some new work and activities around preservation. Such a transition is also a shift from a "place of work and home" to a "place of touristic gazes and visual desires", creating new complex entanglements (Anna Storm, 2014, p. 158) about what is echoed on and what is silenced.

Wind

The wind has appeared several times already within the landscape. Earlier, I used it as both a metaphorical and concrete example of how we can experience intra-play, where the wind is one of the ultimate movers and players. The landscape is enlivened by this movement of air, which can take on so many different speeds, directions, and durations. The wind is also a shaper, of the size and form of trees on a mountaintop, or the stretch and shape of a beach. It carries with it clouds and rain, blows leaves and seeds, hats, plastic bags, and other sounds.

In this section, however, I am concerned with processes of heritaging and specifically with industrial heritage and must therefore consider what industry is from the perceptive of the experiential landscape, and for this, I have found wind to be an interesting metaphor. I am not attempting to understand industry as something in and of itself, what it *is*, but rather gain a sense of industry that is brought about through the experiences of what is becoming within the landscape.

It is perhaps possible to identify certain elements of a logic of industry, even though industrialisation has taken many different forms across a vast array of landscapes, involving a great many different "resources" and energies. In Rjukan and Notodden, the process of industrialisation began with the harnessing (or exploitation) of an energy source, the rivers, producing electric power. Then followed the ordering of space around this energy source to accommodate manufacturing, primarily chemical fertiliser, then houses for workers, and infrastructure to support the people who moved there. Schools, shops, and medical facilities were built, and roads, railways, and ferries were established for the transportation of goods and people, as well as the movement of fertiliser and other products out into the world. As it became possible to transport energy to the coast, along with the global recession after World War One and again after World War Two, the area saw the beginning of a declining population, as people followed work to the coast, and a second wave of migration to America began. After several decades of steadily decreasing activity and increased migration, the area was left with only the traces of industry.

This process embodies a sort of logic that, I suggest, could be revealed by any industrial landscape that has persisted long enough. Something that is captured well by Joseph Schumpeter's (2010) image of a "perineal gale of creative destruction", where industrial history can be viewed as a series of resource discoveries, the building of infrastructure, extraction, invention and then collapse, as new resources and infrastructure or cheaper labour emerge somewhere else to replace it (De Landa, 1997; Perez, 2002).

This image, that the processes and logic of industrialisation are like a storm that blows through a landscape, captures the sense brought about by encounters within the landscape, of what industry is.

Like a storm, industry sweeps through an area, uprooting trees, displacing and transporting matter and sediments, sending things flying, rapidly transforming the landscape before fading and moving on. And, as Schafer described of industrial sounds, it takes on a life of its own, where the logic of industry demands the continual

expansion of machines, output, and industrial noise. It becomes self-perpetuating, as it comes to underpin and facilitate almost every facet of our lives, how we move, how we rest, how we read, how we talk and how we think (De Landa, 1997). This industrial logic is caught up in what Walter Benjamin (in: Bronner & Kellner, 1989) called the "storm of progress", where nobody is really in control.

> A Klee painting named 'Angelus Novus' shows an angel looking as though he is about to move away from something he is fixedly contemplating. His eyes are staring, his mouth is open, his wings are spread. This is how one pictures the angel of history. His face is turned toward the past. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage upon wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing in from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. This storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress.

What is left are forms strewn around the landscape, new constellations of matter that were enlivened by the storm are now without a definite purpose and lie scattered, tangled in amongst the timber of fallen trees. Old tracks and tunnels, buckets, screws, iron, concrete and rubble, factories, homes, shop fronts, statues, and empty lots.

Industrialisation is a word that absorbs much of the spirit of what Braidotti (2017) identifies as a certain type of humanism. Located within a euro-centric "man of reason" that feeds western thinking, that puts human wants and needs at the centre of ethical concerns and the wider surroundings become "marginalised" (Plumwood, 2008).

Industrialisation is a transient movement, a logic fuelled by the congealing of seemingly separate forces and forms in a particular space-time. Rock, energy, terrains, cheap labour, ideas, history, identity, rain patterns, famine, emigration, greed, need all

are "put to work", coalescing briefly in a collaborative harmonic dissonance of toxic beauty before dissipating and moving on.[37] Evaporating, only to reform in a new way in a different space and time.

Industrialisation is a process of the future becoming the past or, more precisely, an idea of the future becoming an emblem of decline. Such landscapes pose a dilemma, in that they are perhaps too young to be left to the heritage experts and processed as the past, too old and out of place to become central again as part of the story of industrial progress and yet to become something else (Ågotnes, 2014; Birkeland, 2017).

Storms bring renewal too. Through their contamination and destruction, they also bring enormous benefits to some, washing sediment to the surface and fertilising the fields, creating space for new growth and activities, and then opening for the possibilities of something new in the future, possibilities that were not there before.

It is summer now. I return to the back of the area in Notodden, to the abandoned train tracks and carriages.

The track is more hidden now by the leaves and long grass that grow around and through it. A tiny new-growth birch is establishing itself in one of the wooden rail ties. The bolt I had dug up is still nestled in its hole.

There is a humming sound of a machine not too far away, traffic passing on the main road, different bird songs overlapping and merging. Rust against rock and green, dried old leaves and twigs, the dust of smashed cement.

A lorry engine starts up, chains clank against the side of a container.

Out at the farthest edge, beyond an arched stone bridge, a cargo carriage from a train stands in a field, tagged in giant letters from end to end. Only the top of a logo remains from the underlayer, "from door to door".

[37] Similar to what Anna Tsing (2015) calls Polyphonic Assemblage.

Some train tracks cross over a circular turning point and into a painted red building. Along its edges are stacks of metal railing, buckets, boxes, more tagging and rusted drums.

Unseen magpies cackle from the edge of the woods, and the sound of unseen children playing echoes out.

The train track splits suddenly into multiple tracks heading in all directions, back around the industrial park to the train station, and bending in the other direction passed the old station house, which is now a restaurant.

Most of the other tracks come to a dead end.

Weaving my way back through the industrial park hints at more secrets, more threads, and possibilities. A sign in the window of an unmarked building, "old wise and beautiful mc Notodden". Peering through the window is a bar, like an old English pub, with bar stools, benches, and pictures on the walls, but nobody is there and no information either.

In the middle of an open courtyard between the industrial buildings there is a colouration on the floor that stands out. Orange and yellow mostly, with dashes of blue, red, and green, and then a patch of purple. The coloured parts are another layer raised a couple of millimetres on top of the surface of the ground, like islands surrounded by a sea of grey concrete.

The building across from me hisses like a carwash.

Another window is lined with figures and sculptures, a man and a boy rowing, faces, shapes and surfaces, all different textures. A bust carved in limestone sits on top of a rusting metal rod set into stone. Through the window is an artist's workshop, different materials placed about, stacked, broad tables, but nobody and no information can be found.

Then the blue door with the skating stickers again.

I think of Alice in Wonderland and the rabbit hole when I look at it.

A bright blue door with stickers, locked, in the middle of a seemingly unused building.

Paths & Trails

Much of my movement within the landscape came about through walking. Following Rebecca Solnit (2014, p. 13), who says that "exploring the world is one of the best ways of exploring the mind, and walking travels both terrains", I want to consider two different ways of moving I have become aware of through walking within the Rjukan-Notodden heritage landscape.

In the book ´Pathways: Exploring the Routes of a Movement Heritage´ a distinction is made between trails and paths I find useful. Trails reflect a more controlled or curated movement (an 'authorised' movement), where routes are maintained and marked with signs to attract walkers and tourists or promote exercise. And paths are seen as traces of movement either by humans or animals, that appear and disappear more organically (2022, pp. 4-5). This difference can be illustrated in the distinction between a 'public right of way' more prevalent in England, and the 'right to roam' or 'allemansretten' that is more broadly applied in Scandinavia.[38] The former is often presented as a constant battle between public rights of access and private landowners or technical law changes that threaten their closure.[39] The latter

[38]Regjeringen (2021) Allemannsretten https://www.regjeringen.no/no/tema/klima-og-miljo/friluftsliv/innsiktsartikler-friluftsliv/allemannsretten/id2076300/ (accessed 30 Nov. 2021); Government Digital Service (2021) Rights of way and accessing land https://www.gov.uk/right-of-way-open-access-land (accessed 30 Nov. 2021)

[39] Davies, Caroline (2015) Countdown begins to prevent loss of thousands of footpaths and alleyways https://www.theguardian.com/environment/2015/dec/25/countdown-begins-to-prevent-loss-of-thousands-of-footpaths-and-alleyways (accessed 30 Nov. 2021)

represents a broader and more encompassing right to move within the landscape, with only a few exceptions, such as private gardens and fields during crop season.

The changes brought about by the processes of industrialisation have had profound implications on our relationships with the landscapes we inhabit. Moving human life into an ever-expanding urban environment, where working and living shifted more and more inside or underground, severing further those ways of thinking and living that remained from the commons, and an attunement to the rhythms of our surroundings. The release of previously unknown energy sources, the development of technologies and new modes of transportation and movement created enormous benefits and solved urgent problems. At the same time, these developments also created many, often unseen, consequences, most notably the polluting and poisoning of the air, land and water. But equally as important, it has altered how we move in and subsequently interact with and think about the landscapes we inhabit. My experience and encounters within the Rjukan-Notodden site have been formed along the paths and trails that moved me. Both official heritage trails, and new paths that are reconnecting these former industrial areas with the wider landscape again.

Heritage sites are, to a great extent, formed of valued trails as part of a heritage industry directed at tourism and regional identity building. These are predetermined, maintained routes through a region, often involving coaches, that help to shape and curate an authorised understanding and experience of the history, identity, and values of a particular place. Such trails can be understood in terms of a network connecting separate, definable objects that should remain more or less fixed.

My attentive and drift-like approach, however, does not remain along a singular path or trail but is interested in movement more generally and the meaningful pathways that might form through this. As with Tim Ingold's (2015) concept of lines, these paths of meaning can be understood as both the forming of physical traces, however temporary within the landscape, and the effect this movement has on how we think and feel. This could include a gust of wind, the slow growth of a branch on a tree, the

long path of a building through time or the wandering movement of a researcher. All are part of that landscape within particular – yet – overlapping space-times, all are a part of the intra-play and what is forming. For Ingold, places 'are like knots' where lines converge and become entangled in their passing through; places are not enclosed nodes where life unfolds, connected within a network by pathways – it is rather that life is lived along these pathways forming places (Ingold, 2011, p. 149). Suggesting the paths and trails that shaped my movements are not the space between encounters, but the encounter itself. But while Ingold does not speak of lines in a linear sense, there remains, I feel, a certain degree of separateness that differs from what I wish to convey with paths of meaning.

When moving through a landscape, we participate in both a bodily and an emotive exchange with the world around us, causing both effects and affect. Our path is visible through the effects our movement has on other forms. The smell of the pollen released from a kicked flower, a footprint pressed into the mud on a rainy day, the snapping of a branch that had been slowly growing from a tree, the movement and

chatter of birds aware of our presence. As such, rather than a line, our paths are perhaps better understood as the forces of movement that resonate out and are felt by other forms, the effects of which overlap in time and can still be felt within the landscape even after the physical traces have vanished.

Such paths are not only material but also constitute the forming of thoughts, ideas, feelings, memories, and meanings. There is a forming going on inside us as we move. Our thoughts and feelings, for example, do not come from inside us alone, as separate subjects, but are formed within the world around us. A combination of a smell, a texture and a colour may trigger a feeling or emotion, which might later stir a memory, which is itself partly imagination, and then later still a thought or idea may form.[40] Such creative intra-plays are a part of what forms along paths of meaning and reflect a different way of ordering space-time within the landscape, as Olivier suggested. It is not just that these paths are non-linear, they are also nonsequential. The e/affects of our movement are ephemeral, resonating out, merging, blending, fading, and reappearing as new forms at another time. This is an example of where I find the rendering echo to be useful beyond the phenomenon of sound, where the processes of remembering and effect within landscapes can be understood more broadly as that which is echoed on.

Some are repeated and amplified and persist, others fade and are forgotten, but all participate in the forming of the landscape. We could think of the landscape in this sense like a piece of music performed by an orchestra. You cannot grasp or absorb it – as a whole – all at once, and individually the notes played on each instrument lack context, but the experience is held together in its wholeness as a mood or feeling, an ambience. Even though we move through it in a particular order, the meaning that forms, that wholeness, is made up of all the individual parts, the rhythms and repetitions and combinations of moments as they are layered upon one another, we carry the echo of what came earlier into what comes later and together they form our

[40]With reference to Keightley and Pickering´s (2012) notion of Mnemonic Imagination.

meaningful experience of it. And as with music, the pathways and experiences that can be had within a landscape are both unique and potentially infinite.

