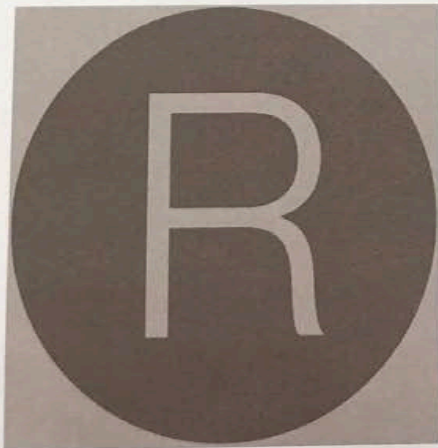


# Diffracting Matters

The Ruskin School  
of Art



# Diffracting Matters



 The North Wall  
Arts Centre

"It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what ties tie ties. It matters what stories make worlds, what worlds make stories."

— Donna Haraway

Diffraction is a useful metaphor that allows us to consider difference outside the ordinary paradigm of binary opposition, and to explore the potential of differentially creating new patterns of thought. Diffraction also lends a novel semantic to scientific knowledge, in line with developments in quantum field theory: instead of a static science reflecting an objective world or a disinterested measurement, we move into a space of embedded involvement with the world we seek to understand. In this world, we cannot remain impartial observers – our very observation entangles us within its unraveling.

With these thoughts in mind, The Flute & the Bowl, Oxford University's Art and Ecology Network, has brought together 14 artists from the Ruskin School of Art and 14 scientists from departments across the University, to investigate what a collaboration between Art & Science can offer on the subject of Climate Crisis.

Taking on this collaboration was no small order for practitioners working in fundamentally different fields, ranging from quantum physics to sculpture, from material science to video art. But faced with the vastly intersectional, global-scale threat of climate catastrophe, no one field could claim to hold all the solutions, and from this understanding, our collaboration arose. A diffraction strategy allowed us to share our ideas across disciplines without silencing, watching their frequencies collide, coincide, align, interfere and amplify, as new patterns of thought emerged.

This exhibition will be the first showcase of this collaborative work, exploring possible futures that require interdisciplinary solutions.

Anya Gleizer,

President and Founder of The Flute & the Bowl

Oxford Society of Art and Ecology



## Artists and Scientists

<i>Untitled</i> , 2019	Georgia Arben (Bachelor of Fine Art) & Kaya Axelson (MPhil Environmental Politics)
<i>You would fall off the side</i> , 2019	Eleanor Capstick (Bachelor of Fine Art) & Jojo Dieffenbacher (BA Modern Languages)
<i>Untitled</i> , 2019	Andrea Fortier (Master of Fine Art) & Johannes Fankhauser (DPhil Philosophy of Physics)
<i>White Noise</i> , 2019	Anya Gleizer (Master of Fine Art) & Kiril Maltsev (DPhil Philosophy of Physics)
<i>Watch as they all fall from frame, or are snatched!</i> 2019	Helena Greening (Bachelor of Fine Art) & Eleanor Holton (BSc Philosophy & Psychology)
<i>Shenka</i> , 2019	Holloway (Master of Fine Art)
<i>Frictions</i> , 2019	Paula Kolar (Master of Fine Art) & Nurul Amillin Hussain (DPhil Geography and the Environment)
<i>Atmospheric Gardens</i> , 2019	Jinjoon Lee (DPhil Fine Art) & Theo Stanley (MSc Nature, Society and Environmental Governance)
<i>A sheet of paper in the falling world</i> , 2019	Kwan Q Li (Bachelor of Fine Art) & Gabriel Darin (MPhil Socio-Legal Studies)
<i>Enter Subterranea</i> , 2019	Neeli Malik (Bachelor of Fine Art) & Tristram Walsh (BA Physics)
<i>Possible Futures</i> , 2019	Sarah Sands Phillips (Master of Fine Art) & Joshua Deru (MEng Materials Science)
<i>Autumn Salmon</i> , 2017	Eiko Soga (DPhil Fine Art)
<i>Lake Palcacocha</i> , 2019	Harrison Taylor (Bachelor of Fine Art) & Rupert Stuart-Smith (BA Geography)
<i>Air Scope</i> , 2019	Xia Zhi-Zhou (Master of Fine Art) & David Hubbard (MMath)
<i>The Entropic Silence of Fukushima</i> , 2019	Jason Waite (DPhil Fine Art)

## You would fall off the side

2019

Eleanor Capstick, Bachelor's of Fine Art  
Johanna Dieffenbacher, Bachelor's of Modern Languages

It does not strike you with its beauty, it just strikes you. The wind blows everything out and fills your head and the sky puddles in your eyes and the white grass flashes bone white when the sun hides. It is sharp, confrontational. You would fall off its side if you did not have the memories to hold on to. Paths are cracks, wrinkles that your fingers dig into. Rock flesh bone. Two girls spend two hours crawling up the hillside rolling about in the wimberries.

Trying to avoid a sense of powerlessness in face of climate change, we started thinking about the interconnection, not the separation, between humans and nature. Drawing on folklore, oral cultures and our shared experiences of bilingualism and feeling connected to/torn between different cultures and landscapes we began to question how cultural and linguistic frameworks shape the way we see, and interact with, the natural world around us.



Der Schöpfung immer zugewendet,  
Sehn wir nur auf ihr die Spiegelung des Frein,  
Von uns verdunkelt.

Rainer Maria Rilke, 8te Duineser Elegie

'Always turned towards creation, we see  
only a mirroring of freedom  
dimmed by ourselves.'

Rainer Maria Rilke, Eighth Duino Elegy

How can spoken language give voice to, and thus enhance and accentuate, the sensorial affinity and intimate reciprocity between humans and the envioning earth? How can we recuperate the poise that comes from living in storied relation and interconnection with the natural world around us?

