ECOLOGY AND ENVIRONMENTAL ART IN PUBLIC PLACE

TALKING TREE:
WON'T YOU TAKE A MINUTE
AND LISTEN TO THE PLIGHT OF NATURE?

REIKO GOTO COLLINS

PhD 2012

Ecology and Environmental Art in Public Place

Talking Tree: Won't you take a minute and listen to the plight of nature?

Reiko Goto Collins

A thesis submitted in partial fulfilment of
the requirements of The Robert Gordon University
for the degree of
DOCTOR OF PHILOSOPHY.

This research was carried out in connection with
On the Edge Research Programme,
Gray's School of Art,
Robert Gordon University, Aberdeen, Scotland,
funded by the Robert Gordon University Research Degree Initiative.

February, **201**2

Ecology and Environmental Art in Public Place
Talking Tree: Won't you take a minute and listen to the plight of nature?
Reiko Goto Collins

Abstract

My research started with a question: Is it possible to create change if we understand life is interdependent and interrelated with nature in our environment? I researched this question from the perspective of a practising artist in the field of environmental art in the context of ecology. I chose trees as the focal point of my enquiry as trees represent the largest living thing we encounter in our day-to-day activities. Empathy, particularly as defined in the work of Edith Stein, emerged as a significant critical construct which I used to examine the inter-dependence and interrelation of humans and trees as dynamic and diverse communities on earth. Empathy is related to metaphor, particularly Donald Schön's idea of a generative metaphor and George Lakoff and Mark Johnson's 'empathic projection'. These metaphorical conceptions can be relied upon to talk about trees without falling into anthropomorphising nature. The research was also informed by positions in the aesthetics of art. First Emily Brady positions human imagination as aesthetic mediation between human perceptions and scientific understanding of nature. Secondly Grant Kester's dialogical aesthetics that are informed by conversation, inter-subjective exchange and empathic relationship. I then sought to understand how empathy had been embedded in practices of art over the last thirty years. Particular artworks are selected because they are internationally relevant examples of work that intended to create change in a specific public sphere: *Time Landscape* (1978) by Alan Sonfist, *7000 Oaks* (1982) by Joseph Beuys and *Serpentine Lattice* (1993) by Helen Mayer Harrison and Newton Harrison. My interest in these works is focused on the potential for an empathic relationship with trees as living things that are embedded in specific environments. To meet this goal in my aesthetic practice, I have developed a discrete relational artwork in collaboration with a plant physiologist, a computer programmer and other artists to create the means to experience how trees 'breathe'. This is accomplished by translating the plant physiological processes - photosynthesis and transpiration - to sound using, and extending, a custom software system. I also invented *Plein Air*, an easel that not only holds the plant's physiological system and the sound system but also becomes a small portable station to observe various trees in different places. In my conclusion I examined the implication of ecological and symbolic meanings that go beyond an artist's authorship, which is created through this empathy-driven enquiry and shared experience between people, place and trees in public places.

Table of Contents page

List of figures

Acknowledgements

I dedicate this work to my father Tadao Goto. He taught me how to love plants and animals.

My work has been enabled through the support of many. It has been an honour to have Helen Mayer Harrison and Newton Harrison as friends and mentors. Their advice is based on world-class creativity and a depth of understanding about ecological relationships and challenges. Emily Brady, PhD and Trevor Hocking, PhD have helped me to know trees and the natural environment as sensible living things. They show me different ways to engage the natural environment.

Working with Professor Anne Douglas, the director of the On the Edge research has been ideal. Working with Anne is like swimming across a river to get to the other side. I hear her firm voice encouraging me to be cautious, but rigorous and relentless. I soon lose everything but myself and have a full experience of the river. This experience has given me a new confidence and an appreciation for reflection upon where I have been and need to go.

I appreciate the institutions that have given me opportunities to expand my research. Thanks to Innovation Design and the Sustainability Research Institute and Grays School of Art Robert Gordon University, The University of Wolverhampton, Peacock Visual Arts, The Headlands Center for the Arts in California, the Eco Link Association in Japan, and Bamboo Curtain Studio in Taiwan.

I have learned about the trees and woodlands in Aberdeen Scotland from: Geoff Banks, naturalist and photographer; Duncan McGregor, arboriculturalist and tree officer at Aberdeen City Council; and Steve Brown, woodland officer at Grampian Conservancy. Their passion and dedication for this region and its natural environment have informed and motivated this work.

My friend Dr. Stuart Hannabuss kindly offered to read and provide input during the revision stages of my thesis. His clear, precise and thoughtful advice was helpful. During this process I began to see the implications of my practice in new ways. Thank you.

I relied upon all the meticulous transcription of public dialogues and intimate conversations that were processed meticulously by Kitta Roos Potgieter, of Uppercase Transcriptions. My partner Timothy Collins and my friend, Nadia Scholnick, have read and commented on the entire thesis. Reading Stein was very difficult; they encouraged me to deal with that flock of words, bird by bird. They repeated this almost every day. Thank you.

Trees were also an important life force in my research. I had two most memorable moments. One was to see thousands of small birch trees that have been coming back in the Trossachs National Park. In my imagination I felt like a forest was moving. The second experience was finding caterpillars of the poplar moth on aspen trees I was working with. It surprised me to be with this native species, a moth that had survived a relentless series of landscape changes in Scotland. Through my study and practice I could begin to imagine a future landscape with these living beings.

AUTHOR'S DECLARATION

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Graduate Committee.

This study was funded by the Robert Gordon University Research Degree Initiative.

I was in attendance for all required courses in research methods and practice. I was a regular attendee at the research symposia each semester.

Relevant seminars and conferences were attended at which the work was often presented. External advisors were visited for consultation purposes. Papers were prepared for publication, and artworks were developed during the time of my study.

Publications:

Goto, R. and Collins, T. (2012 forthcoming) "LIVING Things -The ethical, aesthetic impulse". *In* Brady, E. And Pheminster, P. (eds.) *Tranformative Values: Human-Environment Relations in Theory and Practice.* London: Springer-Verlag.

Goto, R. and Collins T. (2011) *Plein Air: The Ethical and Aesthetic Impulse.* Online publication: WEAD Spring 2011. http://weadartists.org/magazine

Goto, R. (2011) *Beyond Planning and Empathic Engagement*. Online publication: Public Art Scotland. http://www.publicartscotland.com/reflections/75

Goto, R. (2011) Redrawing Kaprow's Calender. In Coessens, K. and Douglas, A. (eds.) *On Calendar Variations*. Woodend Barn, Banchory, Scotland.