Such meaningful experiences can form along valued trails too, of course, as we are always sensing, affected bodies, but part of what moving more freely within a landscape opens for is an attentiveness to the other forms making up that space-time with us and a new way of thinking about and viewing heritage as part of a forming landscape, beyond the curated routes and objects. While such an approach does not form a complete historical story that is easily communicated (or represented) in the way walking a valued trail might, it can form a more complex experience, drawing out new and *weird* perspectives of landscapes and what they are becoming, of which those authorised (hi)stories can also become a part.[41] Moving freely within a heritage landscape also includes moving along valued trails and through museums. As such, paths of meaning and the landscape view of heritage do not reflect an either-or critical perspective on valued trails or the heritage industry, but rather an inclusion and enrichment of the experience of them. Here the remembered and the forgotten, valued and discarded, authorised and unauthorised, natural and cultural forms are experienced to be flowing through one another, intra-playing across multiple temporalities and extending beyond the delineated notion of authentic heritage and pre-assigned, authorised values.

I notice a desire path heading up the valley side and decide to follow it. It is steep, I scramble up about twenty-five meters and am out of breath when I eventually reach the top.

It flattens out again.

There is another trodden path heading left and right along the ridge. I go left, heading back in the direction I came from for about two hundred meters.

[41] In reference to ruins, discarded and decaying traces from the path, forgotten heritage, DeSilvey (2017b); DeSilvey and Edensor (2012); Edensor (2005).

The path ends at an opening. There are two newly formed huts which are open at the front, and a fire pen in the middle.

Inside the huts are some nets of firewood, a blackened kettle, a bottle of ketchup and a pile of animal skins. There is a notice that reads that these "gapahukene" were put up by the Rjukan Scouts and can be used by all. There is also a reminder of the rules regarding cleaning up after yourself and when it is forbidden to light a fire. The contact person is Eivind, who I am due to meet the next day at the train dugnad.

Back in the other direction, the path winds its way through some new growth birch growing under the electricity lines before easing down to the road again. Red strips of plastic are tied to branches marking the way.

The road continues for some time, there are old switch boxes leaning over on their post, poles with signals too rusted to decipher.

There are several more waterways and drainage grids and pieces of train track rooted in the earth, standing out at an angle alongside the trees. The road comes to an abrupt stop at a tall gate with a sign that reads "dangerous area, entrance forbidden",

the road continues out of sight towards Vemork.

I walk back to some metal fire stairs I had seen that come out on a bank leading down to the industrial park again.

More train tracks have been thrown over the edge, embedded in the earth, surrounded by moss, leaves and mushrooms.

The artist Richard Long emerged in the space created by early conceptual artists (including John Cage) with his 1967 art piece "A Line Made by Walking".[42] This artwork was part of a growing land art movement considering the temporality of art and the inclusion of the everyday in art and art in the everyday, proposing that walking itself could be considered an artistic practice. The piece was performed in an unknown field where Long, walking back and forth repeatedly, trod a visible straight line into the grass. He photographed it, and this black and white photograph is the only lasting evidence of the intervention. As a self-declared sculptor, his work suggested the idea of walking as an act that sculpts the landscape (Roelstraete, 2010, pp. 5-9), whereby our very movement shapes cultural values and knowledge into the landscape. By not focusing on representing or altering the landscape permanently, though, Long's approach differed from other land artists of the time; he was instead more concerned with experiencing the landscape (Roelstraete, 2010, pp. 18-19).

The landscape is full of such spontaneous interventions in the form of what are often referred to as *desire lines* or *paths*, a term credited to Gaston Bachelard in reference to "the psychological, physical need to get from one place to the next" (Furman, 2012, p. 23). Desire paths *are "*also known as cow paths, pirate paths, social trails, kemonomichi (beast trails), chemins de l'âne (donkey paths), and Olifantenpad (elephant trails)".[43] These are unofficial paths that have formed through the continual, repetitive movements of humans and other animals within a landscape.

Desire paths can be understood as a form of protest or trespass, a movement against a more controlled and designed environment. Such unauthorised movements may represent a shortcut between two unforeseen connections, a desire to reach a particular place or form of interest, or an attempt to get away from surveilled spaces (Luckert, 2013; N. Smith & Walters, 2018). While you can speculate on their origin

[42] Tate (2007) A line made by walking https://www.tate.org.uk/art/artworks/long-a-line-made-by-walking-p07149 (accessed 30 Nov. 2021)

[43] Moor, Robert (2017) Tracing and erasing New Yorks lines of desire https://www.newyorker.com/tech/annals-of-technology/tracing-and-erasing-new-yorks-lines-of-desire (accessed 30 Nov. 2021)

or uses, or try to deduce this from your observations, such lines can also be seen as meaningful forms of embodied knowledge that have formed and been re-formed through movement, between the "affordances" of the landscape and the "response-ability", attention and needs of the wanderer.[44] Following such paths in turn requires an attentiveness to what might unfold; the very act of moving along an unknown path attunes your senses to the world in a different way, making them stand-on-end. There is no map to look at beforehand, no expectation of a new information board appearing around the next bend explaining another part of the story. This "heightened state" we experience draws us into the intra-play of forms, the "living play of forces" that is movement, in a visceral way (Menke & Jackson, 2013). We become aware of our intra-play with the world, by which I mean we are opened to the forms around us. We no longer know what to expect or what will form through our encounters and the landscape becomes mysterious and complex again through this experience, even as it forms meaning. This attunement and sensitivity (and the resulting feelings and moods) we carry with us when our movement continues along a valued trail, through a museum or back onto the bus, providing a wider context to the official route and adding to the layers of meaning, connecting forms of differential becoming that form our whole unique experience.

The future of a desire path is uncertain: they could be the early stages of a valued trail forming, where, once established and popularised, they may be maintained and marked as official routes (a popular technique in architectural planning today).[45] In this sense, they contain the potential for becoming valued heritage trails in the future, a heritage forming. Alternatively, many will fade from view, either from a lack of use or through successful attempts to block or divert this unauthorised movement.

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[44] "Affordance" from Gibson (2014), *The Theory of Affordances*. "Response-ability" from Essay one, Cage, John. *Silence: Lectures and Writings*. 1961. Middletown, CT: Wesleyan University Press.

[45] Turner, Tom (2018) Desire Lines are a key principle in landscape architecture (Accessed: 30 November 2021) http://www.landscapearchitecture.org.uk/desire-lines-key-principle-landscape-architecture/

Everyone simply roaming around the landscape can of course cause a great deal of damage to the other forms there. Moving freely in a landscape, therefore, requires a responsiveness and an ethic of care in how we are moving. As with the right to roam, such movement is only viable alongside a corresponding duty of care that is broadly adhered to. It is not a self-centred desire free from responsibility, and desire paths, in a way, bear witness to this care, in that they remain. People tend to follow a path if it is going in the direction they want, as I did. This indicates a concern to do less harm, but also a recognition of the knowledge and experience paths embody.

You may not be led along a pre-made path all the way though, but again that does not mean your movements are carefree. The reason you move off a trail or a desire path or deer track is because you are drawn towards some other form, or you become directed toward a particular way. To get there or move in that direction requires a "co-respondence" between yourself and the landscape you are within. You would not necessarily move in a straight line (as Long does), and Long's work is far from a straight line conceptually, being strongly rooted in rhizomatic thought, nomadism and (again) Debord's theory of the dérive, or *drift*, that rather reflects a getting off the beaten track (Roelstraete, 2010; M. Smith & Morra, 2006, pp. 77-81).

Moving freely within the landscape is rather about forming a way with the other forms around you, a co-forming. You might consider how the land is shaped, what plants, insects, animals, and bushes there are, what dangers there might be, how other forms might respond to your movements, your direction. Forming such a path can take all sorts of directions and ways of moving, bending under, climbing, or stepping over and squeezing through. You may never be able to find or repeat that path again, or it may open for a new direction that others will later follow, leading to something new.

If we are to move from the idea of heritage as isolated things or objects, as in a defining of what heritage is, toward heritaging as a process through which things become or form and are remembered over time, then the question of how and why we form paths and trails is important. In that sense, the heritage of paths and trails is

not only found in their reforming and maintenance alone but in how new paths are being formed today.

What desire paths show us, and I speak here especially as a researcher, is the possibility to form our own paths, new paths that open for new thoughts, questions, and directions along the way. New paths not only lead us to unexpected places, but they remind us that it is us who is experiencing. As with Long's intervention, there is a desire to make our own paths of meaning in the landscape. Long reminds us of the effect we have when forming our own paths in the landscape, from physical trampling to the effect this can have, through time, on how we and others feel, think, and move, and the remembering this opens for.

Rock

With a collision and concentration of gas and dust some 4.6 billion years ago, the earth and sun were formed. As the planet earth began its long and continuous journey of change, it was (and still is) driven by two forces. The first is the heat and radiation of the sun that warms and batters the surface of the earth, weathering, eroding, and energising the exposed layers of rock, water, and molten lava, the two held in a rhythmical cycle of mutual attraction. The second is the heat of the earth's core, driving the forming of the earth's crust, forging, and disbanding vast mountain chains like the rolling in and out of the tide over geological time. The surface of the earth is always changing and always moving. The Landforms we call Euroasia and America, whose human history of division shapes today's mindscape, will one day be smashed together as a vast mountain range, squeezing the Atlantic Ocean from the map and forming a new supercontinent that has already been named Pangaea Proxima. (Way, Davies, Duarte, & Green, 2021, pp. 20-29)

The names of the different rock types bring forth images of slow-moving creatures, bumping and nudging, clambering over and under one another, merging and absorbing into new forms, combining, and responding through their qualities like

early bacterial life. The heavier harder ones diving under and pushing the other softer lighter ones to the surface.

According to geologists, we live in the Phanerozoic aeon, in the Cenozoic era, in the Quaternary period, in an epoch called the Holocene and an age many now call the Anthropocene. We live through moments, over lifetimes, across generations and within landscapes formed through rock and fire, movement and ice, rain and rivers, all carving and finding their ways in amongst one another. Then there are animals, forests, people, farms, industry, migration, decline and tour buses.

The Caledonian Nappes in Scandinavia, a soft top rock that gives Norway its mountainous terrain, were formed near the Equator over 400 million years ago and have been moving and eroding ever since. It is strange to look at a mountain and to think of it as moving. You can make it move with your imagination, a shimmering hallucination, like the tail of a giant monster breaching the surface of the sea before vanishing again. A trick of the mind for sure, but so is it to imagine it as still, even though it appears that way to us.

The Caledonian formation is a "hyperobject", in that it is an object or form that is so dispersed and abundant that we can only imagine it, and subsequently it is easy to forget about or ignore, like climate change or nuclear waste (Morton, 2010, 2013). Yet it is also fundamental. It is not only what holds us up, but its qualities shape our cultures, our societies, our technologies, and the ecologies we are embedded. From walking, mountaineering, and skiing, to farming practices and the mountain sheep and cows, to the formation of the fjords and valleys, how its softness responded to the glacial ice. Then the development of waterpower, where the climactic conditions of ice, snow, and rain and the steep valleys formed rivers and waterfalls suitable for harnessing power.

The movement and intra-plays of the land are mysterious, with a stoic temporality. Bringing it to our attention, imagining its movement, enlivens this ancient process in the present. It is no longer about the past but about the present we are in and the deep future that is forming alongside us, within which we are nested,

as blissfully unaware as a field mouse in a bale of hay, so still and stable in the early months of winter. Nothing of a landscape is stable. All the different forms that compose it (life forms, rock forms, rain, wind and trains), all are moving and changing, and non are in control (A. L. Tsing, 2015).

Past the train circle of tracks, I push my way through the young trees and continue to move along the mountain face.

The ground is uneven with rocks of various shapes and sizes that crunch and move under my feet. I pass another tunnel clawed into the mountainside, it has almost vanished behind trees and shrubs and a large fallen bolder that blocks the entrance.

After a while, I come to a spoil tip ("steintipp") that I remember seeing from the top of the valley on the other side, residue and rocks removed from the mountain during tunnelling. The tip is about twenty meters across, and while

it is composed of loose rocks, the moss growing across and between them gives the impression of stability, giving me confidence.
There is a faint path that has been formed across the middle, indicating that some people or animals have crossed over it before.
I carefully step out onto the first rock, making sure my foot is firmly planted. Then step by step, I tentatively follow this translucent trace, following the shadows of past movements, so subtle that as I start across, I begin to wonder if I am imagining them.
In the middle, there is an area where grasses and a small tree have begun to sprout. I stop and look at the rocks all around me. These rocks, ground out by the tunnellers and piled up down the steep slopes. All unique, all different sizes and shapes, rough and coarse, shades of grey and splashes of rust red colour like the abandoned tracks. On the other side of the tip the ground straightens, there is an open area of rocks that have been stacked and flattened out into a path or road leading nowhere now.
The moss forms a thick layer coating and absorbing them
and the cut timber left on the forest floor.
I cross back over the tip and head up into the forest above the tunnels toward a large flat rock I had seen about thirty meters up.
I climb up a bank and over fallen trees, then pull myself up onto a narrow ledge. I wind my way up through the trees towards the rock. There is a very faint path heading that way, deer tracks perhaps, or a rarely used human path.
Despite the rock's form, which is so flat and straight that it appears purposeful, it looks too heavy to have been moved in such terrain. The top of the rock is covered with a layer of topsoil, moss, and grasses, and it quickly vanishes from my thoughts.