The moorland landscape we both grew up in emerged as a space for eco-cultural contemplation; stories became the means by which to place ourselves in contact with the heather and winds and grasses and bogs and reeds and mist and breadth and fog.

Moorland does not support high biodiversity, is often discarded for being of 'no use' or is idealised for rewilding projects. Yet peatlands and moors have a unique capacity for Carbon sequestration, water catchments, and are a major part of our ecosystem. To the communities for whom this landscape is a map of memories and an archive of their life, it is richer than any rainforest. People can only imagine conserving or returning an environment to the state they remember it in. This speaks to the power of memory. We want to open a conversation about reversing this timeline and this empathy. To imagine futures.

Andrea Fortier, Master of Fine Art  
Johannes Fankhause, DPhil of Philosophy of Physics

The artwork is inspired by scientific insights into the horizons of absolute knowledge and the limits of accessibility thereof and to the very foundations of nature. Permanent engagement and the overwhelming flow of information is clogging our thoughts about what really matters.

We are confined in a space of noise, but we don't know it. We have all it takes to escape. We have all it takes to act.

The humbleness is inside us, but drowned out with the loud voices that have overtaken in this modern world. We have all it takes, but we lost sight of what we are.

## There is a room

Anya Gleizer

There is a room that dissolves you like paper  
it does not frighten me at all  
in dust that floats but doesn't settle  
enthraling quietly. The eye is drawn away  
and you are left to ponder the ins and outs of things  
subdued by lack of boundaries, you shiver  
are you actually? I could not tell  
the telling is the walls – there are no walls  
and you - dissolved - translucent sheen upon  
the water - still  
still it rains outside –  
rains in – where is the line?  
The line, the clothes – our sin  
within a square there is a lull, there is a frame  
without circumference could you name a circle?  
A circle drawn without a pencil  
See it clearly and let it melt  
is it strange to float in vacuum  
where the nothing is heard and felt and seen?  
The curtain is drawn but the scene is empty  
and the crowd is hushed and expectant still  
eyes blink – no longer windows  
grey-blue light on a window-sill  
absorbs the remnants you thought to cling to  
clinging quietly at your seams  
it seems, it's me, to me, I'm losing  
it could be you. The rain will rearrange  
the atoms – moving letters in a notebook  
dimensionless.

A year or so we have  
before the aging cycles all we are composed of  
of clay renewed before it turns to sand  
if you are sand and I am sand I wonder  
where can a barrier dwell  
between the hand and the other  
a clap is latent housed they say  
there is a bond between the mother and the child  
where is the end of one, one day another?  
I will not bother them. I know I am  
a core with a periphery, I think  
to think that if you turn the pages back  
A different me would drink a different you  
a topaz spring in the Sahara sand –  
I do not recognize it.  
A neighbor's tale of a vacation echoes in the further  
reaches of a hollowed dome.  
Echoes – me?  
Echoes – No.

## White Noise

2019

Anya Gleizer, Master of Fine Art,  
Kiril Maltsev, Philosophy of Physics, DPhil

We are ingrained within environment. Not only ecological, but psycho-spiritual, cultural landscapes shape our lives and bodies. Out of them we emerge, and into them we sink back, sharing the molecules that compose our bodies with insects, oak trees, car-diesel and the explosions of supernovas billions of years distant. The climate crisis is part-and-parcel of a communal delusion that we are discreet, separable, and independent agents trundling along in a passive, inexhaustible landscape. In fact, we are entangled with landscape and with each other, inseparable and (in the large scheme of things) ignorant of the unfolding of an environment which functions on levels many degrees of magnitude greater than we can apprehend. And we are the ones quickly becoming exhausted of delusions worn thinner by each passing hurricane and drought.

The capitalist mentality that fuels the current climate crisis sees landscape as a passive backdrop to human activity, a blank canvas waiting to be assigned meaning (or, more often than not, value), an inert resource waiting to be extracted and transformed in our tide of continuous productive/consumptive activity. In order to uphold this paradigm, the creative power of landscape is rendered invisible and any traces of its agency are swept under the carpet. The notion of quantum vacuum is a powerful lens through which we can revisit traditional Western views of landscape. The quantum vacuum is never truly empty, but a continuous birth of virtual particle-antiparticle pairs followed by their annihilation back to the void. Moreover these pairs of virtual particles exercise very real effects on surrounding "real" particles. What separates "real" from "virtual" is only a matter of time and continuity. This radical re-conception of emptiness invites us to consider the creative activity of our surroundings. When we see space as a field of active fluctuation, we begin to recognize our collective entanglement within that field

We are ingrained within environment. Not only ecological, but psyand our own selves as emerging from it. Through installation, performance and virtual reality, our work reveals the traces left by the dance of a landscape that is never truly empty, a landscape that is not a blank slate but an active creative force.

## Watch as they all fall from frame, or are snatched!

2019

Helena Greening, Bachelor of Fine Art  
Eleanor Holton, Bachelor's of Psychology and Philosophy

The threat of climate disaster can feel shrouded in layers of distance. Distance in space: We read about Marshall Island floods and heatwaves in the global South. Distance in time: We talk of future generations and fifty year targets. Distance in probability: We hear of the 'cascade of uncertainty,' of known unknowns and unknown unknowns. Social distance: we know Developing countries will be affected worst and hardest.