Goto, R. (2010 forthcoming) Plein Air and Emergent Aesthetic and Ethical Impulse. *in* Montag, D., and Tyzlik-Carver, M. (eds.) *AIAS 2010 Proceedings.* Falmouth UK: University College Falmouth.

Goto, R. (2007) *The Journey*, in Douglas, A and Fremantle, C. (eds.), *research papers / Leading through practice,* a-n Magazine, March

Conference and presentations

2011 *A Tree as Living Thing* at Ryukyu University, Okinawa, Japan.

2011 *Making, Meaning, and Context: A Radical Reconsideration of Art's Work* at Goddard College, Plainfield, Valmont, U.S.A.

2011 ASA11: *Vital powers and politics: human interactions with living things* at University of Wales Trinity Saint David, UK.

2010 *Artistic environmental strategic planning • International case studies*, Bamboo Curtain Studio, Taipei, Taiwan.

2009 Advanced Studies programme *Designing Environments for Life* at the Institute for Advanced Studies, Glasgow, UK

2009 International Association of Independent Art and Design Schools (AIAS) at University College of Falmouth, UK.

2009 Sustainable Rural Development: Arts Intervention Strategies, Dapu, Taiwan.

2008 *Guests @ Gray's Visiting Lecture Programme*, Robert Gordon University, Aberdeen, UK

2008 *Artist Talk*, Headlands Center for the Arts, Sausalito, California
2008 *Embodied Values and the Environmental Research Workshop*, University of Edinburgh, UK
2007 Working in Public: A Public Conversation at the Scottish Parliament, Edinburgh, UK
2007 *Sustainable CITY*, 26th April, Manchester Metropolitan University, UK
2006 *Artful Ecologies*, July 12-15, University College Falmouth, U.K

Artists and residence program

2010 The Bamboo Curtain Studio, Fall, Taipei, Taiwan
2008 Headlands Artist in Residence Program, Summer, Marin, California, U.S.A.

Exhibition:

2011 *Calendar Variations*, a performance and exhibition in the workshop "Eco-tone: Object Space Entanglements", Nottingham Trent University, UK.

Goto, R., Collins, T., *Nine Mile Run and 3 Rivers 2nd Nature*, in "Too Shallow for Fiving-The 21st Century is Treading Water", curated by Speranza, C., Pittsburgh Jewish Community Center, Pennsylvania, U.S.A.

Calendar Variations, (exhibition and performance) curated by Douglas, A. and Coessens, K., Lang Byre Gallery, Woodend Barn, Banchory, Scotland.

2010 *Plein Air: The Ethical Aesthetic Impulse*. Peacock Visual Arts, Aberdeen, UK (Goto and Collins)

Word count of main body of thesis: 44,905 words

Signed: Reiko Goto Collins

Date 6, December, 2011

Chapter 1: Introduction

> Unable to decide for themselves, unable to objectify either themselves or their activity, lacking objectives which they themselves have set, living "submerged" in a world to which they can give no meaning, lacking a "tomorrow" and a "today" because they exist in an overwhelming present, animals are ahistorical.
>
> (Freire, 1998, p. 79.)

In contrast, humans are historical. If we are superior to animals, we must have an obligation to give meaning, promising a "tomorrow" and providing a "today." When we think about the public realm, often we think about ourselves, and forget other beings. We forget that every public place also consists of silent beings such as plants, insects, wildlife, soil, and air.

Ecological and environmental art has evolved in the last thirty years. It has been influenced by art, science, and philosophy as well as environmental activism. Thinking about my PhD study, what I want to know at this point of my life is how to extend my ecological and environmental art practice in order to respond to the implications of what Freire has said. Freire's dialogue was connected with self-empowerment for people who were oppressed by economic hierarchy and power in Brazil in the 1950s. His dialogical approach was about learning, reflections of mutual understanding, and praxis. I experience sympathy when I encounter derelict land or scars like acid mine-drainage sites. I have witnessed native plants growing in the cracks of a metal wall at Clairton Coke Works, the largest coke processing facility in the world, and I've seen a school of fish swimming in and out of raw sewage in Nine Mile Run creek. These moments remind me of what Freire said, "Without dialogue there is no communication, and without communication there can be no true education" (Freire, 1998, pp.73-4). How does Freire's approach work in a situation that involves animals and plants? What kind of aesthetics can emerge when we think about the public realm with other beings?

Is it possible to create change if people interpret and understand life as interdependent and interrelated with nature in our environments?

This question emerged after the nine years of research in Western Pennsylvania, U.S.A. where my partner Tim Collins and I were research fellows in the STUDIO for Creative Inquiry at Carnegie Mellon University. Between 1996 and 2005 we worked on two research projects: *Nine Mile Run* and *3 Rivers 2nd Nature* (Appendix A1 and A2). Both projects took an interdisciplinary approach to work

with scientists, engineers, architects, landscape architects, historians, educators, artists, municipal officers, college students and communities.

In the previous projects I found two approaches in collaboration. I can characterise this difference through metaphor. One approach to collaboration resulted in a black and white mosaic pattern. Each person involved took different roles and positions. The second approach was more integrated. It could be understood simply as a mix of white paint and black paint which, when mixed, creates a shade of grey. However, it also made me think about dismantling a brightly coloured Tibetan sand painting. All the vivid colours become a single greyish colour, but looking at the texture closely we found each colour was still intact in separate grains of sand. The integrated collaboration with many participants had an overall tone and individual voices were easily lost, but when you look closely, a more complex result is obvious.

Collins and I have been collaborating since 1987[1]. Collins' interest was in water and my interest was in living things and their places. Collins' theoretical interest was the public realm and emancipation of people, places and things. My interest increasingly focused on empathic relationships with living things and their environment. On a practical level in previous projects Collins planned, negotiated, directed and managed the projects. I designed workshops, organised educational programmes[2] and created the visual components such as exhibitions, announcements and documentation for each project. Collins clearly contextualised our work (1997-2005) and set out our intentions in his speech and writing. My role involved feelings, memories and perceptions in our presentations and contextualised work.