Looking around, I can see no sign of humans ever having been here. The rocks and fallen trees are being pulled into the layer of green on the forest floor, everything becoming indistinguishable, with no useful boundaries. Then I notice a flash of white from behind some trees. I climb up above it and - looking down - see a sign hanging across an opening in the mountainside that says FARE (DANGER). Underneath it, the fading remains of narrow and rusted train tracks disappear into the darkness.

The mountainside appears and disappears as if it is being slowly swallowed. The surrounding rock drips green, coated with a layer of algae. Trees and plants grow along its edges, moss spreads, and water runs down its face forming tiny streams and waterfalls.

I climb fifty or sixty meters straight up until I come to a sheer cliff. At its base is a channel, about one and a half meters wide and the same depth, the edges

are so flat they could have been cut with a knife, and water trickles over slippery black rock at the base.

After some meters the water collects in a pool, leaves and branches have amassed there forming a sort of dam. Past this is a half tube made from thin metal, aluminium maybe, the size and shape of a flume at a waterpark. It looks as if it joined up with the channel of rock once to continue the flow of water across rather than down the valley. But they have been forced apart by the trees and accumulation of matter on the forest floor.

I try to continue, following the ledge above the water channel, but the rocks are too slippery and the cliff too steep.

I head back to where the path split toward the mountain.

Next to the path are more rusted remains, this time parts of a small train, semi-circular pieces of metal about a meter in diameter and ten centimetres thick. There are small holes all around it, some with bolts rusted on, joining it to another piece the same size.

There is a small ladder with three runs and a set of two small wheels still connected to their axle. Rocks lie all around and over them.

Everything is rusted, and some parts are so thin and brittle and frail, it is as if I can see them slowly vanishing.

On the other side are more traces. A piece of metal formed into a right angle is embedded in an exposed cross-section of earth. Above it is a thin layer of soil, then shingle and stones, grasses and a small tree growing on top. Below it is more soil, the roots from the tree wind their way around it.

The path up to the mountain is steep, making short swings along the edge of the forest, that never strays far from a stream that runs straight down through a clearing in the trees. The tracks, as they were described, should be much higher up than the ones I found below.

I climb up about 400 meters, searching for any traces or paths. I am panting now, wet from sweat and the drizzling rain, and then, suddenly, there is another piece of track, resting casually on its side between two trees over a sheer drop, moss flourishing in the grooves and dusted with leaves.

I search for other traces, clues to where it had come from, but there is nothing and no way to stray safely from the path.

I leave my coat and bag and continue. After a short while I find some more traces, several strips of metal joined together by a hinge, it is again unclear what it is or was. Off to the side is a narrow ledge leading into the forest. I follow it along as far as I can but there are no further traces, only blueberries and young pine.

I continue further, my legs have weakened, I am getting tired, I stumble and fall and graze my arm.

I cross a river whose noise drowns out any other sounds, then reach an area that flattens out a bit and I walk for a while between the trees until the sound of the river fades. Eventually, the valley steepens again and there is nothing around but trees, moss-soaked rocks, and ferns.

Looking down, Rjukan seems so small, like a hobby town in someone's garage.

The light is fading, I admit defeat and head back down.

On the way I see some other traces I had missed.

A solid piece of metal, best described as a giant upside-down baseball cap, lies on the forest floor filled with rusty water and leaves.

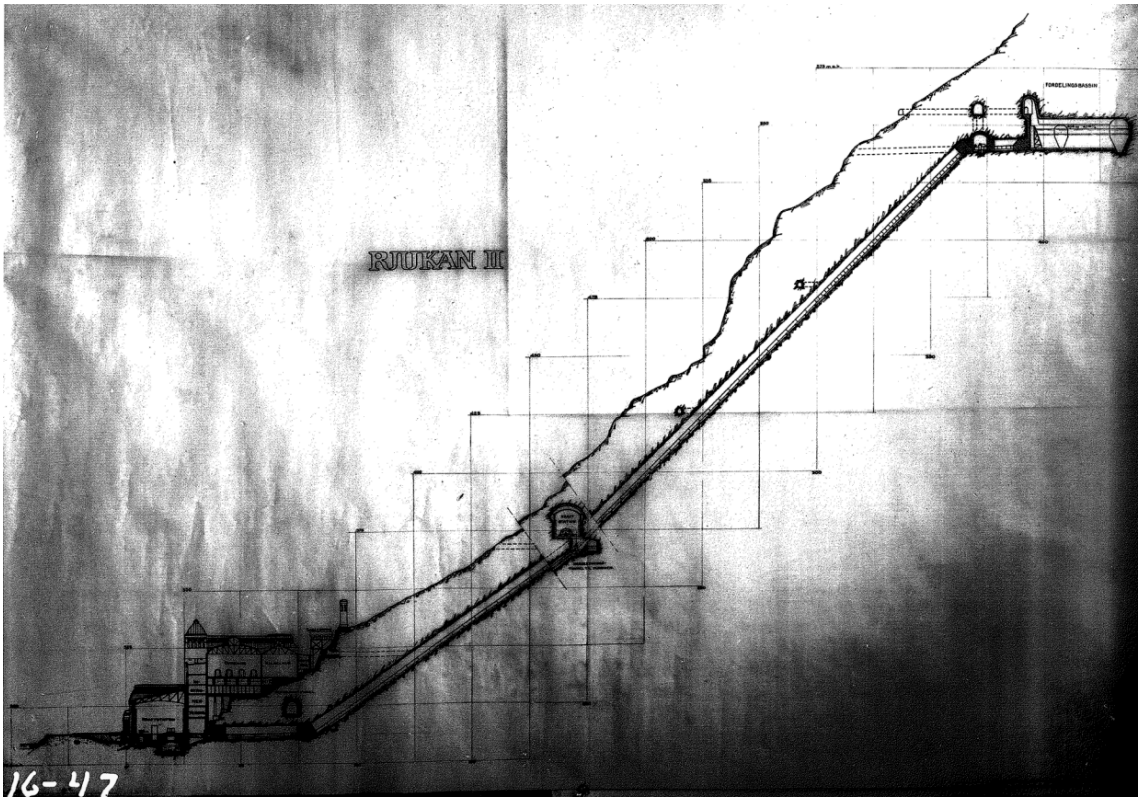
Further down, a block of metal, bigger than the train tracks, is nestled in amongst some chopped birch lying over a stream.

Såheim was the first power station in the world to be constructed inside a mountain. Built in 1914, it produced electricity for nearly 100 hundred years before being phased

out of use in 2011. In addition to power production, the systems of pipes and tunnels were primarily built to provide cooling water to the industrial park and drinking water for Rjukan.

The main pipe tunnel is nine and a half meters wide and runs about straight up the valley side, blasted into the bare rock under the surface of the mountain. There are several entrances and emergency exits, a water reservoir room, an instrument room for storage, a ventilation room and the machine hall at the base. Inside are a series of metal staircases installed for maintenance and cleaning. The machine hall is the largest room containing turbines, generators, steering wheels for cooling, fire extinguishers and an overhead crane.

It was afforded protected status in 2015, where according to the cultural heritage document, the power station remains mostly intact, with only minor changes and upgrades. The area surrounding the power station and tunnels are also protected both below and above ground. These natural surroundings should not be interfered with apart from for holding open entry points required for maintenance and emergency exits.



The project was mostly completed by 1914, and although the heritage protection document highlights the natural surroundings as a part of the heritage, the focus is very much on the tangible objects listed as separate units. The experience and process of building, which, as I have suggested is a human/ecological, geological and technological process of co-forming -"geo-techno-zoe" - (Braidotti, 2019a), receives little attention. This is not simply the intangible stories of the workers or the transition from rural to industrial, but the inseparable intra-play between those elements as part of an experiential landscape.[46]

What we have access to, are photographs from the time when Såheim was built,[47] taken by unknown photographers between 1910 and 1915, which reveal what a challenging feat of engineering and labour it must have been. One of the earliest photos before production, from 1907, shows the landscape from the other side of the valley toward where Hydroparken and the Såheim power station stand today. Instead, there was a small farm, several outhouses and a few huts spread around. The flatter area along the valley floor is patterned with fields, each a different shade. In one hay hangs on wooden posts and there are people in the field cutting and moving the grass. At the bottom the river runs freely by.

In another from 1910, a man stands casually on the edge of an area of built-up stones, not far from where I was, looking down over the valley. The trees around have been cleared and you can see the farm fields have gone. They have been dug over, a dirt road swings through ending in front of a singular industrial building, fog drifts down the valley, and the river still flows, bubbling with rapids. In other pictures from across the valley, the mountainside around Såheim and above is shorn of trees, and the stone tips seem much larger than they do today. The micro train lines were used to transport

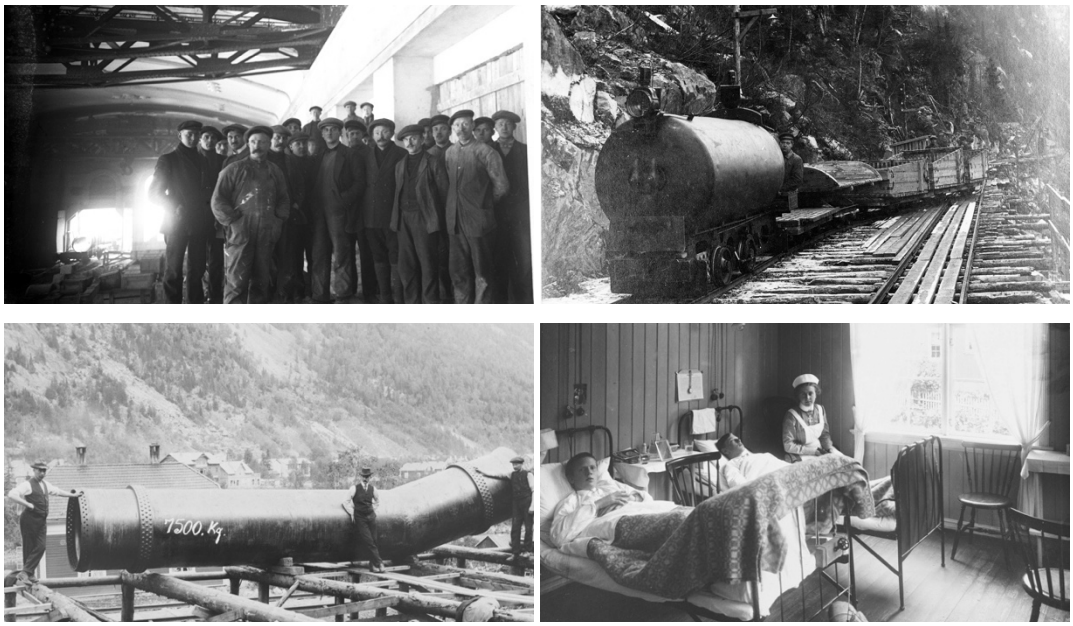
[46] Information from nomination documents and information presentation from: https://www.riksantikvaren.no/fredninger/saheim-kraftstasjon-i-fjell/ (retrieved: 12.08.22)

[47] All archive photos in this section were sourced from: https://digitaltmuseum.no/ (retrieved: 12.04.22)

materials and tools as part of the tunnelling project, which was not limited to Såheim, but extended with piping which connected to Vemork, and there are tips dotted along the valley sides all the way.

In a photo from 1913, a man is driving one of the micro-trains pulling carts behind. The tracks for much of the way were (according to the photos) held up by timber constructions along the sheer valley sides and cliffs. This timber would have rotted and eroded, after which any remaining iron tracks would simply have fallen, which could explain why traces can be found strewn in the most unusual places.