According to the Construal-Level Theory of Psychological Distance, we only directly experience the immediate time, the here and now (Trope & Liberman, 2010). Our mental representations of psychologically distant objects, such as the world in fifty years, or the suffering of flood victims in India, will be abstract mental construals. According to this theory, the further we are in psychological distance, the more abstract the level of construal. The different dimensions of distance (space, time, certainty, social distance) all align along the same axis in determining the abstractness with which we represent an object. In other words, distance in space (but not time) will have parallel levels of abstractness as distance in time (but not space). All these forms of distances are measured against our own egocentric reference point, and contribute in similar ways. The idea that spatial distance, temporal distance, social distance, and probability all have a common underlying axis is supported by studies showing strong associations between analogous levels of psychological distance on the different dimensions. To take an example, we are faster at associating probability words that are proximal in psychological distance with temporal words that are proximal in psychological distance (e.g. 'sure' with 'tomorrow') than with temporal words that are far in psychological distance (e.g. 'sure' with 'in a year') (Bar-Anan et al. 2007).

So why is this relevant for Climate Change? If the different dimensions of distance all align along same axis, then the threat of climate disaster provides a uniquely psychologically distant object. All four dimensions of distance heighten the sense that climate disaster is an abstract, remote threat. Avoiding climate disaster requires overcoming the obstacle of psychological distance and forming concrete plans on the basis of abstract ideas.

This project explores the different levels of psychological distance involved in climate change, through a physical landscape of our mental construals. By using all natural pigments we put the mind back in the physical world as a product of the very processes it threatens. The sinister image of the three Fates, the incarnations of destiny, show the inevitable movement of time toward these possible futures. Our challenges lies in making these futures, which can feel so distant, feel near.

## Shenka

2019

Holloway, Master of Fine Art

"I am not separate from the forest.  
When I was once, I was not myself.

Spirit grows alongside trees, and it knows this.

The underside of pulsing wings,  
whispering light in glassy creeks,  
and oak tips cutting howling wind  
have always been familiar  
because I saw myself in those places  
before I could recognize my own strange face.

Sometimes I die when I tread too far  
beyond the tendrils of roots,  
so the woods are where I want to be  
when I transform one more time."

## Frictions

2019

Paula Kolar, Master of Fine Art  
Nurul Amillin Hussain, DPhil Geography and the Environment

Our collaboration aims to explore the idea of entanglements between humans and non-humans within the various levels of friction that occur.

In Paula Kolar's work, she investigates ideas of migration, movement and routes, and has a deep interest in maps and the ways in which mobility is exercised and represented. In Nurul Amillin Hussain's work, she studies urban assemblages of sustainability and 'smart' infrastructures, looking at how they produce particular kinds of spaces. Both collaborators are interested in the idea of movement across and within spaces, and how these movements construct the nature of 'place'.

The concept of 'place' is a significant one in the climate change discourse. Various places have different meanings attached to them, often due to the way they are represented and talked about, and these constructions impact the ways in which we see them as particular kinds of spaces – for example, what makes a particular kind of landscape, such as the Arctic, more central to climate change discourse, than many other climate-vulnerable spaces? Our collaboration aims to provide a perspective in exploring this question by bringing the constructed nature of actors in the climate change discourse to the forefront. Climate change is our reality, but it is also a mediated reality that involves complex exercises of power and agency of some actors over others.

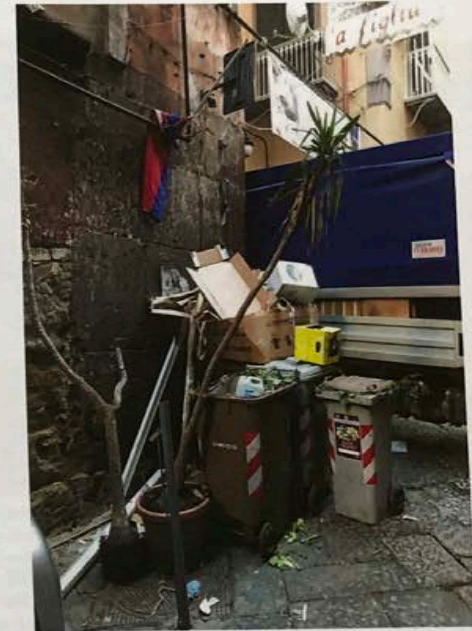
In our collaboration, you will see multiple screens of fabric being hung together. On these screens of fabric, there will be 'routes' sewn in thread, both across the single screens and between them. These screens attempt to represent the movement of human and non-human actors across various assemblages that construct the climate change discourse. The movement from one screen to the other, and the interaction between the screens aim to highlight the role of intersectionality in thinking about climate change, and how it necessarily experiences 'friction' with other issues in other places – from the local to the global. It is hard to isolate individual actors, factors and places when discussing climate change, and we want to highlight that it can often be more productive to see the problem as a moving whole. In addition to this, we have also attached handles to the screens. These handles are for the audience to interact with, whether by pulling or lifting. They illustrate not only the impact of humans on climate change discourse, but also the dominance of human actors over non-human ones, in the direction and shape of these discourses; although climate change assemblages are made up of the human and non-human, we believe that humans have an overwhelmingly significant part to play in the way we end up viewing climate change. These human 'entanglements' construct the nature of 'places', which then impact how we think of them, prioritize them, feel about them, and ultimately, save them.