---

[1] *What You Don't See Can't Hurt You* (1987) in the exhibition *Elementary, My Dear,* San Francisco Art Commission Gallery, San Francisco, California. It was about creating a memory of a stream that had existed under the ground of the San Francisco Art Commission gallery by setting a 500 pound block of ice that gradually melted away in a sealed room. *Aqua Pura* (1992) San Francisco Arts Commission, Art in Public Places. Permanent Public Artwork for San Andreas Water Treatment Facility. Collaborative project with Tim Collins, San Francisco, California. It was a permanent public artwork at the San Francisco water department facility. We – Goto and Collins – dealt with the local drinking water system in relation to its history, its ecological system, memory of the place and people who worked in the watershed and the facilities. *A Liquid Evaluation Of The Brooklyn Waterfront* (1995), in the exhibition the Brooklyn Bridge Anchorage, and Creative Time, New York. It was about public space and public access and eco-systems along the post-industrial waterfront. The installation consisted of three components: the first one was a cardboard extruded map with Tree of Heaven – a common introduced species in the area; the second one was a terrarium with sand and small sea shells; and the third one was a wooden cart filled with water. The cart also held a projection screen in the middle that consisted of a video tour of the area between Gowanus Canal and Newton Creek and a textual piece that addresses basic water law and public access rights as delineated by common law. *Watermark- Aachen* (1999) in the Natural Realities Exhibition, the Ludwig Museum, Aachen Germany. It involved revealing the existing underground streams with gold leaf on the street pavement in the city, and also by planting willow and other riparian plants to celebrate the old fountains that connected to the underground streams.

[2] During the Nine Mile Run project Goto worked with the Pittsburgh Children's Museum, Valerie Lucas, an art teacher at the Homewood Montessori School and Dr. Marina Pantazidou, assistant professor of Civil Engineering to develop an education programme. It was also funded by the Pennsylvania Department of Education Office of Environment and Ecology. *Urban Watersheds and Brownfields* (Goto, R., Lucas, V. and Pantazidou, M. 1999) was published as an education resource for 7th grade teachers and their students. It focused on learning about a local watershed, human impact, stream environment and soil remediation with plants. Lucas emphasised art to learn about our environment. We used artistic observation techniques such as painting and drawing to look at the natural elements closely. < http://3r2n.collinsandgoto.com/revalued/urban-watersheds-brownfields/index.htm> During the 4th year of 3 Rivers 2nd Nature project Goto worked with JoAnn Albert, educator at Pittsburgh Voyager (currently named River Quest), an environmental education organisation in Pittsburgh Pennsylvania developing an educational guide with curriculum materials for 7-12th grade teachers and students. *Urban Watersheds*: *Water Quality in Allegheny County, Pennsylvania* (Goto, R. and Albert, J., 2004). It focused on watersheds, water quality parameters and monitoring the watersheds. <http://3r2n.collinsandgoto.com/revalued/water-quality-allegheny-county/index.htm>

During the two projects in Pittsburgh, a former steel town, Collins and I were influenced by the philosophy[3] and technology of restoration ecology. The work raised a question about our responsibility toward damaged and pristine environments. We read Eric Katz and Andrew Light to understand how we might get beyond the dichotomy of pristine nature or counterfeit nature. Ecological restoration will not prevent environmental damage but is instead intended to repair it. William Jordan's environmental ethics is built upon sympathy towards damaged environmental ecosystem and plant communities. In environmental and ecological restoration these philosophical arguments and practical applications defined an inter-relationship between humans and other organisms and ecosystems. This new practice was an intervention between eco-system and human-system that would seek experts, non-experts and communities to work together. It was also strategic knowledge that involved experience, knowledge, ideas, imagination and creativity that intended to create change in the environment. Towards the end of my PhD study I read Malcom Budd's book *The Aesthetic Appreciation of Nature* and came across a quote that was important to this issue. He said, "…our aesthetic experience of the natural world is often mixed – a mixture of the aesthetic appreciation of nature as nature with an additional element, of a variable character, based on human design or purpose or activity" (Budd, 2002, p.7). I agree with Budd. In my experience environmental and ecological restoration is not only limited to science, but also includes new ideas about the aesthetic relationship between man and nature.

The idea of environmental restoration was explored by other artists. Mel Chin and Dr. Rufus Chaney's *Revival Field* (1990-1993) used plant remediation. Their work at the Pig's Eye landfill in St. Paul Minnesota became an important art-science model. Georg Dietzler of Cologne, Germany was using oyster mushrooms to remove PVC (1995 until present). In Buster Simpson's *Hudson River*

---

[3] In an influential book called *Environmental Restoration*, edited by William Throop (2000), there were important arguments among philosophers: Robert Elliot, Eric Katz and Andrew Light. Elliot and Katz argued that a restored environment is not real nature. Elliot used the following example. If one owned an original Vermeer painting, what would be one's reaction to finding it is forged? The original painting represented pristine nature and the repaired painting represented a fake, or counterfeit nature. Elliot's argument was environmental restoration would not repair original nature, but it would be an artificial act and the creation of an artefact (Elliot in Throop, 2000, pp. 71-82). Katz agreed with Elliot and took the argument a step further. He claimed the real problem was anthropocentrism. Katz said, "Anthropocentrism, the major concern of most environmental philosophers, was only one species of the more basic attack on the pre-eminent value of self-realization"(Katz in Throop 2000, p.91). It might be another way of controlling the natural environment with new technology. Did we have the ability to restore damaged nature? Do we have an obligation to try to restore damaged nature? (Light in Throop 2000: p.99). Light's defence is that even if we cannot restore nature to its original state, we still have a moral obligation to restore nature. (Lights in Throop 2000: pp.95-111). The intention of environmental restoration was not anthropocentric. This was about creating a new relationship with the natural environment. The importance was not about the degree of originality but about creating a new way to engage with the natural environment. In another section of Throop's book, William Jordan, Founding Editor, enhances the idea of this kind of 'engagement'. He identified five important elements in environmental restoration: 1) the natural historic ecosystem, 2) economic transaction, 3) emergence of new and diverse abilities, 4) cultural history, and 5) creative expansion (Jordan in Throop 2000, pp.205-220). Jordan's book *The Sunflower Forest* (2003) was about emergent environmental ethics that are based on 'shame'. He used Sartre's quote to illustrate the idea of a land ethic; "shame…is shame of self; it is the recognition of the fact that I am indeed that object which the other is looking at and judging. Who is the other? Is the "other" among us, or is it them? Why can't we hear their voices? Who is responsible for the commonly held resources of air, water and soil? Have we lost our land ethic? Is there no shame?", Jean-Paul Sartre (Jordan, 2003, p.48). Jordan mainly looked at environmental devastation that would evoke a strong feeling such as shame and sympathy. It would make us question the past, present and future. How would we relate with this? Environmental restoration is a response to the shame but also a positive human participation to the environment. I understood two things from Jordan: 1) said when universal shame reached its limit, people would take action to change the place (Jordan, 2003, p.146), and 2) Jordan called this type of action 'creation that takes imagination' (Jordan, 2003, p.154).