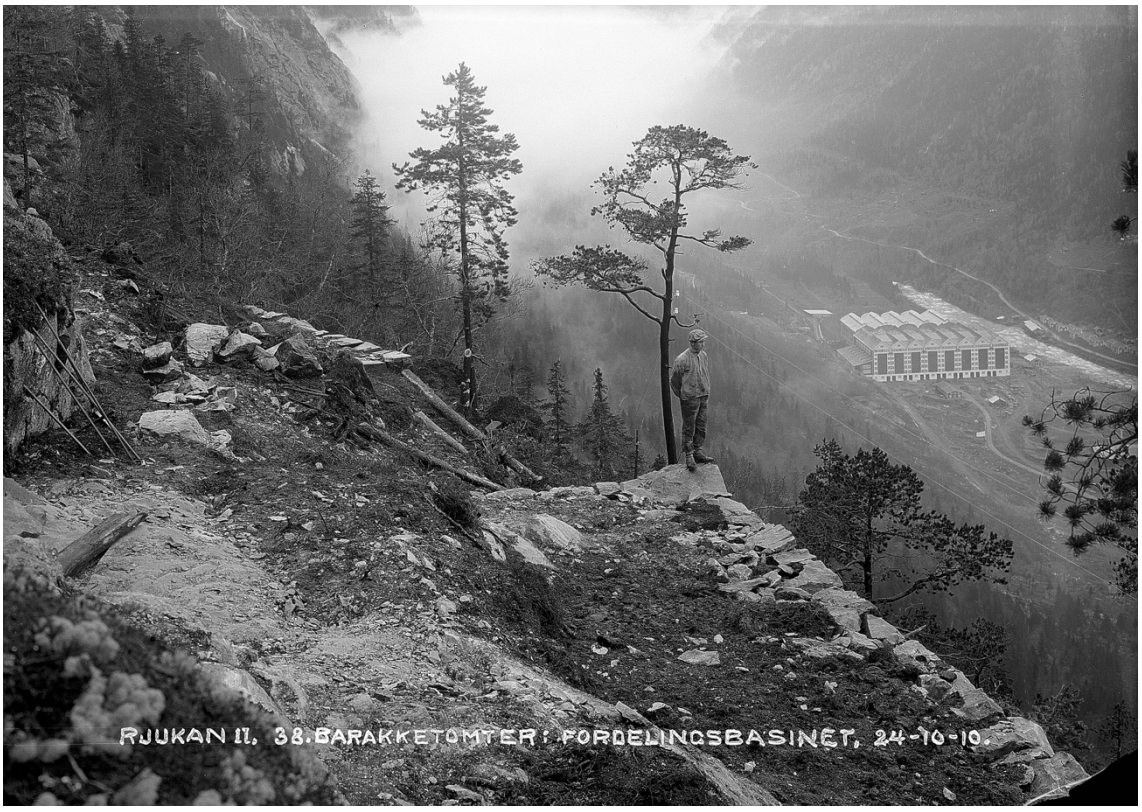
There are photos of the many stages of construction, of trees cut, rocks strewn, tracks laid, houses and factories rising, and lights coming on. A group of workers stand huddled in the entrance to a tunnel with flat caps and moustaches. Three men lean against a section of pipe, held off the ground on a timber frame, with 7500 kg written over it. Two young men lie in beds with their feet up, being tended to by a nurse.



The heritaging of this area is something occurring both underground and above ground. Below ground, the heritage "objects" are protected politically, but also by the rock itself, encasing it from the more volatile and immediate metabolic processes of the surface. The different units that form the power station have been documented, but it is unclear what will become of them, and access is limited. On the surface, the traces of industry, mostly in the form of trains, tracks, rocks and cut timber, reflect a sort of accidental (what Torgeir Rinke Bangstad (2021, pp. 222-225) calls) "industrinatur", where the remains of the train tracks used to build and maintain the underground power station, the stone tips and the wooden support structures have been left for now, to become along their own path, with only minor interventions in some cases with regards to access and human safety. There is mention of a need to restore some of it, but there are no signs of this having happened yet.

The stone tips were formed through the process of digging and blasting the tunnels and rooms underground. This matter was then emptied out onto the surface. All these different forms of rocks and sediment settled together and compressed into a seemingly solid whole – a tip – holding the forest open. From the top of the valley on the other side, these tips appear as features dotted along the landscape towards Vemork, traces of an industrial landscape forming. Close up though, green moss

grows across and among them, seeds and early autumn leaves from the surrounding trees fall and decompose, twigs and branches settle over them, slowly building a new layer of humus. One day these rocks will be back underground, only on top of where they had been before, and the forest will close the gaps they had formed, and this industrial feature will vanish from sight.



The man in the photo from 1910, standing not far from where I did, was part of a landscape rapidly changing form, from rural farming to industrial. Those who toiled there, walking up and down, digging, carrying, and tipping the rock, laying the track in the damp shadow of the mountain, we cannot experience what they experienced, but there is a continuum. As I stood on the mountain looking down, I too was part of a changing landscape at a transition point that connected us in time. Not from industrial and post-industrial, but a heritaging, where a juxtaposition – between preservation and decay, under and over ground, and the official and unofficial stories – reach out in different directions.

On the one hand, they reach back to imagined moments in the past, with representations of its value being lifted gently into the present. And on the other, traces of those past actions are caught up in a continuum, which, although uncanny and unclear, are themselves valuable. They speak of the temporality not just of rock and iron but to the temporal nature of how and what we remember, value and experience.

We do not know what will become of museums and their objects in the future, but we can speculate about the inheritance industrial societies will for the future by considering the past, as part of a geological heritage.

Firstly, I suggest industrial heritage is geological heritage on several levels. It is the process of forming technologies and societies together with the affordances of the other forms that compose that landscape, the topologies, textures, and qualities, which are themselves subject to wider geographic and climactic conditions. Then, whether it be coal, steel, oil or waterpower, industrialisation involves a releasing of the potential held in and formed by geological processes. Then what we produce with

that released potential is also geological, such as plastics, circuit boards, turbines, and atom bombs. These overlapping processes become dependent on one another, at least to us, in that the formation and maintenance of industrial landscapes requires a continuing and deepening geological relation. Ruins, in this respect, reflect a "scar" of failure within the industrial (political/economic) mindset (Edensor, 2005; A. Storm, 2014).

Secondly, if we consider a deep-time heritage, or industrial geology, again, what we learn from the deep past is that much of what is remembered within the earth, within the rocks, bogs and sediment, cannot be planned or controlled (Zalasiewicz & Freedman, 2009; Zalasiewicz et al., 2014). The monuments and engravings from much of ancient Egypt, for example, are understood today as propaganda by the elite. The stories of how and why societies evolved and changed are being discovered by archaeologists, geologists and climatologists working together, as the need for transdisciplinary approaches becomes more evident, in light of the pressing crisis today (Cline, 2014; Olivier & Greenspan, 2011, p. 125). This will likely be the same

for industrial societies, where the traces of industry that survive, and how they are interpreted, will more likely be a matter of chance (Zalasiewicz & Freedman, 2009) as the processes of nature, climate, geology, and future humans, continues to change and reform how and what is remembered. The heritage of the industrial period, however, will perhaps more likely and more immediately be understood through the disbursement of geological matter across the world today in the form of technology, consumer goods, and waste, and the stories these tell about how societies, cultures and the climate were changed.

Memory

This part acts more like a summary, as memory is something I find implicit in everything when talking about heritage processes. What I am suggesting, with the rendering of echoes and through the landscape features I have explored, is an understanding of heritage as processes of "more-than-human remembering" that opens for memory registers beyond the human, including those we might experience as loss (Bangstad & Pétursdóttir, 2021).

Echoes most commonly refer to a delayed reflection of sound off another surface, often associated with a steep mountainside or a cave, where we can imagine a *nymph* calling back to us. Sound has certainly been a prevalent feature within the landscapes I have explored, with the traces of industry providing an abundance of echoey spaces. These sounds reveal much of what is moving and intra-playing today, a collision of traces from the past with the present. The stories that are repeated, the flows of people and machines and development, the hollow factories, tunnels and mountainsides, the birds and children playing, and the wind blowing through the trees. Every sound is unique and never repeats. But sounds are not singular. They are formed of difference, as the sound is not the thing-in-itself. A sound is rather the echoing out of a movement in-between forms, such as wind and leaves, whose waves

crash against an eardrum or a mountainside, sending a changed and different sound further on into the world.

These sounds are limited however, they are often short-lived, they can be dominating and silencing, but then they fade and disappear, where what is often remembered is absent. This absence is a form of remembering too, brought about not by what is there, but by the presence of what is absent, made vital through "embodied memories and habits" (Frers, 2013). Where sounds, movements, and ambiences echo on even in their absence. These are, however, individually evoked, I might sense the absence of water at the edge of a dam, but someone who grew up in Rjukan, where it has always been that way, might not. Equally, they might feel the absence of the sounds of industry that I cannot in the same way.

The rendering of echoes needs, therefore, to be extended to incorporate the wider forms of remembering within the landscape. Whether it be through stories, footsteps, or steel, the potential all forms embody to evoke, effect, and move – to intra-play – is a valid and important form of remembering that reflects an echoing of movements that lives on beyond the sounds they form, but not necessarily in a linear or sequentially ways.

Our footprint, for example, may remain in the mud for several days, or even longer if it is frosty. Someone else may follow it in the future, repeating our movement and leaving their own traces, only slightly different, perhaps next to or overlapping our footprint, distorting its shape. Over time this could become a path, first unofficial, a shortcut, where the footprints of different shoe sizes and patterns and gaits – over time – give way to a worn track through the landscape. With enough people finding the direction it goes useful, it may become an official or known path or even be preserved one day as an "authorised" heritage trail.

Paths that are not trodden though, will eventually fade from view and become forgotten, along with the forms of remembering they had opened for. As such, paths and trails become central to heritaging processes within a particular landscape, where how we are directed to move determines which forms of echoing appear. A path is not movement or footsteps, it is not a clearing, it is not one point or another. It is

formed of the intra-play between these elements, along with all the surrounding forms. As I have discussed, a path is also formed by that which is *not* the path. A path I am walking is also a part of my own path where my movement and footsteps extend out and become a part of the path, we co-form and extend one another. If nothing moves along a path, the traces are brought into another intra-play, the rain softens the ground, leaves fall and moisten and create a layer of nutrients, seeds fall and grasses and shrubs spread, and it is slowly absorbed back into its surroundings, like the stone tips, fading from view. And even though the potential of a path remains there, it is no longer recognised as "a way to go".

A path is one example of an encounter with a form we might consider to be other than us (in the sense of the alien), but on closer inspection we find we are, in fact, forming and defining one another. Paths are also fundamental to our experience, often overlooked as an encounter, in preference of established points of interest or value we stop and attend to. Our path of movement, understood as an encounter, reveals how we are being directed and moved in-between those valued forms, and how and whose values are being echoed on and remembered within the landscape.

But there are other forms of remembering underway, within the forests and forgotten edges, within the soil and rocks. If we position ourselves within a living landscape, a continually moving constellation of different yet inseparable forms across time. We can experience a changing landscape of fading and becoming as others before us did, connecting us to them. Dispelling the myth that we sit at the end of history looking back at an authentically constructed past and opening for a heritaging that is stretching both backwards and forwards in time and across temporal scales, in a process of remembering that we do not control. Where all forms, no matter how significant or not they may appear to us now, leave a trace, have an effect, and retain the potential to become central once again in the future. Flipping the memory register, where what is remembered may get forgotten and what is forgotten may be remembered again.

In 1994, Werner Herzog made a film, ´Cave of Forgotten Dreams´, about the Chavert Caves in France, where two explores had discovered a way into a complex of caves that had been sealed off tens of thousands of years ago by a landslide. Inside they discovered cave paintings and other artefacts that had been preserved in near-perfect condition due to the lack of oxygen. This discovery, he describes, reaches "back through the abyss of time" to an animistic world of herds of wild animals, including lions, rhinos, wolves, deer, horses, mammoths, and glacial ice before the "age of man".

At one point in the film, Herzog reflects on two footprints that were side by side on the cave floor. One is the footprint of an (approximately) eight-year-old boy, and next to it the footprint of a wolf. He speculates as to whether the wolf had stalked the boy into the cave, or if they walked side by side as companions, or perhaps, that the footprints had been made several hundred years apart (as much of the cave art was). In the end, the truth, he concedes, we will never know.

As much as we can learn and know from studying and analysing the caves and their contents, as remarkable and valuable as they are, speculation is required to fully appreciate their wonder. It is our imagination, of all the possibilities, of all the possible stories, that bring the caves to life. These caves, lost for thousands of years, are now closed off again to researchers, to stop their decline. They are a part of what we call our heritage. They echo out once more, in the sealed-off cave, in the form of a film and through a meticulously reconstructed replica of the caves nearby, which includes the smell from the original cave made by a perfume maker.

Bangstad (2021) talks about "memory media", the different materials that mediate memories. He suggests, as Olivier does, a re-evaluation of memory processes beyond simply human memory and identity, where these media act as Mnemonic devices (Keightley & Pickering, 2012), to a wider ecology of memory beyond human involvement or control. Here the processes of a remembering landscape do not only involve what is becoming in the present, but a rethinking of the stories we tell ourselves about our past.

The tree forming with the carriage, whose form acts as a type of memory that speaks to its past movements and intra-plays and connects to its qualities in the present. The carriage too, with its multiple and conflicting forms of becoming that capture different processes of remembering. The rusted forms slowly flaking and seeping out into the landscape, or the concrete being absorbed by the surrounding moisture and green of the forest floor. Then the beach, whose grass islands remember the movement of the tide in response to the rain and demand for electricity. There are also the paths I described as forgotten that should, in this sense, be reframed as having been re-remembered by the surrounding non-path forms.