## Atmospheric Garden

2019

Jinjoon Lee, DPhil Fine Art  
Theo Stanley, MSc Nature, Society  
and Environmental Governance

Yes, the glaciers are melting, because the temperature is increasing, because carbon dioxide levels are rising in the atmosphere. But by trying to understand climate change through graphs and phrases like "1.5 degrees", we overlook the natural-social interactions at the heart of the phenomenon, that are more fundamental, more pressing and more hidden. As Western culture has driven a wedge between the 'natural' and the 'social', we have come to see climate change as abstract and distant; a natural (chemical, physical) phenomenon that causes polar bears and glaciers to tumble towards inexistence, as white-coated scientists spout fact after fact about our impending doom



Consumption – the focus of our culture and the root cause of climate change – is lost when we look at polar bears and glaciers. The everyday practices that accelerate us towards climate catastrophe vanish when the monolithic phrase 'climate change' is brought up in conversation. Atmospheric Garden focuses on the embedded history of consumption in our throw-away culture that has brought us to the brink. Through introducing trash to a climate art exhibition, we want to open up a focus on how commonplace and immediate climate change is, in the home and in our culture. Atmospheric Garden makes sculpture from 'out-of-date' (but good-to-eat) food packaging, fished out of rubbish bins from Oxford. In the UK, it is a criminal act to take this ready-to-eat food from a dumpster, but not illegal to bin it. Is there a more fitting exemplar of our throwaway culture?

# A sheet of paper in a falling world

2019

Kwan Q Li, Bachelor of Fine Art  
Gabriel Darin, Master of Socio-Legal Studies

The unavoidability of natural-social interaction is a central theme of our work. The atmosphere, the natural source of human sustenance, is inescapably part-natural-part-social. Even in the most remote parts of the world, our local emissions have created an atmosphere that is dictated by human action. Travel to the North Pole – or any truly 'wild', 'Natural' (with a capital 'N') area – and unavoidably you will be confronted with a human-induced carbon dioxide count and a related temperature. Given that the atmosphere, in urban, rural, remote and 'wilderness' areas, is affected by our polluting activities, we can see that there is – in some way – a human effect everywhere. This natural-social atmosphere – the anthroposphere – is climate change.

Atmosphere is a fitting central focus for artistic responses to the geographical. There is, of course, the physical constituents of atmospheres: carbon, oxygen, pollution, CFCs. But there is also the affective feeling created by an atmosphere, a tangible but non-cognitive manifestation of the interaction of objects. For me, atmosphere is understood in material terms. But for Jinjoon, atmosphere is understood in terms of qi: objects have a relationality with each other. Atmospheric Garden draws inspiration from the urban garden to show how natural and social entities are never fully distinct but are always interacting. The garden, the ultimate combination of nature-and-society, is a space where humans produce atmospheres for their affective capacities, by creating and manipulating relations between objects, be they flowers, mosaics or trees. Atmospheric Garden is itself a garden, where the natural and the social interact with the viewer to co-constitute an atmosphere. Like atmospheres in the North Pole or the Amazon or Oxford city centre, the artwork's atmosphere is a natural-social hybrid, dictated and dependent on the human and the non-human and their complicated interrelationship.



Some random weeds grow besides our feet  
prosper beneath our eyes

*in plain sight*

Not out there  
where we want nature to be  
But right here  
in the cracks and fissures of urban ground  
Next to a sewage grid they  
thrive with their own pace  
on their own will,



Something deliberate  
lies  
beneath  
our feet  
Boundless  
but unseen  
The underground  
used to be  
too  
far  
away  
Out of sight  
that it wasn't  
even  
nature  
anymore  
Yet  
the underground  
has  
come back to us  
now  
As the  
Anthropocene  
narrative  
tells that  
humans  
are not  
anymore

*on Earth but in Earth*

We are  
so  
deeply  
entrenched  
that  
geological  
and  
historical  
time  
have  
become  
one

Where is climate change? How should we respond to such abstract and invisible concept, whose linguistic difficulty renders itself a specific new categorisation of 'hyperobjects' by Timothy Morton? As we all have felt recently, climate change is everywhere. Even our eyes fail to capture the effect, but the invisible has transformed into an total affect that compels us to learn anew how to feel, observe, and most importantly, communicate. The weeds and the underground – two seemingly polar ideas, but together symbiotic of the entrenched world today operating on a myriad of inter-related relationships. With Kwan's weeds on one side and Gabriel's grids on the other, our collaborative drawings attempt to spark a wider perspective that may draw the attention back from the evidence to the ontology, and refocus on the process in the same way as the result.

## Enter Subterranea

2019

Neeli Malik, Bachelor of Fine Art  
Tristan Walsh, Bachelor of Physics

Enter Subterranea explores the simultaneous importance and lack of importance of humankind. Beings higher and lower than we could ever imagine speak to us, warning us, and remind us of our humility, our naivety, and our eventual decomposition.

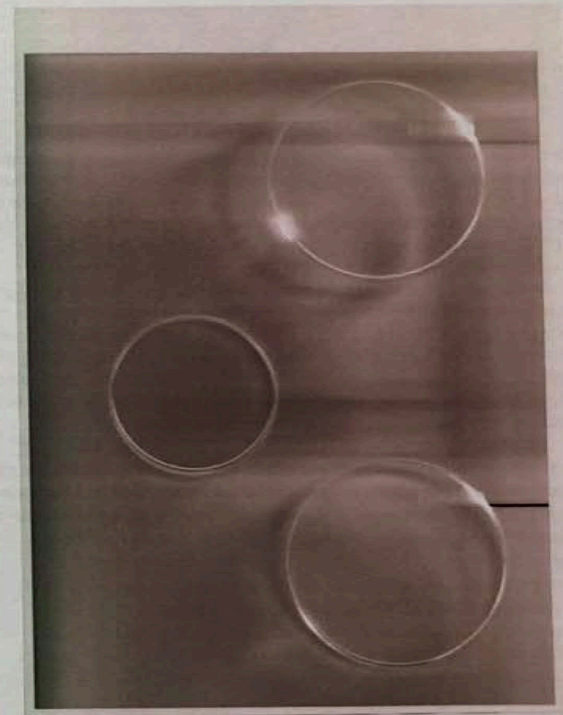
Inspired by the writings of Donna Haraway exploring the 'Cthonic ones':