Purge (1990), Simpson added large limestone discs to the river in order to change the pH level. Betsy Damon worked on planning and designing the *Living Water Garden* (1995-1998) in China. It was a large water treatment project to clean up the Fu and Nam Rivers. Allan Comp, historian, directed *AMD & ART* (1990 – 2004) in Vintondale Pennsylvania. Comp worked with a team of artists and scientists to restore the area that was severely affected by acid mine-drainage problems. Shai Zakai developed sculpture and performances to bring attention to the industrial abuse of a stream with her work on the Concrete Creek Project (1999 – 2002) near Beit Shemesh in Israel. Helen Mayer Harrison and Newton Harrison created *Endangered Meadow* (1994 – 1998) on the roof of the Kunst- und Ausstellungshalle, Bonn.

Artists including myself were making environmental and ecological artwork by collaborating with scientists but little was said about this new relationship in terms of art. I had a desire to build upon my own methodology that focused on a new relationship between man and nature. My point of entry into this work was through the dominant discourse that was centred on environmental and ecological restoration and its ethics and philosophy. The artwork done in the context of ecological restoration refers back to that literature.

In this research, my initial hunch was that I needed to shift from environmental and ecological restoration to a new position that is more deeply immersed in art practice. This new position would emerge from my research question about man's interdependence to the natural environment – that is development of understanding or insight through art practice that could lead to behavioural changes. This structure of the thesis reflects on the development of that argument as follows:

Chapter one introduces my research question by proposing to redefine the challenge of environmental and ecological understanding from the restoration paradigm to new insight, such as behavioural changes to man's dependency on nature in a non self-interested way.

Chapter two raises theoretical notions of connection and empathy from *[the philosophy of]* Edith Stein (a student of Husserl); metaphor by Donald Schön, George Lakoff and Mark Johnson with complimentary insights from the Harrisons' artistic approach in chapter three; the rational imagination of Emily Brady's environmental aesthetics; and finally the dialogical aesthetics of Grant Kester, with ideas of a dialogue between human and tree – ideas that are central to my thesis.

Chapter three tests and refines the framework in relation to external artists' practices. I chose *7000 Oaks* by Joseph Beuys and *The Serpentine Lattice* by Helen Mayer Harrison and Newton Harrison because trees form the subject matter in both pieces. Each case study consisted of a site visit, describing components of the artwork, analysing the background information, and synthesizing with

the conceptual framework that I developed in chapter two. The conceptual ideas were identified in the analysis to find out what each artwork was driven by.

Chapter four develops a new intervention that draws together my theoretical framework, the idea of inter-relationship and inter-dependence in newly constructed experiments. *Plein Air* was collaboratively invented as a portable easel that allowed artists to explore a tree as a living being. This chapter consists of two phases.

Phase one is about developing the systems that involves plant physiology, real-time sound system, sound translation and quality. During this period the conceptual ideas of "symbolic relationship", "empathic projection", "a sense of lived connectedness" and "rational imagination" were developed and clarified.

Phase two is about *Plein Air*, a real-time system in the context of an exhibition at Peacock Visual Arts in Aberdeen, the historical background of woodlands in Scotland, and public dialogues. The conceptual ideas of "background and foreground relationships", "empathy and sympathy", and "dialogical approach" were focused on in this process.

This chapter addresses critical comments on the role of the artist, the fusion of scientific and artistic methods, the importance of dialogical aesthetics and, more broadly, the aesthetic implications of using the integrated approach of *Plein Air*.

Chapter five concludes this critical framework, identifying ideas and practices that would enhance the artist's understanding of the work, and would have implications for wider interests in the field. I extended this in the final conclusion, where I summarised my journey, the initial hunch, the process of unpacking, refining, challenging, and testing the results in public and through the written analysis.

Chapter 2: Developing an integrated critical framework

Is it possible to create change if we interpret and understand life is interdependent and inter-related to our natural environment?

In relation to this question I started thinking about artwork that deals with trees and forests. I am interested in the human ability to understand the 'other'. I will unfold this question in relation to environmental art practice. This research has led me to theories of empathy followed by ideas about metaphor and imagination informed by new approaches to aesthetic philosophy. In this chapter my goal was to present a context for examining aesthetic aspects of exemplary environmental artworks such as Beuys' *7000 Oaks* and the Harrisons' *the Serpentine Lattice.* This is an artwork that I wanted to understand deeply with the intention of moving my own research forward. Another goal was to identify key conceptual elements and use these ideas to present a critical framework for the artwork including my own.

First my study focused on a basic theoretical understanding of empathy. I examined two sources. First Stanford Encyclopaedia of Philosophy *Empathy* (2008) is an online resource that gives a brief history of philosophical development. This article gives good background information for the second resource *On the Problem of Empathy* that was written by phenomenologist Edith Stein (1891-1942). In this investigation Stein mines phenomenological reduction, a method of answering and developing philosophical questions[4] (Stein, 2002, p.3.), to provide a description and explanation of empathy. It is a cognitive way to understand phenomena.

Secondly I explored metaphor and empathy that is related to the natural environment. I examined two metaphorical ideas that involve body and mind relationship. One is Donald Schön's "generative metaphor" to rationalise complex reality in a new way, and the other one is George Lakoff and Mark Johnson's "empathic projection" that can make us pay attention to how we are seen by the other.

Thirdly I reviewed the literature on Emily Brady's aesthetic of the natural environment. The key to my research subject is "imagination" that integrates a perception-based approach and a scientific-knowledge based approach in environmental aesthetics. Brady explained basic aesthetic theories relevant to the natural environment and art within environmental philosophy. She introduced three different approaches. The first approach is based on traditional aesthetic theory by Kant who defined aesthetic experience in terms of "disinterested contemplation of perception qualities" (Brady 2003,

[4] The goal of phenomenology is to clarify and thereby to find the ultimate basis of all knowledge (Stein, 2002, p.3.)

p.8). The second one is Allen Carson's scientific-knowledge based approach. The third one is the integrated approach of the two. Brady's philosophical position is in an integrated approach. Aesthetic experience can open up the spectator to explore new understanding and knowledge. In Brady's account imagination takes an important role to link perceptual experience and cognitive mental activity. I used Alan Sonfist's *Time Landscape* as an example to talk about how cognitive and integrated approaches are embedded in this public art process.