This idea of memory is not human memory alone but a "more-than-human remembering". The idea of this makes no sense if we still consider ourselves or our culture as being separate from nature and central and will likely cause provocation. However, if we re-position heritaging processes within landscapes as part of a more-than-human continuum, then how we understand the past and remember in the present is disturbed and becomes entangled within the surrounding processes we did not think concerned us. As Olivier (2011) puts it:

> The present is not only that which is happening right now, it is what has always been going on: the aging of matter, the erosion of sites, the imprints bodies make on places - in short, the effects of constantly renewed life as it takes shape in the present, right before our eyes, as it did in all the presents that preceded us and will in those that follow (p. 98).

The heritaging that is occurring is like the cleaning up after a storm. Pieces of industry lie strewn around the landscape, from which we attempt to make some sense. Where forms are never what they were but are always made different. Forming new meanings and having different effects within constantly shifting constellations within the landscape. Some forms are echoed more loudly, others forgotten, discarded, or ignored, appearing to have vanished. But they too become something else. They might tell different stories in the future, either through being found again or transforming into something new.

What this sense of the landscape suggests, is that the heritaging of industry is the processes whereby traces of the industrial past are echoed differently. These echoings are the manners in which intra-plays from the past are carried on, which is a diffractive form of remembering. The past is not remembered in one way; even though some may appear to dominate for a while, the qualities of the past form differently and have different e/affects depending on the qualities and forces they encounter, forming in unpredictable and unexpected ways.

The heritage of industry is, as such, not the past, and it is never fixed and final. It is always forming into the future and therefore, what the heritage of industry will become remains uncertain. What this heritage is in the present is the alien, the edge zone in-between past and future, neither one nor the other, always becoming, always unclear, yet nonetheless experienced. And it is us who experience this, amongst the visitors, the local people, the researchers, the animals, trees, water, wind and forgotten bolts, in amongst intra-playing forms. The potential of what heritage is experientially is therefore infinite.

My journey through the heritage landscape could be understood as a performative act that formed in-between myself and the other forms I encountered. It was not planned in advance, but neither did it exclude my own preconceptions or what I brought with me, my-self, as a part of that which formed.

Such a way of moving forms a less precise story but more complex experience, where heritage objects can be understood as part of an ongoing open process within the landscape, where echoes from the past, the present and the potential of the future become entangled, in a continuous negotiation of how we can sustain ourselves amongst the other forms we are dependent on and with whom we form meaning.

What I encountered and have tried to portray, is a process of remembering that unfolds within landscapes (remembering landscapes), where what is excluded, forgotten, or ignored within official heritaging processes is recognised and re-enlivened as part of this more complex whole. A remembering that occurs around

the backs, within the edges, in the unofficial acts and uses, and in the soil, rocks and strata, as well as in the museums, stories and school bags.

I arrive outside the blue door, having contacted the skate club online, and finding out they were still active.
Truls, who runs it, invited me along.
A group are already gathered outside.
Kids of different ages and some parents.
Every now and then some more people appear, including two older teens.
The talking and laughing bounces between the buildings on the narrow street.
Skateboards clatter against metal and concrete.
An industrial fan is whirring constantly.
After a while, Truls arrives to open the doors, apologising for being late.
The group merge into a line of movement toward the blue door, filing through it and up the wide concrete stairs inside.
The noises of their movements and voices become trapped, like at Vemork, reverberating sharply and vanishing abruptly.
Then through some doors, it opens up into a large industrial space, with high ceilings held up by thick concrete struts.
The skateboards and scooters immediately hit the ground, and the kids disperse in all directions around the room.
Truls starts teaching the basics to a young child.
The walls are concrete about half the way up and covered in graffiti art.
Above them, large windows take over. There is one main room with a high wooden ramp at either end
and in the middle a ramp going up and down.

On top is a long bar low to the ground.
Then dotted around are ramps and obstacles of differing sizes, including sections of polished train tracks.
An industrial hook hangs from the ceiling, and a pair of brown boots with tied laces is dangling from a metal beam.
Behind is an area of sofas and tables, and a makeshift sign for a kiosk selling soft drinks and coffee.
Truls tells me about the place and how it draws people in from other towns as one of the few places for youth to gather. There are plans for building a new hangout, so whether the skate park will stay here or not is uncertain.

I move around the hall with my sound recorder. Up and down the ramps. A sort of dance forms between myself and the skaters, as they avoid me, and I them.

I set up my camera by the beam on top of the ramp in the middle to take pictures, and the older two start to perform, trying to slide at speed on top of the beam and land on their boards again.
Sometimes they make it, but mostly not.
On the other side of the hall are some stairs going up to a mezzanine floor with some offices, and a walkway around it.
I climb up and watch the skaters some more, framed by the traces of industry, through the metal beams and concrete and hanging leads.
The older two are still practising hard, back and forth. The rest of the kids have gathered around Truls, who is standing on his board.

The window behind is open, and I peer out.
It is still and empty on the street below.
The yellow paint on the buildings creates a warm glow with the streetlights.
The sounds of the children drift out from behind me.
The industrial forms echo out once more in a continually differing rhythm of movement and laughter,
drowning out the whirring of the fan.

CONCLUSION

Throughout this process, I have attempted to take the more-than-human seriously, drawing inspiration from key thinkers from across a range of fields where such perspectives are gaining interest. I have then applied an attentive phenomenological method that attempts to understand the landscape ontologically and draw out a sense of what was understood, or evocated, from within, related to the questions of what heritage is and how it comes into being, or forms. This has resulted in a sensory non-narrative film, soundscapes, and descriptive and reflective writing. Through these I have attempted to present what has been learned and how it formed without reducing it to something closed or definite, in a way that instead suggests what this could mean.

With this final section, I want to critically reflect on the process, picking up on some of the threads from the opening chapter before summarising, or gathering, what has been done and discussing how this can be understood, as a sort of conclusion.

Reflections

This notion of *sense,* which I have referred to many times when discussing what it is that is sought through this process (to form a sense of something), is a term I imagine many find a little lofty or vague, and unscientific even. Despite this, as a scientist or researcher too, this sense of something appears very useful and even central, as part of an intuition or discernment that directs us toward which theories and methods might be useful for reaching a particular phenomenon, what that will do and how we might tweak and develop these along the way.

I have applied a phenomenological method that developed throughout the process, where what was done and finally written were shaped and formed along the way, as the experience of the landscape enriched the ontology and methodology as well as the theories and concepts that drifted across my path (either inspired by qualities of the landscape encountered, or eager colleagues or friends suggesting new things to read) and they, in turn, enriched the experience and understanding of the landscape. This method, however, and my relation to it, did not start with this project. As was discussed in the Methods section, this approach has developed through my own education and prior research, workshops, lectures and writing articles, through which it has continually formed and been adapted, along with the sense I have for how these various elements intra-play.

My journey within, or perhaps better with, the landscape was both a research journey, revealing qualities of becoming (many of which would not have encountered along another path or through another method) and a journey of becoming for myself. This more personal journey was both one of professional learning, exploration, and development, as well as one of forming attachments and evoking memories from my own life and past, that in many ways helped me frame and relate to the various heritage processes encountered.

The idea of how memories can be held within "objects", released through an intra-play between those forms and the person encountering them, caught me suddenly and very viscerally when I came upon a totem on a shelf in my living room, something I had not looked at or thought about in years. The totem is black, around ten centimetres high and formed of some type of plastic composite. The carvings into it illustrate three lizard or dragon heads sitting on top of one another. It is something I got from my great-grandmother, who we called Bonnie Nanny, as her dog was named Bonnie, when I was about six years old, a time I have very few memories from. However, when holding and looking at this totem, I was taken back to that day in a surprisingly detailed and sensory way. It was toward the end of her life, and we were visiting her as we often did. She told my sister and me that we could choose anything

from the house as a token to remember her by. In that moment, I could remember the small garden, the entrance to her house and the steep stairs going straight up just inside the door, the corridor down to the kitchen and a doorway into the living room to the left. I do not remember if I looked at many things or had already seen the totem before, but I found it on a window ledge halfway up the stairs. I remember sensing that perhaps my mother and grandmother thought it was a rather odd choice but that Bonnie Nanny was happy for me to have it.

I am well aware that this memory is full of falsehoods, from a historical perspective, and as I think about it, for example, in my memory the stairs inside the door are in another place when I am finding the totem, an amalgam of houses and stairs from that time perhaps. And while I could talk to my mum and ask about the layout of the house and that day, I haven´t. I feel protective of the memory as it is. It doesn´t matter to me that it is not factually correct. I also have no clue as to the story of the totem either, where it came from or how it ended up there, it was a rather odd item in many ways, but again, I am not sure that I need or want to know.

Another story relates to a set of glasses I inherited more recently, which gave me an understanding of what has been described as a preservation instinct in modern times (DeSilvey in: Rodney et al., 2020, p. 289). When my grandfather passed away, there was a lengthy process of sorting through the house by my mum and her sisters, of remembering and determining the personal values of various items and who would inherit what. I was asked by my mum if there was anything I could think of that I wanted. The first and only thing that came to mind were some drinking glasses I remembered from my childhood and later as an adult.

In their kitchen, there was a large bench surface that protruded out into the room, dividing the kitchen section from the eating area. The bench was a tiled surface with a gas stove set into it and metal edging, and on the non-kitchen side, there were some stools with black metal legs and soft pale laminate covers. As a young boy, I would climb up onto one of the stools and my Nan, who was often on the other side, would offer me a drink (usually cloudy lemonade). I remember always wanting it in those

specific glasses, slightly pair shaped, narrowing toward the top, and at the base there was a rough cloudy glass embellishment shaped like leaves reaching up the side of the glass. My mum packed them up for me and brought them out the next time she visited, and they have since been integrated into our kitchen.

This "instinct" struck me one time when my daughter, who is ten, made some drinks for herself, a friend and her brother, who is 5, and she used those glasses. I felt a sudden nervousness collect around my throat, and I had to hold myself back from getting her to swap them. They don´t break glasses much anymore, but every now and then and especially my son, my instinct was to put them on a higher shelf. I suddenly understood where the phenomenon of glass cabinets filled with unused things came from. But after reflection, I realised that if I did that, my children would have no meaningful association with the glasses as I did, and the memory as meaning would fade with me, and perhaps it would be better that they are used and form new and different meaningful memories. But this contrast, this wrestling of emotions, stuck with me.

One final story relates to ruins and decay and how we relate to these temporal processes, brought out while searching for and examining the rusted tracks in the mountains above Såheim. I was taken back, quite randomly, to a moment a few years ago when I was sitting in my parent's conservatory in my childhood home. It was a summer's day, and I was sitting alone. I suddenly became transfixed by some old paint that was peeling from the woodwork, around the joins, and around the window putty. Then I started to notice the cracks and worn glass, how everything was faded, and I thought back to when the room had been refurbished. It had been two rooms, but the wall was knocked down, new tiles were fitted on the floors, new lighting fixtures and fresh paint on the walls and the details around the windows. I could remember how fresh and new it felt and then how much younger my parents and I were then. The emotion that struck me within that moment, was the sense I had back then of feeling mocked by time, as if the decay was laughing at me, and how all that time and

the hope and effort embodied in that new fresh room was gone, only to be repeated or lost.

I mention these three examples to try to situate myself a little more within this project. My approach to the more-than-human, it has struck, might feel to some as distanced and impersonal from a human-centric perspective, as if I do not relate to the emotions of heritage the ways I have presented the landscape may evoke. I thought about writing these into part two, as they became relevant, but equally, I did not want to re-orient the experience around myself any more than necessary. I wanted, rather, to leave open the possibility of such emotions, memories, and stories to be evoked by the reader or viewer in differing ways. And show where such evocations can and do form in-between material forms and people in more-than-representational ways, which themselves form a part of the intra-play.

I am however aware, ethically, that this landscape is where many people call home, whereas I was only passing through for a relatively short time. I had to consider whether it was ethical to capture processes that may make others feel mocked, as I did that day in the conservatory, balanced with an honesty toward my approach to studying landscapes. As I discussed at the beginning, I feel my journey has brought about a balance of emotional encounters that relate to how the landscape is becoming differently, which opens for a broader more-than-human perspective of these processes and what heritage might mean.

Through my video and sound work, I found perhaps a more natural and comfortable way to do this. Both as a medium I enjoy working with, and as a method that naturally avoids many of the challenges inherent in writing and the weight of expectation with regard to knowledge production.

The qualities and features that became central, through reflection and engagement with the materials, memories, and variety of media from the phenomenological encounters formed into what can be described as rhizomatic fragments or explorations. Where the writing process was not planned as a writing up but used as

a mode of enquiry itself, considering what these qualities might mean or tell us and how they could connect to wider concerns and processes.