"Cthonic ones are beings of the earth, both ancient and up- to- the- minute. I imagine cthonic ones as replete with tentacles, feelers, digits, cords, whiptails, spider legs, and very unruly hair. Cthonic ones romp in multicritter humus but have no truck with sky- gazing Homo. Cthonic ones are monsters in the best sense; they demonstrate and perform the material meaningfulness of earth processes and critters. They also demonstrate and perform consequences. Cthonic ones are not safe; they have no truck with ideologues; they belong to no one; they writhe and luxuriate in manifold forms and manifold names in all the airs, waters, and places of earth. They make and unmake; they are made and unmade. They are who are. No wonder the world's great monotheisms in both religious and secular guises have tried again and again to exterminate the cthonic ones"- Donna Haraway, *Staying with the Trouble*

## Possible Futures

2019

Sarah Sands s Phillips, Master of Fine Art  
Joshua Deru, MEng Materials Science



Joshua Deru and Sarah Sands Phillips are each preoccupied with light and material. Deru in his practice as a material scientist, is studying the effect of light, charge, and heat on developing solar panel technologies. Sands Phillips is a visual artist, whose work often engages materials that have been weathered by their impact with time, and imbued with unspoken histories. In what could be considered a crisis of our time, artists and scientist are coming together to form new ways of thinking, patterning together the linkages and commonalities that may allow us to move forward in our understanding and sense of agency with regard to climate change.

For Deru and Sands Phillips, their collaboration and discussion, while engaging the details and techniques of each of their respective disciplines, they found common ground in the poetic. The residues of their labs and studios, are the subject of their exploration as together they searched for hidden clues and debris that would provide insight into the world and their practices.

In the development of solar panels, sample materials are charged with light, and the interference of that light against the film helps researchers like Deru, map and record progress. Using photography and scanning technologies allowed each to catch various forms of light interference. In her curious handling of a collection of Deru's lab materials, Sands Phillips recognized this interference occurring in her documentation and exploration of petri dishes and panel samples, leaving their history in the fibres of the photographs.

These images allowed Deru and Sands Phillips to further investigate the material structure, composition, and organization of solar panel utilization, and how the nature of their collaboration has been a catalyst for a poetic pondering of possible futures.



## Autumn Salmon

2017

Video 18.54 min.  
Eiko Soga, DPhil of Fine Art

Since the summer of 2015, I have been working on a field research-based projects in Hokkaido, Japan. In 2016, I lived with Ainu people and studied the making of Ainu kimono, embroidery, and salmon-skin shoes. I am interested in art-as-sensory-geographic-research, to witness, document, and share acquired knowledge, culture, and social phenomena. In this video, I focused on the idea of process and making-as-sensory-research. In Ainu culture, salmon used to serve key economic, religious, and spiritual roles. This research allowed me to explore a wider understanding of Ainu culture—fishing, cooking, politics, economics, ecology, craft, gossip, folklore, and differences between the current Ainu communities in other regions. It was a process, in part, of finding clues from the past that might shed light on present issues.

## Lake Palcacoch

2019

Rupert Stuart-Smith, Geography  
Harrison Taylor, Bachelor of Fine Art

We began this project by considering the injustice and challenges to interpretability of climate change. These two issues are separate but interlinked and this project provides an opportunity to examine these critical and nuanced topics. The impacts of climate change are often violent and damaging, yet the attribution of harms to the actions of humankind often remains inaccessible buried in the scientific literature. While journalism plays an important role in translating scientific knowledge into a less esoteric format, the arts have been underutilised in interpreting the startling findings of climate research for a general audience. And when climate change is reported in the media, it far too often presents our planetary crisis as a partisan issue rather than disseminating objective facts.



Climate change is also fundamentally unjust. Its impacts are felt the most and soonest by the world's poor, inflicted on them by the actions and lifestyles of the wealthy. As the impacts of climate change become increasingly apparent, particularly in the developing world where exposure to the ravages of climate change is often greatest and financial ability to develop resilience is low, we cannot forget that our actions are harmful to others. Increasingly the science of climate change attribution can diagnose the impacts of climate change, identifying how the actions of emitters of greenhouse gases have affected weather and climate around the world. Justice, here, has two understandings: justice under the law, and an ethical or knowledge-based justice which informs our future actions.

Harrison Taylor is interested in ideas of narrativity, the 'sentimental documentary' form, image fatigue and banality. This lent itself well to this project, in which the intention was to reimagine his partner's (Rupert Stuart-Smith's) scientific research, and present aspects of it in new and challenging ways. Rupert's research focused on how greenhouse gas emissions have sped up the melt rate of Palcaraju glacier (Peru), increasing the rate at which the Palcacocha Lake, which lies at the foot of the glacier, has been filled. As a result of climate change, this lake has filled several decades sooner than it would have done in the modelled world that would have been, in the absence of human influence on the climate. Lake Palcacocha has become dangerously swollen, putting the city of Huaraz downstream of the lake at imminent risk of catastrophic flooding.

There is a historical precedent for this when in 1941, an avalanche from the same glacier fell into the lake, triggering such a flood and causing a significant loss of life. Rupert's research also focused on an ongoing lawsuit led by Saúl Luciano Lliuya, a farmer from Huaraz, against German energy giant RWE. Responsible for 0.5% of human carbon dioxide emissions, the case argues that RWE should pay this proportion of the costs of defending the city from such a flood. In a battle which has been dubbed 'David against Goliath', this case carries the potential for setting of legal precedent and establishing a framework in which those responsible for climate change could be held accountable for its impacts, in the courts.