These three key components: empathy, metaphor and imagination are integrated in Grant Kester's dialogical aesthetics. This approach is based on words that have a strong relationship with empathy. I began with a review of how this particular aesthetic theory emerged in the avant-garde art tradition. Next I used Suzanne Lacy's *Roof is on Fire* as an example to speculate how the artist relies on conversation to create an artwork with ethical and moral intent. Finally I used the *Groundworks* exhibition as an example to speculate how the essence of dialogical art is recognised in environmental and ecological art.

I concluded that empathy (memories, imagination, metaphor and dialogue) provide important theoretical arguments for understanding 'the other' – including non-human species. These arguments also helped me to understand and explain the role of art that engages the natural environment. In handling philosophical texts, I used three frameworks to process ideas. The first came from my cultural heritage. I drew on stories from Japanese culture. These stories provided me with the means to test my understanding of Western philosophical ideas, particularly where these were expressed in concepts unfamiliar to me. The second came from my professional background and knowledge in the field of environmental art. I used familiar artworks to test my understanding of philosophical ideas that were foreign to me but seemed essential to my evolving understanding of my art practice. The third is my understanding of ecology and nature in art practice. These ideas came together and can be better understood using such critical feedback. I used these stories and my professional and personal experience as a means to formulate my response and to articulate complex meanings back to the reader through 'my voice' and to relate and articulate experiences that play a critical role in both artistic practice and in the aesthetic understanding of it.

2.1: Edith Stein: On the Problem of Empathy

> Empathy, which we examined and sought to describe, is the experience of foreign consciousness in general, irrespective of the kind of the experiencing subject or of the subject whose consciousness is experienced.
>
> Edith Stein, 2002, p.11

Empathy is central to the current understanding of art practice in environmental art by artists such as Beuys, the Harrisons, and Collins and myself along with other artistic practices like analysis and collaboration when engaged with projects about the natural environment. In this section I focused on a basic philosophical understanding of empathy. How is it different from other cognitive mental activities? The goal of this section was to understand and grasp how empathy enables us to understand the other.

Theoretical study of empathy

The word "empathy" comes from the Greek word *empatheia* (*em* + *pathos*) and means passion (Merriam Webster). P*athos* means feelings and emotion (Merriam Webster). The theory of empathy began to develop in philosophy in the late 19th century. The word "empathy" was used to translate the German word "Einfühlung" coming from the 19th century German romanticism of Johann Gottfried Herder, Novalis[5] and Friedrich Höderlin. It means "feeling into"[6] (Standford Encyclopaedia of Philosophy). The term was used during the German Romantic movement and focused on human interaction with the natural environment in relation to cultural myth and identity.

The late 19th century was also the beginning of the modern period that resulted in changes to the environment. People began to depend on technology more and more. The technology allowed people to live in cities, while nature such as water, land, mineral and plants became goods and resources. Human relationship with the natural environment became increasingly separated.

On the other hand around this time Emmanuel Kant's aesthetic theory in relation to the natural environment was seeping through Western cultures. European Romanticism and American transcendentalism were taking counter positions to rational science, industrialisation and urban life in the early modern period.

---

[5] George Philipp Friedrich von Hardenberg

[6] Edward Titchener (1867-1927) introduced the term 'empathy' in 1910 into the English language as the translation of the German term 'Einfühlung'.

In visual arts and literature there were some spiritual works that provided insight into how we could connect to the natural world. Henry David Thoreau lived in a small wooden cabin by the Walden Pond in Massachusetts for two years (1845-47). He invested time, labour, materials and his lifework in and around the pond. The word 'transcendentalism' originally came from Kant's 'Transzendentalismus'. In the new world it was understood as poetic intuition. It was a literary, political and philosophical movement and led by Ralph Waldo Emerson in Concord, Massachusetts. Around the same time in France the Barbizon School (1830-70) and artists such as Theodore Rousseau, Jean-Francois Millet, and Jean-Baptiste-Camille Corot set their artistic practices in a rural area rather than the academy in Paris. Millet's paintings were about the peasants and their relationship to farmland and dependency upon nature. There were no large mechanical devices to cultivate and harvest the crops. His paintings still appeal to us as a model of engaging with the land.

The original translation "Einfühlung - feeling into" is not about literally going inside of the other person but relying on careful observation and nonverbal communication such as facial expressions, eye contact, body gestures and other behaviours instead of relying on one's intellect.

Theodor Lipps (1851-1914), a German philosopher, adapted and conceptualised the notion of 'feeling into' to empathy as a phenomenon of 'inner imitation' (Stanford). Even though we cannot go inside of the other person, we rely on empathy, a special ability to understand the other.

Lipps created three situations in which empathy is at play - empathy in relation to

1. objects: = identifying in objects key qualities of shape, colour by which we see beauty in those objects;

2. human beings in which inner imitation is at work - we mirror the mental activities and experiences of another human being;

3. more generally 'universal apperceptive empathy' = empathy of nature.

The challenge for Lipps was to explain how the idea of empathy is different from the dominant idea 'I think therefore I am'. We understand others through cognitive means. Empathy as "inner imitation" was considered subjective, naive and an "insufficient broad conception of the methodologically proceeding in the human science" (Stanford). We rely on our experiences and knowledge to speculate about the other person. (Hugo Münsterberg calls this world "idea" (Stein, 2002, p.65) [Die Welt als Wille und Vorstellung]. Knowing the other and feeling the other are different. In section 2.2: Empathy plus metaphor in relation to the natural environment I talk about empathic projection, a metaphorical concept that projects yourself onto someone else.

Lipps' idea of 'inner imitation' is carried on and expanded by the fields of psychology and philosophy in the 20th century such as: Husserl, Scheler (1897-1920) and Stein. Husserl clearly is referring to

René Decartes' "Cogito, ergo sum" [I think therefore I am] in stating that pure consciousness is what is known indubitably (Stein, 2002, p. xvii). But this concept leads us to a question of how we know that what we are experiencing is nothing more than a projection. Husserl's idea does not address this question, instead he states our consciousness is always active and directed toward others and the environment. They share a common ground that is "empathy as a kind of act of perceiving, *sui generis*" (Stein 2002, p.11).