As is clear, these qualities and features do not neatly categorise or separate, they are mixed in amongst one another, and they reach out beyond the geographic position of the encounter, revealing a heritaging that does not stay bound to any notion of place. The heritaging of industry, as such, hints at things beyond the scope of this enquiry, for example, how we move, think, and live today, the deep future, notions of dystopias and utopias, the level of control we have over our attention and how, what, and why we remember.

Throughout the process of writing, I often felt what Rita Irwin described earlier, that:

> It is often an anxious life, where the a/r/tographer is unable to come to conclusions or to settle into a linear pattern of inquiry. Instead, there is a nervousness, a reverberation within the excess of the doubling process. Living inquiry refuses absolutes; rather, it engages with a continual process of not-knowing, of searching for meaning that is difficult and in tension. Tension that is nervous, agitated, and un/predictable (Springgay et al., 2005, p. 902).

This is certainly something that became present, with what she calls a movement between the tension of image/art and academic writing. I felt a real instinct not to go beyond the film and sounds, but through the process of writing I found it ultimately enriching, even though it is more reduced in other ways.

I described at the beginning my history and knowledge of the site. I also discussed my considerations around how much information should be given to the reader/viewer at the outset, both to avoid frustration and disorientation, but equally

not to set too much in stone and risk glossing over the fragmentary nature of experiences and memories within the landscape, in the form of a complete historical story. Such stories can not only lead the reader into drawing certain assumptions but are themselves subject to continual change over time.

I have however, found more information in the form of stories or "facts", useful for enriching reflections of encounters later, as with my exploration of Såheim, and this is perhaps something that could be brought into play more when using this method again. However, there is also a certain appeal to the speculative nature of more mysterious encounters and loose ends. Such as the paintings in the warehouse, peering through windows, or the wider story of the train carriages before my encountering them, then after they were removed and what they have been re-formed into now. As with the totem, I am not sure I want to know, and further, such unexplored strands – those paths not taken – make present the limits of such research, and the endless potential phenomena possess beyond that we can access and experience.

Despite this general movement from not knowing much and an uncertainty, toward finding a way and forming understandings, in reality of course these processes overlap in research, shaping and forming one another. Through previous work, seminars, book projects, lectures, meeting other researchers in the field, the stories and narratives. Then there are the evaluations, always more recommendations, new theories and approaches, often too much, sometimes at the wrong times. This is the journey of professional development though, as research is a process of learning and of becoming too.

Within heritage studies, there is also the excitement and uncertainty associated with a very transdisciplinary field that does not want you to stay in one box, as Caitlin DeSilvey (2017b, p. 7) reflects on. My background is transdisciplinary, particularly through studying sustainability (another field that wanders across the disciplinary divides), but many of the disciplines this project has been drawn into or toward, such as archaeology, geology and geography, were new to me in many ways. Each of these subjects has its own historicity, which can be unnerving, but equally, they seem to be

arriving at a similar point in relation to heritage, beginning to coalesce, asking similar questions and quoting the same references, which gives a way in, helping to find useful commonalities. It was surprising how quickly these became familiar, and the divides between disciplines began to feel strange and fade.

Considering the structure, there is, in a way, a gap between the conceptual elements in part one and the empirical work in part two. This is in one sense inevitable, considering that goal of the method is to co-form conceptual renderings within the landscape rather than bring them as an analytical lens, but also, in part, a choice. As I have already described, part one lays the groundwork, the thought and philosophy behind the approach, the ontology, some of the important themes within heritage studies and then what has been done (or linearly put, shall be done). Part two is the presentation of the experience (of an experience), what unfolded, a new phenomenon co-formed through the process of moving within the landscape and then editing and writing. The fact that new concepts and theories appear throughout this second part is the goal. These formed through the process, from an intra-play with the qualities and features encountered and what these evoked. It is through the writing that these *became* conceptual, opening for disagreement and interpretation as to what they mean, and in that sense, political. But these are the threads the project opens for, not something I sought or seek to define. What is presented, is the qualities of the pathway and the renderings that co-formed with them.

I could have written backwards, defining and discussing these qualities and conceptualisations at the beginning, as is perhaps more traditional. However, this would have worked against what I was hoping to achieve, and would have acted, again, as a sort of smoothing or glossing over the process through which they formed. It would have felt as if I was trying to re-organise my research process to fit established norms of how knowledge is produced and for that matter, what

knowledge is, which the more-than-human perspective confuses. However, there is an element of layering, in that the thesis does not read precisely in the order in which things happened. As I have already alluded to, the different elements overlap and inform one another. Then the encounters as they appear in part two are not in a linear or sequential order, appearing rather in relation to the qualities and features being discussed. This, again, is intentional, as I am arguing that the past (as experienced) is neither linear nor sequential.

Then there are also theories or ideas that I became aware of at different stages but seemed too important to leave out. For example, I was introduced to Karen Barad's (2003, 2007, 2011) work after developing the concept of intra-play, which is why the methodological article, published with Per Ingvar Haukeland, only mentions her briefly as a reference to how she is using *intra* also. Since then, I have read much of her work and this has been very helpful and enriching throughout the thesis. Then with the work of Laurent Olivier (2011), which was introduced to me towards the end of my project, whose ideas and arguments strike very close to those I am making. Similarly, the anthology entitled ´Heritage Ecologies´ (Bangstad & Pétursdóttir, 2021), published in 2021, which I read in early 2022 after most of my fieldwork and writing was complete. These works, to a greater extent, affirmed the sense this project came to, of what a heritage landscape is, and helped to conceptualise and verify these findings outside of myself and my experiences.

When writing an article or within a shorter research project, the window of influence is in some ways clearer and more defined. Over four years or more, however, there is a lot of room for new influences to drift across your path and disturb your process in different ways. These are examples of the fertile yet chaotic upper layers of knowledge production I described early, where it is not always clear where one idea begins and another ends.

My approach to research throughout this project has inevitably, as with all forms of research, opened for certain things; types of knowledge, understandings, stories, and pathways, while at the same time, it has closed for others. I have pointed to some of

these already in terms of the threads (so to speak) not followed, and the directions not taken, that hinted at the multiple and differing encounters that could have been had. And it is clear that the more-than-human perspective I have increasingly embodied throughout and was already a part of who I was before, has played a huge role in those choices. Then, also in terms of the choices made while reflecting and writing, not to bring my own emotions and those memories evoked into the story directly, as I do not consider my work as auto ethnographic, perhaps concealed part of the effect I had, which is why I mention them here.

With such an approach, there is perhaps a requirement not to know exactly what you seek, and that such a premise can help and encourage an open and attentive sensibility to develop. When you do not quite know what you are looking for, both conceptually and within the landscape, it forces an opening toward the world in a different way, as I found moving off the official paths and tracks. Such an approach, however, is not necessarily always easy, as I found in workshops and with students; it is a practice that is not for everyone. There are also differences in how people are able to move, depending on their abilities, but also where and when people feel safe, drawing in issues of belonging, race and gender (Boutin, 2012; Howard et al., 2020, p. 97). The thought of moving around in this way, not knowing what you will come across, starting unplanned conversations, and straying from the path, maybe challenging for some people, and within other cultures or countries where notions such as trespassing are more prevalent. I have lived in Norway for many years, but I grew up in England. When I first moved here, the idea of a right to roam felt unfamiliar, uncomfortable even at first, and it is not obvious I would have thought to apply such an approach at that time.

That said, despite the importance of raising these issues, I do not believe that all research methods need to be universally applicable, rather as Irwin says, the method

is to be figured out along the way in many senses, both in terms of how we choose to move and the artistic or creative practice we explore, based on listening to and coming to know our own abilities, interests, and inclinations, as well as discerning what is suitable for intra-playing with the phenomenon of study.

Then there are the ontologically choices in how I have framed the landscape, that seek to decentre the human within a study of heritage. Many would find this problematic, pointing to the notion of heritage itself as something that is human-centric. I disagree, as while we are talking about, in this case, industry and what that is becoming, nature has its own history, its own processes of remembering, in how forms change and reform over time, and it is these that form the basis of our human life, not as something that came before, the past, but a history we are intimately and inseparably embedded.

Saying that heritage is a human-centric concept is an act of narrowing and closing, to say what it is, which re-opens the nature-culture divide once more. What this project has been exploring is what heritage is beyond a concept or a tool as perceived by humans, as part of a more-than-human understanding of heritage. This does not exclude the human, but seeks, encourages even, a wider intra-play of "voices", even though many of them are not formed of language. A human-centric focus only on politics, economics and power is, from this perspective, a limiting view, which is different from saying it does not matter. It simply suggests it is not all that matters.

The proposition of a more-than-human heritage is not about diminishing human concerns and interests but re-viewing them as part of a shared landscape (world) that we do not own, but merely inhabit and intra-play with for a short while. It is not to say that everything is heritage, but that the heritaging processes are not something we can really control, in terms of what and how things will be remembered in the future. It is not to say that humans have no power, but simply suggests that they do not have as much power as they like to think.

This brings me to the role of the people I met along the way. As I discussed at the beginning, the impact of the covid-19 pandemic has had an impact on this project, both in terms of my ability to move freely amongst people, travel to do fieldwork and interview people in the way I would want to, and this has very likely played a role in pushing humans further to the periphery. However, on reflection, it could be argued that this has, in turn, helped my flat ontological approach in some ways. Despite this, I have met many people within the landscape, where interactions have ranged from more of an observational following, to absorbing and capturing the ambiences of their movements, as well as conversations and interviews.

One of the things that has struck me while reflecting on the process as a whole, is that I feel as though I am less interested in humans than I was before. I have put this down primarily to two things; firstly, again, the impact of the pandemic, where for a long period of time we all lived an isolated existence, working from home, with little socialising or dynamics, something many people are still impacted by, and secondly, what I am calling the more-than-human effect. More-than-humanism, or posthumanism, are not anti-human; they absorb the human, just not hierarchically above other forms. And this is another example of a force that I believe drew me toward the edges.

The human is ever present in my project, in the traces and e/affects of their movements and intra-plays, but as a part of the more-than-human where they become decentralised. I spoke to many people, and these were nice conversations and often led to me being directed toward something I had not encountered or known about, like the viewpoints or the train tracks above Såheim. Then as I mentioned, I also interviewed people, and while many of these were very interesting and engaging conversations, I was left with a sense that people often switched into narratives I had heard before, as if they were performing a role, and I was struck with the feeling I was not the first researcher they had spoken to. That, as part of a different research project, using another approach, would have been an interesting question in itself.

Ultimately though, it was the movements of humans as they intra-played between the past and present, through traces and the people there in those moments, that

interested me most. The river walks, museums, skate park, dugnad, and the paths and traces, maintained and fading, all intra-playing as part of the heritage landscape.

When assessing the success or failure of this project, it is in part necessary to mention again that this was in many ways an experimental approach, building on earlier approaches and understandings of how we can explore phenomena in new and creative ways. It also requires an acceptance that if we are to take the more-than-human seriously, then this suggests a re-evaluation of what knowledge is and how it forms, opening for uncertainty that may not be immediately comfortable. Then as with any research approach, it opens for certain ways of knowing while closing for others.

I suggest this approach is useful for studying complex phenomena, where it is taken as a premise that what that phenomenon is, is not known and in fact unanswerable in a full and final way. Where what is sought is instead the intra-plays through which phenomena have and continue to form, and following this, what these pathways reach out toward and e/affect, revealing the complexity and inseparability of the processes underway. It is an approach useful in seeking new directions, suggestions, and intra-connections that continually lead to new questions. And while these may include the forces of politics, economics, and power, it is not useful for asking what things *are* in a representational sense, or what things do in terms of easily and obviously applicable facts –socio-politically. This is in part due to the problem of the open and explicitly indeterminate forms of knowledge that are produced, but also because such institutional levels are, to a great extent, still ethically centred around human concerns.

This approach to studying heritage as landscapes can, I believe, be of value when considering the heritage experience, of visitors, researchers, and locals, opening for

the inclusion of multiple "unofficial" uses and more-than-human processes to be included in the stories of those places. This is something that is useful for understanding heritage as a far more complex entanglement of processes. Such an inclusion, I suggest, while complicating the official narrative and processes, would enrich the experience of visitors, which could lead to the development of more democratic and sustainable attitudes towards the world, past and present. Then, with regards to sustainability, such approaches offer a way to include the more-than-human in how we develop, move, and research the world, and, most importantly, how we think about and position ourselves within it –toward the future.

Final thoughts

I shall now try to describe succinctly the sense of what heritage is and how it comes into being as I understand it now. That is the diffractive (and thus not final) working conceptualisations and what this suggests they mean.