In order to effectively react to these current problems through the use of artistic media, Harrison has produced a film called 'Lake Palcacocha'. This film, which acts as a 'sentimental documentary' since it is both objective and subjective, combines two separate narratives into one cohesive whole. One tells the story of a Bangladeshi fisherman called 'Ashik' and is set in a dystopian Britain isolated from a world that has been ravaged by the effects of climate change. The other focuses on the issue of climate change in Peru today and the lawsuit against RWE, mediating on ideas of justice and attribution by using scientific research and an interview Harrison conducted with Saúl Luciano Lliuya. The film is carried out against an image of a bathtub filling up, which acts as an extended metaphor throughout the video as a motif of Palcacocha, but also as a timing function where the banal and domestic are inextricably connected to the potential of disaster. The fragmented narratives, which are both prosaic and poetic, combine to create a meta-narrative that considers the schema of climate change in a different light.

## Air Scope

2019

Jo Xia, Master of Fine Art  
David Hubbard, Bachelor of Mathematics

The project my partner, Jo Xia, and I have been developing this year is conceptually based on the parallels drawn between local Oxford climate and the global climate. It can be difficult to conceptualise or imagine what the reality of some of the biggest threats humanity has faced, coming from changes in global climate, would look like on the local scale. A globally increased temperature of anything above and including 2 degrees celsius would cause worldwide increase in the risk of drought, flooding and extreme heat; yet on the local scale of Oxfordshire, it may still be hard to fathom how a 2 degree change could cause any significant alteration in our livelihoods and habits.

From the perspective of mathematical modeling, I will explore this "bubble" phenomenon by analysing local and global climate data to see how one correlates to the other. Relevant questions include whether the local climate in Oxford shows symptoms of a changing global climate, or whether it manages to stay sheltered in some sense? In the former scenario, will Oxford suffer from the negative impacts of climate change caused on a global scale, or, will climate change experienced in Oxford parallel what many other major cities in the world are doing to contribute to large scale environmental damage?

To find some answers to these questions, I will use statistical analysis to compare data from Oxford's meteorological centre and data that averages the change in the climate of the world as a whole, and see whether Oxford is changing as the world is, if it suffers from some sort of lag, or whether it deviates from global trends completely, perhaps as a result of being in a so-called 'bubble.'

My partner, the artist Jo Xia, explores another orientation of this idea. She is reversing the idea of a local climate being able to mask large-scale global-level changes by creating a canvas from different media – such as photos and prints – that represent Oxford and then painting over them. This will be a visual representation of the idea that the mindset required when it comes to climate change is to think on a global scale and not focus on an individual's impact as being small and insignificant.

## The Entropic Silence of Fukushima

Jason Waite

Jostling around our necks, the dosimeters flashed their readings and the ticking of the handheld geiger counter spasmed sporadically in alarm. We were bumping through the overgrown field behind reactor six, built by General Electric at the Fukushima Daiichi Nuclear Power Plant, on an old bus with plastic taped over the seats as the guide from the Tokyo Electric Power Company (TEPCO) was shouting over the struggling engine. In the process of describing TEPCO's storage for the daily accumulation of the large amounts of contaminated water used to cool the melted-down reactors, which leak into the broken infrastructure at the plant, the portable PA system broke. Neither the public relations manager nor his assistant could fix it, and there was no backup system available. The significance of this glitch was magnified when the bus stopped in the field alongside a small electricity transmission tower that lay slumped and twisted in the grass, this precarious tower was part of the system to supply electricity to the power plant to keep the reactors stable when the normal systems malfunctioned. When the earthquake shut down power production at the plant and felled this small tower it stopped the external power supply, and along with the subsequent swamping of the back-up generators by seawater from an ensuing tsunami, these tiny glitches added up to the largest nuclear catastrophe in history.<sup>1</sup> The blame, however, does not lie with the crumpled metal and salted couplings, but rather, as the independent commission verified the fault was a result of human error, the failure of imagination — a lack of contingency for contingency.<sup>2</sup>

Fukushima was not a disaster. The power, in this case the combination of capital and state, never took systemic risk into account, it had always considered calamity in a vacuum. When the plant lost electricity for an extended period of time and the earthquake destroyed the surrounding area, making it difficult to marshal resources, the Japanese Prime Minister and his cabinet pulled out the emergency guide for what to do in a nuclear disaster, flipped through the entire book, and found no mention of prolonged power outages. The guidelines had been developed in close relationship with the nuclear industry and government agencies who had only considered the danger of "short term" power outages, conceiving any nuclear event that might occur would do so without large-scale disruption to society and so believed any contingency plan could rely on immediate community support.<sup>3</sup> Their's was a disaster mentality.

Etymologically, disaster comes from "ill-starred," which purports the notion of a chance disruption. What happened at Fukushima was neither an aberration in the system, nor a chance disruption of an apparatus that then folds the disruption back into its workings. Rather, what happened in Fukushima obliterated the framework itself.

The construction of Fukushima Daiichi, part of a military-industrial complex— descending from the Manhattan Project and constructed on the site of a former WWII airbase used to train kamikaze pilots — had a built-in destructive capacity. The plant was expanded in the age of finance, driven by short-term profit cycles that shrink conceptions of time, the union of state, and unfettered capital in a neoliberal order. What be-

came apparent after March 11 was the inadequacy of the ideology itself. Propagated by and in the interests of the government and the nuclear industry, the notion of nuclear safety was a framework of thinking with a temporal myopia and an almost religious belief in acceptable risk, known in Japan as the "safety myth." This ideology produced contingencies for isolated disasters and, in 2011, wrought total catastrophe. While disaster is related to degrees of chance and outlying phenomena, the etymological root of catastrophe lies in a complete "overturning," a reversal of what was expected: a paradigm shift. Fukushima superseded contingency to lay bare the fragility of the underlying order, by overturning what was conceived of as feasible it opened up the necessity for a new modality of life in relationship to time and the environment.