Edith Stein: On the Problem of Empathy

On the Problem of Empathy is a philosophical investigation. It was developed from Lipps's original idea "inner imitation". In this section I tried to understand what empathy is and how it functions. I also talked about living body, inner perception, foreign and familiar, feelings and actions, feeling of oneness, sympathy and empathy.

Living body

> An "I" without body is a possibility. But a body without an "I" is utterly impossible.
>
> Stein, 2002, p.47.

"I" is a person, self and individual. It differentiates me from "you" and others. A person consists of body and mind. In German there are usually two words for the English concept of 'body'. *Körper* is the physical body and *Leib* is the physical and psychic body taken together.

Stein is trying to understand how the living body deals with foreign experiences including the physical body, the other person and the environment. Stein defines a person as a "psycho-physical individual" (Stein, 2002, p. 37). The word psyche refers to self, mind and soul. The unity of physical body and psychic is called "living body". It is filled with outer perceptions, different senses such as: seeing, hearing, smell, taste, and touch. These physical senses are connected to feeling of sensations: light is bright or dim, sound is loud or soft, taste is bitter or sour and touch is warm or cold. We also feel hunger, pleasure, discomfort, pain, kinesthetical movement of space, resistance in muscles, tendons, and joints (Vallega-Neu , 2005, p.47.)

How do we notice our "living body"? When we are extremely calm and focused, we notice things to which we normally do not pay attention to such as our breath, heartbeat, temperature and subtle ambient sound. Our hearts "stop beating" for joy; we "wince" in pain; our pulse "races" in alarm; and

we are “breathless” (Stein, 2002, p. 50). These are Stein’s examples to demonstrate how we rationalise and express the unity of body and mind.

If I take this theoretical understanding into my experience and develop it through my inner voice I can develop this idea of subtle attention and integrate it into my own art practice. It is about observing objects and their relationship to the environment. Minnie Evans (1892-1987), an Afro American folk painter said, “Green is god’s theory of colour. Paint anything in green. There are six hundred and some shades of green” (Minnie Evans, 1983, Video[7]). This is not about how good the eyes of the artist are, but about skilful observation involving vision, body sensation and intellect. For instance, if I try to imitate the colour of a leaf by mixing primary colours, I start by mixing yellow and greenish blue. I then compare the result with that of the leaf. I may find the leaf looks more brownish. I add more purplish red. The colour of the leaf may look more greyish. I add a little purplish red and more greenish blue. I rely on my eyes to make a colour that matches the colour of the leaf. In this activity young children often do not know which colours to start mixing together, but they seem to enjoy both mixing paint and discovering new colours. In this way it is possible to make ‘six hundred and some’ shades of green.

As a young art student still in high school, I was painting a red fish on a white plate. In my painting teacher’s studio there was a skylight that was facing north. The teacher said, “Reiko, do you notice that the colour of the red fish is reflected on the white plate? The white plate is no longer white.” I replied to him, “Yes, I noticed that. It is not only the fish, but also the blue sky that is reflecting on the plate and the fish.” I had truly noticed these reflections before he asked. However, that was the first time I had taken the time to reflect upon the fact that I had noticed those things. His voice affirmed what I was seeing. Empathy is different from other intellectual mental activities. It is deeply related to the perceptions of body and mind. We usually do not notice this relationship. Once we start noticing it, we become sensitive to look at things much more carefully. This can be a practice. Stein said, “Every capacity can be strengthened by 'training'” (Stein, 2002, p.51). Empathy can be practised and cultivated by noticing the bond between body and mind.

Inner Perception

Expressing empathy does not need words to understand the other. When we see a sad face, we depend on our knowledge or experiences to assume another person’s mental state. I understand your negative feeling but my sorrow is different from yours. In this case objectivity seems to ignore the other

[7] *The Angel That Stands by Me - Minnie Evans’ paintings*. (1983) VHS videotape. A film by Allie Light and Irving Saraf, San Francisco, California: Light-Saraf Films.

person's individual differences and emotions. Stein extends Lipps' initial observation of 'inner imitation'. We not only know what is expressed in facial expressions and gestures, but also what is hidden behind them (Stein, 2002, p.5). Are we using our knowledge to understand or is something else going on?

Empathy is related to our living body and inner perception that consists of emotions and feelings. This mental activity is not only in the present but also in the past. I remember the fragrance of honeysuckles on a hot summer day. I can almost taste my favourite Japanese food. I can hear the tone of my friend's voice in my mind. We remember joyful moments of 'good old days' by remembering a situation. It is a trigger, so to speak. It can either come from real life or from within ourselves, our inner perception. This mental activity that consists of memory, fantasy and expectation is called "empathised experience".

> I am living "in" the one in the same way as in the other, experience the movements of the one in the same way as those of the other.
>
> Stein, 2002, p.16.

Lived body-empathised experience is the unique nature of empathy. Through our memories we re-experience certain perceptions in the present. Looking at the other person's facial expression and body gesture reminds us of feelings and emotions we have experienced before. This would make sense in dialogical approach that relied on not only words but also tone of voice, facial expression, eye contact and body gesture. I will talk about this again in section 2.4. Grant Kester: Dialogical Aesthetics.

If I relate this to my own experience, I am reminded of a Japanese traditional Noh play called "Izutsu"[8]. The word means a water-well cradle or a wooden frame for a water-well. One actor plays both female and male characters. The story is about a female ghost who talks about her noble husband who died a long time ago. She describes the character of her husband and their relationship. The turning point is when she wears her husband's clothes and looks into the well. She finds her husband as a reflection on the water surface in the well. This new figure represents her incarnation of love towards her husband and the transformation of the spirit. This new figure seems to be not just a type of understanding; she goes much deeper and becomes part of the subject. The ghost vanishes.

The spirit of the lady cannot accept her husband's death. Her soul wanders and becomes a ghost. What is the reflection in the well? If she is turned into her husband, will it end her sorrow for missing a beloved one? Her fantasy continues until she looks into the well. She sees her empathised self – the reflection on the surface of the water – as a reflection of the embodiment of her feelings and memories towards her husband. This rationalisation ends her delusion and spiritual roaming.

[8] Made by Zeami Motokiro (1363 – c. 1443) who was a Noh playwright and actor.

Inner perception works for understanding the other. It is powerful when we notice the other detects our feelings. This is explained further as empathic projection in “2.2: Metaphor and empathy”.