Through this project, I have sought to join with a remembering landscape, allowing myself to be moved by and toward encounters that I am experientially a part of, and through this, I have come to an understanding of heritaging as processes that are more-than-human. And have attempted to elucidate this sense or understanding through the metaphorical renderings of echoes and edges. As such, heritaging can be understood as that which echoes out and back in multiple and unpredictable ways. Where echoing is extended materially to incorporate how all forms move outward and leave a trace, traces that can be followed, repeated, re-formed, re-remembered in different ways in the future, including what we call the forgotten, discarded, or unofficial, which are themselves simply other forms of remembering that are ontologically inseparable within the experiential landscape. Neither can form without the other. Remembered-forgotten, official-unofficial, path-not path, all shape and form, "define", one another and cannot be understood in isolation. This forming is a continual process that occurs in-between forms, their qualities, and forces –within the

edges. Whether that is between wood and soil, metal and liquid, or official and unofficial uses and stories, what forms remains contested across spatial and temporal scales, neither one thing nor the other in any clear or definable way. Where what is officially remembered in the present holds no guarantees for the future, when trash can become treasure again, and those more-than-human processes of remembering, seeping out into the soil and air and water, may return in unforeseen ways.

This project did not, at the outset, assume to know what heritage is, nor what the traces of industry are becoming and how they will be remembered, but rather sought to discover a sense of this from within the landscape. Some may find this too unclear or uncertain, but this is, in many ways, the point perhaps. The more-than-human perspective alters things, re-framing and re-ordering the world and our place in it, where from such a perspective nothing is clear. It is a paradigm shift after which facts, patterns, and a certainty of how things are, become replaced by an active world that is constantly re-forming and is never final.

How industry becomes heritage, which by now means how the traces of industry will be remembered, is never fixed or certain, but will likely become something very different than what we try to control in the present.

BIBLIOGRAPHY

Abram, D. (1996). *The Spell of the Sensuous*: Vintage Books.

Ågotnes, H.-J. (2014). *Når industrisamfunnet blir verdensarv*. Oslo: Scandinavian Academic Press.

Anderson, J. (2010). *Understanding Cultural Geography: Places and Traces*. Florence: Florence: Routledge.

Anheier, H. K., & Isar, Y. R. (2011). *Heritage, memory & identity* (Vol. 4). London: Sage.

Assmann, J., & Czaplicka, J. (1995). Collective Memory and Cultural Identity. *New German critique, 65*(65), 125-133. doi:10.2307/488538

Augé, M. (2004). *Oblivion*. Minneapolis, Minn: University of Minnesota Press.

Bangstad, T. R., & Pétursdóttir, Þ. (2021). *Heritage ecologies*. London,New York, NY: Routledge.

Barad, K. (2003). Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter. *Signs: Journal of Women in Culture and Society, 28*(3), 801-831. doi:10.1086/345321

Barad, K. (2007). *Meeting the universe halfway : quantum physics and the entanglement of matter and meaning*. Durham: Duke University Press.

Barad, K. (2011). Nature's Queer Performativity. *Qui parle, 19*(2), 121-158. doi:10.5250/quiparle.19.2.0121

Barrett, J. C., & Ko, I. (2009). A phenomenology of landscape: A crisis in British landscape archaeology? *Journal of social archaeology, 9*(3), 275-294. doi:10.1177/1469605309338422

Bateson, P., & Martin, P. (2013). *Play, playfulness, creativity and innovation*. New York: Cambridge University Press.

Becker, H. S. (1974). Photography and Sociology. *Studies in Visual Communication, 1*(1), 3-26. doi:https://repository.upenn.edu/svc/vol1/iss1/3

Bennett, J. (2010). *Vibrant matter : a political ecology of things*.

Benyus, J. M. (2002). *Biomimicry : innovation inspired by nature* (Reissue. ed.). New York: Perennial.

Binelli, M. (2013). *The last days of Detroit : motor cars, Motown and the collapse of an industrial giant*. London: Bodley Head.

Birkeland, I. (2008). Cultural Sustainability: Industrialism, Placelessness and the Re-animation of Place. *Ethics, place and environment, 11*(3), 283-297. doi:10.1080/13668790802559692

Birkeland, I. (2015). The potential space for cultural sustainability : place narratives and place-heritage in Rjukan (Norway). In (pp. 161-175). London: Routledge, 2015.

Birkeland, I. (2017). Making Sense of the Future: Valuing Industrial Heritage in the Anthropocene. *Future anterior, 14*(2), 61-70. doi:10.5749/futuante.14.2.0061

Bogost, I. (2012). *Alien phenomenology, or, What it's like to be a thing*(Vol. 20).

Bogost, I. (2016). *Play Anything: The Pleasure of Limits, the Uses of Boredom, and the Secret of Games* New York: Basic Books.

Bohm, D. (2004). *On Dialogue*: Routledge.

Bollier, D. (2014). *Think Like a Commoner: A Short Introduction to the Life of the Commons*. Canada: New Society Publishers.
Bond, L., Craps, S., & Vermeulen, P. (2017). *Memory unbound : tracing the dynamics of memory studies*.
Boutin, A. (2012). Rethinking the Flâneur: Flânerie and the Senses [Special Issue]. *Dix-neuf : journal of the Society of Dix-Neuviemistes, 16*(2), 1.
Braidotti, R. (2017). Four Theses on Posthuman Feminism. In (pp. 21): University of Minnesota Press.
Braidotti, R. (2019a). *Posthuman knowledge*. Medford, MA: Polity.
Braidotti, R. (2019b). A Theoretical Framework for the Critical Posthumanities. *Theory, Culture & Society, 36*(6), 31-61. doi:10.1177/0263276418771486
Bronner, S. E., & Kellner, D. M. (1989). *Critical theory and society : a reader*. New York: Routledge.
Bryant, L. R. (2014). *Onto-cartography : an ontology of machines and media*. Edinburgh: Edinburgh University Press.
Chan, G. (2018). *Rusted Off Why country Australia is fed up*

. Australia: Penguin.
Cline, E. H. (2014). *1177 B.C. : the year civilization collapsed*. Princeton: Princeton University Press.
Council of Europe. (2000). The European Landscape Convention. 1-94.
Coverley, M. (2010). *Psychogeography* Harpenden: Oldcastle Books.
Crawford, M. (2016). *The world beyond your head : how to flourish in an age of distraction*. London: Penguin.
Cresswell, T. (2020). *Plastiglomerate*(1st ed. ed.).
Curry, P. (2011). *Ecological ethics : an introduction* (2nd fully rev. & exp. ed. ed.). Cambridge: Polity Press.
De Landa, M. (1997). *A Thousand years of nonlinear history*. New York: Zone Books.
Debord, G. (1983). *Society of the spectacle*. Detroit: Black & Red.
Deleuze, G. (1988). *Spinoza : practical philosophy*. San Francisco: City Lights books.
Deleuze, G., Massumi, B., & Guattari, F. (2013). *A thousand plateaus : capitalism and schizophrenia*. London: Bloomsbury.
DeSilvey, C. (2006). OBSERVED DECAY: TELLING STORIES WITH MUTABLE THINGS *Journal of material culture, 11*(3), 318-338. doi:10.1177/1359183506068808]www.sagepublications.com
DeSilvey, C. (2010). Memory in motion: soundings from Milltown, Montana. *Social & cultural geography, 11*(5), 491-510. doi:10.1080/14649365.2010.488750
DeSilvey, C. (2017a). *Curated Decay : Heritage Beyond Saving*. Minneapolis: University of Minnesota Press.
DeSilvey, C. (2017b). *Curated Decay: Heritage Beyond Saving*. Minneapolis: University of Minnesota Press.
DeSilvey, C., & Edensor, T. (2012). Reckoning with ruins. *Progress in human geography, 37*(4), 465–485. doi:https://doi.org/10.1177/0309132512462271
Dessein, J. (2015). *Culture in, for and as sustainable development : conclusions from the COST Action IS1007 investigating cultural sustainability* (Vol. IS1007). Jyväskylä: University of Jyväskylä.
Edensor, T. (2005). *Industrial ruins : spaces, aesthetics and materiality*. Oxford: Berg.
Erll, A., Nünning, A., & Young, S. B. (2008). *A companion to cultural memory studies : an international and interdisciplinary handbook*(Vol. 8 = 8).

Finlay, L. (2009). Debating Phenomenological Research Methods. *Phenomenology & Practice Open University*

, 3(No. 1), 6-25.
Frers, L. (2013). The matter of absence. *Cultural Geographies, 20*(4), 431-445. doi:https://doi.org/10.1177/1474474013477775
Fukuyama, F. (2000). *The great disruption : human nature and the reconstitution of social order*. London: Profile Books.
Furman, A. (2012). Desire Lines: determining pathways through the city. *WIT Transactions on Ecology and The Environment, 155*.
Gambino, M. (2009). A Salute to the Wheel. Retrieved from https://www.smithsonianmag.com/science-nature/a-salute-to-the-wheel-31805121/
Gibson, J. J. (2014). *The Theory of Affordances*: Psychology Press.
Griffin, E. (2013). *Liberty's Dawn: A People's History of the Industrial Revolution*. London: London: Yale University Press.
Halbwachs, M., & Coser, L. (1992). *On collective memory*. Chicago, Ill.: University of Chicago Press.
Hansen, J. C. (2002). Ungdoms forhold til sted : er Rjukan et blivende sted? In: University of Bergen. Department of Geography.
Haraway, D. J. (1991). *Simians, cyborgs, and women : the reinvention of nature*. London: Free Associations Books.
Haraway, D. J. (2016). *Staying with the Trouble: Making Kin in the Chthulucene*. North Carolina: North Carolina: Duke University Press.
Harman, G. (2018). *Object-Oriented Ontology A New Theory of Everything*. UK: Penguin.
Harrison. (2013). *Heritage : critical approaches*. London: Routledge.
Harrison, R. (2013). Forgetting to remember, remembering to forget: late modern heritage practices, sustainability and the 'crisis' of accumulation of the past *International Journal of Heritage Studies, 19*(6), 579-595. doi: http://dx.doi.org/10.1080/13527258.2012.678371
Harvey, D. C. (2001). Heritage Pasts and Heritage Presents: temporality, meaning and the scope of heritage studies. *International Journal of Heritage Studies, 7*(4), 319-338. doi:10.1080/13581650120105534
Holling, C. S., & Gunderson, L. H. (2002). *Panarchy : understanding transformations in human and natural systems*. Washington, D.C: Island Press.
Holquist, M. (2002). *Dialogism : Bakhtin and his world* (2nd ed. ed.). London: Routledge.
Howard, P., Thompson, I., & Waterton, E. (2020). *The Routledge companion to landscape studies* (Second edition. ed.). London: Routledge.
Huizinga, J. (1955). *Homo ludens : a study of the play-element in culture*. Boston: Beacon Press.
Ingold, T. (1993). The temporality of the landscape. *World Archaeology, 25*(2), 152-174.
Ingold, T. (2011). *Being alive : essays on movement, knowledge and description*. London: Routledge.
Ingold, T. (2013). *Making : anthropology, archaeology, art and architecture*. London: Routledge.
Ingold, T. (2015). *The Life of Lines*. Taylor and Francis.
Ingold, T. (2016). From science to art and back again: the pendulum of an anthropologist. *Anuac, 5*(1), 5-23. doi:https://doi.org/10.7340/anuac2239-625X-2237
Ingold, T. (2017a). Anthropology contra ethnography. *Hau: Journal of Ethnographic Theory 7 (1)*, 21–26.