#### Entropic Silence

On the bus tour, the amplification of the guide's voice ceased, indicative of another symptomatic silencing that has been multiplying in its effects since the catastrophe took place. The radiation fallout left towns, fields, mountains, and bodies of water contaminated, rendering them uninhabitable; one hundred thousand residents were forcibly displaced and a large swathe of ground was rendered a type of no-entry nuclear reserve — the fallout had produced a quieting of the land. This is the sonic landscape of the failure of modernity: A chain reaction of neoliberalism that in its wake produced an immobilizing void of sound. An entropic silence that expands, deterritorializing as it descends, exhuming stillness. Piercing the everyday acoustic sphere and draining its vitality.

Symptoms of this entropic silence abound. In 2010, Japan ranked eleventh in the world in media freedom, since the disaster accompanied a concerted project of government intimidation, corporate, and self-censorship that has created a repressive climate for speech and tumbled Japan down on the media freedom list to seventy-second, between Tanzania and Lesotho; a totalizing, sonic oppression of information.<sup>4</sup>

In 2016, standing in an alley in Seoul, a thin activist with a quiet fortitude from Saitama, a neighboring prefecture of Fukushima, shares the story of his father's death following March 11, 2011, from a type of cancer that was predominate in Belarus after Chernobyl. His family was divided about whether to go through the arduous process of suing TEPCO as cases have been difficult to substantiate in their singularity and the process is complicated, which many of the residents don't understand, and there are no clear standards determining what deaths relate to the catastrophe. Rather, it is the growing aggregate of these related deaths that provides a glimmer of the effects of the catastrophe<sup>5</sup> not limited by prefecture or proximity, while the entropic silence knows no boundary.

Raging against this silence, Hamako Watanabe, an elderly resident of rural Yama-kiya, Fukushima, was forced with her husband to evacuate to a cramped apartment in Fukushima city and increasingly found herself in turmoil over her separation from her home and land. When she was allowed to return to her contaminated home for a short visit, she sat in her garden under a cherry tree, dousing herself with petrol. Undertaking this act of self-immolation, she burnt the oxygen instead of breathing it as if it was a

firestorm to halt the advance of the silence. In the subsequent trial, this became the first suicide juridically deemed to be a direct result of the nuclear catastrophe and TEPCO was forced to pay compensation to the family. The symbolic nature of this simultaneously desperate and defiant act forced an acknowledgement of the emotional burden that accompanied the physical contamination and displacement.<sup>5</sup>

#### Privatizing Sovereignty

Wherever the radioactive isotopes landed the Tokyo Electric Power Company, in effect, became responsible for the welfare of the affected individuals; providing them with monthly compensation for their displacement and compensation for the loss of their homes and jobs. While the welfare of a population is usually the concern of the state, here the contamination effectively produced an amalgamated territory of private dominion. The nuclides fused with the atoms of capital, contamination set in motion a dual process of privation of community and privatization of individual well-being. Similar processes can be seen in hydrolic fracking for natural gas, which releases huge quantities of chemicals into the earth that can mix with the gas and seep into the groundwater thereby rendering local water supplies toxic. In these circumstances communities have lost their only source of water and in certain cases where the company has been found liable the naturally existing subsurface water supply and its infrastructure has been replaced with a privatized subsidy system of water that is trucked in, resulting in an expropriation of a basic resource that leaves in its wake a precarious delivery mechanism to reproduce a structure for everyday life.<sup>6</sup>

This reliance on a company to dictate the terms and timeline for one's future has caused widespread anxiety, with the capital-infused nuclides spurring distress and mental illness. In many hours of interviews with the artist Meiro Koizumi, one displaced resident of Fukushima spoke of his sleepless nights of uncertainty in having no agency over his future<sup>7</sup>. Asked to imagine his first family dinner on his future return home, the former resident's tale of an idyllic scene with the familiar taste of food is haunted by doubts and conflicting desires as to what his return will mean. Even in his imaginary account the family decides that they will leave the home that they had just settled back into.

The "clean up" program of TEPCO and the government entails the transfer of some of the waste to temporary repositories, or the burning of it, in order to reduce contamination levels in some of the affected communities. The "cleaned" areas of low-level radiation are then deemed safe for the former residents to return to by the local governments, even though questions have been raised about the long-term effects of low-level radiation on health.<sup>8</sup> Many residents have made the difficult social and financial decision to live elsewhere. Those one-in-ten who decide to return inhabit a largely vacant terrain with only fragments of the former social body left intact. While very few former residents return to their homes, compensation from TEPCO ceases only one year after the areas have been designated as "inhabitable," therefore transferring risk to the body of the residents while their livelihoods become a liability wiped from the ledgers of the company. With the opening of the towns a shattered sovereignty returned.

## Negative Commons

Neighborhoods in the city of Naples slipped into disarray as medieval diseases returned when trash piles accumulated to the size of small hills due to landfills being overrun by the illegal dumping of trash from across Europe. Silvia Federici notes that as opposed to waiting for the broken municipality to find a new repository a negative commons emerged among the Neapolitan community.<sup>9</sup> Neighbors exited their houses with shovels and began to work together, self-organizing their facilities for hygiene and putting into place a basic infrastructure to confront the contamination. Out of the detritus emerged the glimmer of grouping.