Foreign and familiar

> Empathy, which we examined and sought to describe, is the experience of foreign consciousness in general, irrespective of the kind of the experiencing subject or of the subject whose consciousness is experienced.
>
> Stein, 2002, p.11.

Stein describes a person as a psycho-physical individual that consists of the unity of body and mind. The outside of a living body is called “foreign” or “foreign body”. Our physical body and the other person are in the category of “foreign”. Stein asks, “What does the perception of foreign experience look [like]?” (Stein, 2002, p.21) We see a room, and we orient ourselves in the room. If we close our eyes our perception of the room changes drastically. Our mind does not have any special orientation. We have been learning and practising the sense of space/time orientation and distances through our living body since our childhood.

Again, relating this to my personal experience: when my hand makes a motion to touch something, I feel my hand even without looking at it. This is called “bodily perception of our own field of sensation” (Stein, 2002, p.57). Now, when I close my eyes and touch the surface of a table in front of me with my hand, the table is the foreign experience. I not only feel the texture of the table, but its coolness also makes me aware of the warmness of my own hand. The surface of my hand as a physical body becomes a focal point to experience the temperature differences. My living body is checking the warmness of my hand and the coolness of the table.

My partner says he recognises my hands because my hands are familiar to him. His hands are bigger and thicker than mine and rough and hairy. My hands are smaller, thinner, smoother and not hairy. I usually do not notice my hands in this way. In order to know my own hands I need the other. Reaching beyond oneself, but without losing or forgetting oneself, is the strength of empathy. We bridge the gap between self and other, known and unknown.

Feelings and actions

Feelings and emotions are driven by “will” that is one’s own experience and intellectual understanding. “Will” models one’s values and personality. Feelings can be expressed. We express our joy, anger, sorrow, comfort and discomfort through our facial expressions, the tones of our voices

and body gestures. Dogs, cats and some animals express their feelings, but humans are best able to express our various feelings and emotions. Expression can take different forms: facial expressions, body language, speech, politics, education and art. For instance feelings are central to the aesthetic response in abstract art. Jackson Pollock's paintings evoke the physical feelings of the movement of the artist and paint as drips, drops and splatters rather than brush strokes.

Expressions can be called actions. Stein said, "The creation of another world where I can do what is forbidden to me here is itself a form of expression" (Stein, 2002, p.52). We feel strong emotional surges when listening to Dr. Martin Luther King, Junior's famous speech, "I have a dream[9]". His speech evokes feelings, emotion and passion that speak to different individuals, diverse races and beliefs and resonate among many others at the same time. Many years have been passed since his death, yet his voice still resonates inside of me and I believe it will transmit to succeeding generations. His speech consists of words, his tone of voice and body gesture. This is also related to dialogue in art that I talk about in the section 2.4: Grant Kester – Dialogical Aesthetics.

Stein talks about Lipps; "Symbols for him (Lipps) are gestures, movements, resting form, natural sounds, and words (Stein, 2002, p.77.)" We express our feelings and thoughts not only through words, but also through many other forms. Each expression can be a symbolic act. This symbolic relationship and background-foreground relationship become important ideas in the case studies in chapter three.

Each word can be symbolic with meaning and feeling attached. This leads to a dichotomy between sign relationships and symbolic relationships in the next section.

Symbolic relationship and sign relationship

> We already have a sufficient distinction between 'indication' and 'symbol'.
>
> - Lipps in Stein, 2002, p.77.

Stein explained the difference between 'indication' and 'symbol'. First she used an example of smoke as an indication or sign of fire. It reflects our intellectual knowledge and understanding of fire. The sign relationship is a cognitive mental activity. Secondly she explained the symbolic relationship. She introduced another example: a sad countenance is the outside of sadness. This example shows a basic premise of empathy. When I see the other person's sad countenance, I empathically feel the sadness of the person. Theoretically the countenance is the background and the person's feeling is the

[9] The speech was delivered 28 August 1963, at the Lincoln Memorial, Washington D.C.

foreground. Stein's symbolic understanding has a background and foreground relationship (Stein 2002, pp.76-7).

We seem to rely on facial expression, tone of the voice and body gesture to judge another's state of mind. Face to face conversation is essential for all communications. Is our inner perception-driven approach accurate or reliable? In the 20th century our understanding is more complex and more involved in context such as history, culture and environment. We have begun to understand how context influences our understanding through different ways of seeing things. We take on and acknowledge different cultural positioning and perspectives. We begin to realise the gap between different cultures. The Whorfian hypothesis provides a good example. Benjamin Lee Whorf (1897 - 1941), American linguist, observed that Eskimos had many words to describe snow. They could experience much more diverse weather conditions and understand different types of snow in everyday life. This kind of understanding seems to be embedded in every culture. Does it limit the way we understand different cultures? Many years have been passed since this theory was presented. If we accept this idea (people might see, hear, taste, smell and feel differently), we have to stop making assumptions about the other. How do we perceive others without falling into deception?

Stein said, "Deception is possible" (Stein, 2002, p4). Deception can be made in different situations. I feel shame when I make a mistake. I might express my shame with an angry countenance; this can be misunderstood by other people. People can also hide their feelings. In different cultures and places people express their feelings and emotions differently. Romanticising people, places and things can create deception. Prejudice is caused by group attribution or cultural deception. Our feelings and emotions can be changed by age, physical parameters, and duration. I feel shame making a mistake. A few years later it is possible I might see the incident differently. This is no longer empathy but a process of rationalising the situation. These changes not only influence our empathy but also personal values. I propose that empathetic experience can be questioned by the intellect. We can understand and define self-deception.

In section 2.2: Empathy plus metaphor, in response to the question, "How we know our inner perception is not deception?" I talk about a type of metaphor called empathic projection. This metaphorical process rationalise us to understand the other. In this case metaphor and empathy are indirectly connected.

Feeling of oneness

A feeling of oneness is a sense of shared experience. What I understand of Stein's feeling of oneness is that it is not self-forgetfulness, but is based on our basic emotional responses rather than intellectual ones (Stein, 2002, p.17).

For example, watching fireworks makes many people say "Wow!" The moment the fireworks go off, many people express their admiration. People experience the same excitement. One enjoys not only the fireworks but also watching and sharing other people's excitement. In the case of fireworks, individual joy and other people's joy seem to be inseparable. This kind of shared experience is called feelings of oneness. Stein said, "The feeling of oneness and the enrichment of our own experience become possible through empathy" (Stein, 2002, p.18). Every time a firework is set off the excitement continues. Our inner perception seems to go back and forth between the present and past. Each excitement is stored as memory and is recalled with every burst of fireworks.