Ingold, T. (2017b). *Correspondences : Knowing from the inside*. Aberdeen: University of Aberdeen.
Ingold, T. (2017c). *Correspondences (Knowing from the inside)*: University of Aberdeen.
Ingold, T. (2018). *Anthropology and/as education*. London: Routledge.
Introna, L. D. (2009). Ethics and the Speaking of Things. *Theory, Culture & Society, 26*(4), 25-46. doi:10.1177/0263276409104967
Irwin, R. (2008). *"A/r/tography": The SAGE Encyclopedia of Qualitative Research Methods*. Thousand Oaks, California.
Irwin, R. (2013). Becoming A/r/tography. *Studies in Art Education, 54*(3), 198-215. doi:https://doi.org/10.1080/00393541.2013.11518894
Israel, M., & Hay, I. (2006). *Research Ethics for Social Scientists*. London: England, London: SAGE Publications, Ltd,United Kingdom, London: SAGE Publications, Ltd.
Johannessen, S. F. (2019). Demokratisk industriarv? Kulturarvifisering og identitet i øvre Telemarks verdensarvområde.
Johansson, M. (2015). *Life in a World Heritage city : a case study of discussions and contested values in Angra do Heroísmo, the Azores.* (no. 646). Linköping University, Linköping.
Kant, I. (2016). *Perpetual Peace: A Philosophical Essay*: Project Gutenberg.
Käufer, S., & Chemero, A. (2015). *Phenomenology : an introduction*. Cambridge: Polity Press.
Keightley, E., & Pickering, M. (2012). *The Mnemonic Imagination : Remembering as Creative Practice*. London: Palgrave.
Kirshenblatt-Gimblett, B. (2020). World Heritage and Cultural Economics. In (pp. 161-202). New York, USA: New York, USA: Duke University Press.
Knight, L. (2020). *Draft copy: Inefficient Mapping: A Protocol for Attuning to Phenomena*: CAL: Punctum Books.
Knight, L. (2021). *Inefficient Mapping: A Protocol for Attuning to Phenomena*: Punctum Books.
Knudsen, B. T., & Stage, C. (2015). *Affective Methodologies : Developing Cultural Research Strategies for the Study of Affect*. London: Palgrave.
Krogh, E. (1995). *Landskapets fenomenologi.* Institutt for økonomi og samfunnsfag, Norges landbrukshøgskole, Ås.
Latour, B. (2005). *Reassembling the social : an introduction to actor-network-theory*. Oxford: Oxford University Press.
Lefebvre, H. (2013). *Rhythmanalysis: space, time, and everyday life*(Bloomsbury Revelations edition. ed.).
Lorimer, H. (2005). Cultural geography: the busyness of being `more-than-representational. *Progress in human geography, 29*(1), 83-94. doi:10.1191/0309132505ph531pr
Lovelock, J. (2000). *Gaia : a new look at life on earth*. Oxford: Oxford University Press.
Lowenthal, D. (2015). *The past is a foreign country - revisited*. Cambridge: Cambridge University Press.
Luckert, E. (2013). Drawings We Have Lived: Mapping Desire Lines in Edmonton. *Constellations, 4*(1). doi:https://doi.org/10.29173/cons18871
Manning, E. (2009). *Relationscapes : movement, art, philosophy*.
Massey, D. (1995). Places and their Pasts. *History Workshop Journal, 0*(39), 182-192.
Menke, C. (2010). Force: Towards an Aesthetic Concept of Life. *MLN, 125*(3), 552-570. doi:https://doi.org/10.1353/mln.0.0271

Menke, C. (2011). Ästhetik der Gleichheit (dOCUMENTA (13). In: Hatje Cantz Verlag GmbH.
Menke, C., & Jackson, G. (2013). *Force : a fundamental concept of aesthetic anthropology*. New York: Fordham University Press.
Merleau-Ponty, M. (2013). *Phenomenology of Perception*. Taylor and Francis.
Methi, J. S., Sergeev, A., Bieńkowska, M., & Nikiforova, B. (2019). *Borderology: Cross-disciplinary Insights from the Border Zone : Along the Green Belt*(1st ed. 2019. ed.).
Millington, N. (2013). Post-Industrial Imaginaries: Nature, Representation and Ruin in Detroit, Michigan. *International journal of urban and regional research, 37*(1), 279-296. doi:10.1111/j.1468-2427.2012.01206.x
Morton, T. (2010). *The Ecological Thought*: Cambridge: Harvard University Press.
Morton, T. (2013). *Hyperobjects : philosophy and ecology after the end of the world*(Vol. 27).
Morton, T. (2018). *Dark ecology : for a logic of future coexistence* (reprint edition. ed.). New York, NY: Columbia University Press.
Mould, O., Datta, A., & Odendaal, N. (2019). The spark, the spread and ethics: Towards an object-orientated view of subversive creativity. *Environment and Planning D: Society and Space, 37*(3), 468-483. doi:10.1177/0263775818822830
Neta, A. (2021). Obsolescence, Forgotten: "Survivor Holograms", Virtual Reality, and the Future of Holocaust Commemoration. *Cinergie*(19), 57-68. doi:10.6092/issn.2280-9481/12205
Nomade, S., Genty, D., Sasco, R., Scao, V., Féruglio, V., Baffier, D., . . . Geneste, J.-M. (2016). A 36,000-year-old volcanic eruption depicted in the chauvet-pont d'Arc cave (Ardèche, France)? *PLoS One, 11*(1), e0146621-e0146621. doi:10.1371/journal.pone.0146621
Nordby, G. (2020). Rjukanbanen - betydning, materialitet og tilstedeværelse. In: Universitetet i Sørøst-Norge.
Nynäs, H. (2018). The Fairy Tale of Early Twentieth-Century Hydropower Development in Norway: Theodor Kittelsen's Paintings of the Major Waterfall Rjukanfossen. *Environment, space, place*.
Oevermann, H., & Mieg, H. A. (2015). *Industrial heritage sites in transformation : clash of discourses* (Vol. 6). New York: Routledge.
Olivier, L., & Greenspan, A. (2011). *The dark abyss of time : archaeology and memory*. Lanham, Md: AltaMira.
Olsen, B. (2021). *After discourse : things, affects, ethics*.
Pallasmaa, J. (2012). *The eyes of the skin : architecture and the senses* (3rd ed. ed.). Chichester: Wiley.
Parker, N. (2009). From Borders to Margins: A Deleuzian Ontology for Identities in the Postinternational Environment. *Alternatives: global, local, political, 34*(1), 17-39. doi:10.1177/030437540903400102
Perez, C. (2002). *Technological revolutions and financial capital : the dynamics of bubbles and golden ages* (Paperback ed. 2003. ed.). Cheltenham: Edward Elgar.
Pettersen, T. (2018). Matters of care: Speculative ethics in more than human worlds by María Puig de la Bellacasa. *International Journal of Care and Caring, 2*(3), 445-448. doi:10.1332/239788218X15357295366217
Petursdottir, Ã., & Olsen, B. (2014). *Ruin memories: materiality, aesthetics and the archaeology of the recent past*: Routledge.
Pétursdóttir, Þ. (2019). Anticipated futures? Knowing the heritage of drift matter. *International Journal of Heritage Studies, 26*(1), 1-17. doi:10.1080/13527258.2019.1620835

Pétursdóttir, Þ., & Olsen, B. (2018). Theory adrift: The matter of archaeological theorizing. *Journal of social archaeology, 18*(1), 97-117. doi:10.1177/1469605317737426
Pickering, A., & Guzik, K. (2008). *The mangle in practice : science, society, and becoming*. Durham: Duke University Press.
Pink, S. (2006). *Doing Visual Ethnography*. London: SAGE.
Pink, S. (2007). Walking with video. *Visual Studies, 22*(3), 240-252. doi:https://doi.org/10.1080/14725860701657142
Pink, S. (2009). *Doing sensory ethnography*. Los Angeles: SAGE.
Pink, S., et al. (2015). Researching in atmospheres: video and the 'feel' of the mundane. *Visual Communication, 14*(3), 351-369. doi:https://doi.org/10.1177/1470357215579580
Plumwood, V. (2008). Shadow Places and the Politics of Dwelling. *Australian Humanities Review*(44).
Puig de la Bellacasa, M. (2017). *Matters of care : speculative ethics in more than human worlds*: University Of Minnesota Press.
Redmon, D. (2019). *Video ethnography : theory, Methods, and ethics*. London: Routledge.
Richards, B., & Haukeland, P. I. (2020). A phenomenology of intra-play for sustainability research within heritage landscapes. *Forskning & Forandring, 3*(2), 27-46. doi:10.23865/fof.v3.2406
Roberts, G. (2000). *The man with the movie camera* (Vol. 2). London: I.B. Tauris.
Rodney, H., Colin, S., Christina, F., Cecilia, Å., Anna, B., Adrian Van, A., . . . Claire, C. (2020). *Deterritorializing the Future*: Open Humanities Press.
Roelstraete, D. (2010). *Richard Long : a line made by walking*. London: Afterall Books.
Ryall, E., Russell, W., & MacLean, M. (2018). *The philosophy of play as life. New York: Routledge*
Salen, K., & Zimmerman, E. (2006). *The Game design reader : a rules of play anthology*. Cambridge, Mass: MIT Press.
Schafer, R. M. (1994). *The soundscape : our sonic environment and the tuning of the world*. Rochester, Vt: Destiny Books.
Schrumpf, E., Birkeland, I., & Johannessen, S. F. (2019). Innledning - Fra industri til industriarv. *Tidsskrift for kulturforskning : TfK*.
Schultz, C. K. N. (2021). Creating the 'virtual' witness: the limits of empathy. *Museum management and curatorship (1990), ahead-of-print*(ahead-of-print), 1-16. doi:10.1080/09647775.2021.1954980
Schumpeter, J. A., & Stiglitz, J. E. (2010). *Capitalism, socialism and democracy*.
Sennett, R. (2017). The sonically open city. Retrieved from https://theatrum-mundi.org/library/the-sonically-open-city/
Sennett, R. (2018). *Building and dwelling : ethics for the city*. London: Allen Lane.
Sesana, E., Gagnon, A. S., Bonazza, A., & Hughes, J. J. (2020). An integrated approach for assessing the vulnerability of World Heritage Sites to climate change impacts. *Journal of cultural heritage, 41*, 211-224. doi:10.1016/j.culher.2019.06.013
Shrum, W., & Scott, G. (2017). *Video ethnography in practice : planning, shooting, and editing for social analysis*.
Smith, L. (2006). *Uses of Heritage*. Oxon: Routledge.
Smith, L. (2021). *Emotional heritage : visitor engagement at museums and heritage sites*.
Smith, M., & Morra, J. (2006). *Visual culture : critical concepts in media and cultural studies : Vol. 3 : Spaces of visual culture* (Vol. Vol. 3). London: Routledge.
Smith, N., & Walters, P. (2018). Desire lines and defensive architecture in modern urban environments. *Urban Studies, 55*(13), 2980-2995. doi:10.1177/0042098017732690

Soini, K., & Birkeland, I. (2014). Exploring the scientific discourse on cultural sustainability. *Geoforum, 51*, 213-223. doi:10.1016/j.geoforum.2013.12.001
Solnit, R. (2007). Detroit arcadia: exploring the post-American landscape. *Harper's Magazine 315,* 65–73.
Solnit, R. (2014). *Wanderlust : a history of walking*. London: Granta.
Sontag, S. (2001). *Against interpretation : and other essays*. New York: Picador.
Sørensen, T. H. (2018). The Trails of Memory - Remembering the Heavy Water Raid in Norway. *Journal of war and culture studies, 11*(3), 240-254. doi:10.1080/17526272.2018.1490077
Springgay, S., Irwin, R. L., & Kind, S. W. (2005). A/r/tography as Living Inquiry Through Art and Text. *Qualitative Inquiry, 11*(6), 897-912. doi:https://doi.org/10.1177/1077800405280696
Springgay, S., & Truman, S. E. (2018). *Walking methodologies in a more-than-human world : WalkingLab*(Vol. 24).
Storm, A. (2014). *Post-Industrial Landscape Scars*(1st ed. 2014. ed.).
Storm, A. (2014). *Post-industrial landscape scars*. New York: Palgrave Macmillan.
Sutton, J. (1998). *Philosophy and memory traces : Descartes to connectionism*. Cambridge: Cambridge University Press.
Sutton-Smith, B. (1997). *The ambiguity of play*. Cambridge, Mass: Harvard University Press.
Svensson, D., Saltzman, K., & Sörlin, S. (2022). *Pathways : Exploring the Routes of a Movement Heritage*.
Tamm, M. (2013). Beyond History and Memory: New Perspectives in Memory Studies: Beyond History and Memory. *History compass, 11*(6), 458-473. doi:10.1111/hic3.12050
Thoreau, H. D., & Searls, D. (2009). *The journal, 1837-1861*. New York: New York Review Books.
Tracy, S. J. (2010). Qualitative Quality: Eight "Big-Tent" Criteria for Excellent Qualitative Research. *Qualitative Inquiry, 16*(10), 837-851. doi:10.1177/1077800410383121
Tsing, A. L. (2012). Unruly Edges: Mushrooms as Companion Species: For Donna Haraway. *Environmental humanities, 1*(1), 141-154. doi:10.1215/22011919-3610012
Tsing, A. L. (2015). *The mushroom at the end of the world : on the possibility of life in capitalist ruins*.
Tsing, A. L., et al. . (2020). Feral Atlas

The More-Than-Human Anthropocene.
Van Gogh, V. (2017). *Creative Inspiration: Vincent van Gogh*: September Publishing
Vannini, P. (2015). Non-representational ethnography: new ways of animating lifeworlds. *Cultural Geographies, 22*(2), 317-327. doi:https://doi.org/10.1177/1474474014555657
Waldenfels, B. (2011). *Phenomenology of the alien : basic concepts*. Evanston, Ill: Northwestern University Press.
Way, M. J., Davies, H. S., Duarte, J. C., & Green, J. A. M. (2021). The Climates of Earth's Next Supercontinent: Effects of Tectonics, Rotation Rate, and Insolation. *Geochemistry, geophysics, geosystems : G3, 22*(8), n/a. doi:10.1029/2021GC009983
Weber, A. (2019). *Enlivenment : toward a poetics for the Anthropocene*.
Zalasiewicz, J., & Freedman, K. (2009). *The Earth after Us : What Legacy Will Humans Leave in the Rocks?*

Zalasiewicz, J., Williams, M., Waters, C. N., Barnosky, A. D., & Haff, P. (2014). The technofossil record of humans. *The Anthropocene Review, 1*(1), 34-43. doi:10.1177/2053019613514953

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