The relation of care in the Fukushima disaster also had the unintended result of producing agency in the local caregivers. Faced with a new contaminated reality, many parents in Fukushima and the surrounding area had to figure out how to protect their children from its invisible force. In particular, many mothers who did not traditionally participate in politics were galvanized after March 11 and became important activists, speaking out to have the remaining nuclear plants shut down and for transparent assessments of the contamination. While some mothers became outspoken activists, those who were displaced from Fukushima began to quietly lobby officials and committees in their new towns to advocate for the victims' rights and push for transparency of information about contamination levels. Even though some families were displaced into towns just a few dozen kilometers from their homes, they were considered different — as either refugees or guests. This forced the host towns, with their traditional power structures, to encounter and negotiate with difference — the mothers' activist work expanding the role of women in influencing the workings of society<sup>10</sup>. This form of care work breaks the silence with kindness to mend the fracturing of society and does so with loud demands for the co-construction of a very different future.

Beyond the family unit, care relations have also been instrumental in recombining the fragmented and scattered communities that remain. Hundreds of small prefab "temporary" container dwellings were constructed in a parking lot in Fukushima, five years later they still housed residents of Tomioka, a town of fifteen thousand people who had been forcibly evicted from their contaminated homes. Even though Tomioka was not a large town those housed together did not necessarily know each other before entering the encampment, and many of the residents were older and did not have family or others who they could live with elsewhere in Japan and so lost the immediate support networks that they had relied upon in their neighborhoods. We met with an elder-care nurse who had lost her job and home after the catastrophe, in the temporary housing she set about to get know her new elderly neighbors and with her ample time began to transfer her professional care skills to the new community. Such self-organizing of informal care infrastructures both maintained the health of precarious bodies and began to weave a new texture of a community together. Despite the difficult living conditions, five years on many elderly had begun to see the encampment as their home and the new bonds of friendship that had formed there as an indispensable part of their lives. While this should not be read as a form of permission for prevailing structures and their failures to forgo their basic responsibilities, what becomes evident in the aftermath of

Fukushima is that an emerging collectivity had formed around mutual aid and bonds of communal care that transcended the catastrophe, and in the new world which has opened up for those living in Fukushima forms of agency are not given but rather self-produced. If a shattered sovereignty is returning to Fukushima, in those fractures is evidence that different forms of life and self-organization are emerging with deeper roots and unknown possibilities.

## Notes


1. A comprehensive, concise account of the events surrounding the melt-downs at Fukushima Daiichi Nuclear Power Plant as well as a survey of the conditions leading up to disaster can be found in *The Independent Investigation Commission on the Fukushima Nuclear Accident, The Fukushima Daiichi Nuclear Power Station Disaster: Investigating the Myth and Reality* (London: Routledge Press, 2014). A more technical history can be found in IAEA Director General, *The Fukushima Daiichi Accident* (Vienna: International Atomic Energy Agency, 2015).
2. *The Independent Investigation Commission on the Fukushima Nuclear Accident, The Fukushima Daiichi Nuclear Power Station Disaster*, xviii.
3. "2016 World Press Freedom Index," Reporters Without Borders. Accessed October 8, 2016, <https://rsf.org/en/ranking>.
4. Japan Federation of Bar Associations, "Activities of the JFBA and local bar associations for victims of the Earthquake," 3.11 Great Earthquake. Accessed October 8, 2016, <http://www.nichibenren.or.jp/en/earthquake.html>; and "Death toll grows in 3/11 aftermath," Fukushima Minpo News, March 5, 2015. Accessed October, 8, 2016, <http://www.fukushimaminponews.com/news.html?id=481>.
5. A full account of Hamako Watanabe's suicide can be read in Mark Willacy, *Fukushima*, (Sydney: Pan Macmillan, 2013); and the subsequent court judgement, "Fukushima Suicide Victim's Family Wins Damages," *Guardian*, August 26, 2014. Accessed October 12, 2016, <http://www.theguardian.com/environment/2014/aug/26/fukushima-suicide-victim-family-damages-tepco-hamako-watanabe>.  
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6. Eliza Griswold, "The Fracturing of Pennsylvania," *New York Times*, November 17, 2011.
7. From *Human*, developed for *Don't Follow the Wind* (2015–ongoing) the long collective project taking place inside the Fukushima exclusion zone, artist Meiro Koizumi interviewed a former resident collaborating on the project on multiple occasions for over fifteen hours inside his present temporary residence and former contaminated home. The resulting three-minute sound work results from a prompt from the artist to the former resident to imagine the first dinner he would have on returning to his previous house. *Human* is installed as an audio track playing in head-sets in the resident's inaccessible home in the exclusion zone, waiting for the residents and public to be able to return.

8. The first large-scale long-term study of the effects of low-level radiation showing an increased risk in leukemia was published in 2015. Klervi Leuraud, et al., "Ionising radiation and risk of death from leukaemia and lymphoma in radiation-monitored workers (INWORKS): an international cohort study," *Lancet Haematol* (2015) 2: e276-81.

9. Silvia Federici, "Women, Reproduction, and the Construction of Commons" (lecture, Museum of Art and Design, New York, April 18, 2013). Online: <https://www.youtube.com/watch?v=zBBbVpbmRP0>.

10. Accounts of the relationship between care and agency in affected mothers in Fukushima are taken from research by David Slater, Haruka Danzuka, and Satsuki Uno related to the oral history archive *Voices of Tohoku*, presented at "Radical Distances: Fukushima and Okinawa," organized by the author and Camp at Shine Shokudo, Tokyo, November 2, 2015.



A black and white photograph of a forest path reflected in water. The path is lined with trees and leads into the distance. The water is calm, creating a clear reflection of the path and the trees. The image is framed by a light-colored, textured border.

A human being is part of the whole called by us "the universe," a part limited in time and space. We experience ourselves, our thoughts and feelings, as something separate from the rest—a kind of optical illusion of our consciousness. This delusion is a kind of prison for us, restricting us to our personal desires and affection for a few persons nearest to us. Our task must be to free ourselves from this prison by widening our circle of understanding and compassion to embrace all living creatures and the whole of Nature in its beauty.

— Albert Einstein