> What became, was lived, and is finished, sinks back into the stream of the past. We leave it behind us when we step into new experience; it loses its primordiality, although it remains the "same experience"… Just as solidifying wax is first liquid and then hard but still wax, so the same material body remains.
>
> Stein, 2002, p.69.

Each empathic experience can be ephemeral and changeable. However it can be built up as memory and enforce a certain inner perception. This accumulation of inner experience is different from other intellectual mental activities.

Feeling of oneness can be experienced in convivial occasions such as having meals together, attending sports games and music concerts. But every shared experience is not a feeling of oneness. The idea of feeling of oneness can be misinterpreted by group activities or business management strategies. The core of this experience is empathy that is not based on one's self interest.

How about feeling of oneness with non-human beings such as trees? Occasionally we may experience this with domestic animals. It is more like how we understand animal behaviour including how they recognise our behaviour. In some myth and folklores animals interact with the human world for a good or evil reason. I talk more about this kind of approach in the section 2.2: Empathy plus metaphor, in relation to natural environment. There is another kind of animal story that is truth-based stories - for example, a series of animal stories by Ernest Thompson Seton, author and artist; *King Solomon's Ring* (1949) by Konrad Lorenz, zoologist and ethnologist; *Born Free* (in the 60's) by Joy Adamson, naturalist and artist; and *Animals in Translation* (2005) by Temple Grandin, animal scientist. They are either scientists or have some science background. I assume this means they rely on scientific knowledge and objective methodology. They also take a passive observational approach rather than

experimenting with or on the animals. It follows the principle of empathy that is an act of perceiving foreign subjects and their environment with intent to draw a lesson from the other. I talk about an integrated approach to inform truth in section 2.3: Emily Brady: Aesthetic of the Natural Environment.

Animal stories are almost always happening in the shared environment between people and the other. My tree project in chapter four also relies on an empathic approach in the shared environment. People and trees are different but we share the same atmosphere, light, humidity and temperature. This phenomenological experience consists of body, mind and its environment, and is important for empathic relationship with the trees and their environment. This body relationship to the environment (and mind) is also related to Stein's "phenomena of life" (Stein, 2002, pp.68-71). Stein said, "[The phenomena of life] include growth, development and aging, health and sickness, vigour and sluggishness" (Stein, 2002, p.68). Through this conception we understand the other's physical and some mental states. Stein considers the phenomena of life in plants can be observed[10] (Stein, 2002, p.69). I talk about this again in the section called 'Empathy and trees'.

Empathy and sympathy

We experience the world through two kinds of mental activities: one is empathy and the other one is sympathy. Empathy is related to our perceptions such as vision, hearing, smell, taste and touch. We sense brightness, dimness, loudness, softness, bitterness, sweetness, heaviness and lightness. Stein said, "Empathy deals with grasping what is here and now, it is trivial to say that it is not ideation" (Stein, 2002, p.7). "This is intuitive comprehension of essential states" (Stein, 2002, p.7). My study seeks empathic relationship with trees. I must avoid anthropomorphising nature. However anthropomorphising nature cannot be excluded in metaphorical creation. I will talk about this in the section 2.2: Empathy plus metaphor, in relation to the natural environment and to my own practice in chapter four.

Empathy is emotions and feelings: joy, sorrow, desire, comfort and discomfort. These basic feelings are embodied in us. Another basic understanding of empathy is called "primordial". Stein said, "All our own present experiences are primordial" (Stein, 2002, p.7). Empathised experience such as memory, expectation and fantasy is not primordial. Ideation and intellectual mental activities are non-primordial. Max Scheler identifies an important primordial experience called "emotional contagion" (Stanford Encyclopaedia) that describes a certain emotional reaction. For example, a baby crying can

[10] Stein said, "Furthermore, we not only see such vigour and sluggishness in people and animals, but also in plants. Empathic fulfilment is also possible here" (Stein, 2002, p.69.)

trigger another baby to cry. I can think of the scope of daily experience when someone smiles at me - despite hardly knowing the person or sharing experience, I smile back.

Taking in the experience on offer without conflict or resistance is called positive empathy. It is like emotional contagion; a child's laugh can cause another one to laugh without any specific reason. This experience seems to be simple but embedded in us as an intrinsic quality of human beings. It is not only perceiving the other person's mental condition but also expressing it back to the other.

Sympathy is close to empathy but different. It involves one's self-interest, reasons and intellectual activities. Sympathised memories are contextualised rather than reacted to as feelings. We project our sympathised memories towards the other person. This part of memory is intellect.

Sympathy can be recognised as universal feelings such as responses to death, disaster and other unfortunate events. We want to help others because we feel distressed, anguish, upset, worried, disturbed and troubled. Sympathy is motivated by reasons to relive our own mental pain.

Empathy and sympathy can cause emotional conflict. A child who plays joyfully does not know that the child has been diagnosed with a serious illness. Scheler calls it "affective empathy" (Stanford). Our mental activities evolve at a deeper level by understanding the other person's conditions. Stein calls this kind of conflict "negative empathy". The description of "A child who plays joyfully" is an empathetic response. The following sentence and the emotional response provide a negative-empathy example. Sympathy is conditional. Empathy is not based on one's self-interest. Empathy can go beyond self-interest, a moral dimension that goes beyond wanting simply to get rid of one's own bad feeling. The tension between empathy and sympathy are also recognised in artists and non-artists, for example, in the Harrisons' dialogical approach in chapter three.

There is a metaphorical story that delineates how sympathy and empathy interact in a situation. The story is written by Dazai Osamu (1909-1948), one of Japan's great writers. It is entitled *Hashire Mellos*[11] (Run Mellos). There is a king who distrusts people and decides to test friendship by arresting two young men. One of them is Mellos, known as the fastest runner in town. The king tells Mellos to run to the next town and return by the next sunset – if not, his friend's life will be traded in for Mellos's life. The story can be interpreted as emotional entanglement between sympathy and empathy.

[11] There was a king who loved solitude and did not trust other people. He believed friendship was conditional and hypocritical. In order to prove this he arrested two young men known by their friendship, and declared he would execute them in front of the public. One of them was called Mellos who was known as a great runner. The king challenged Mellos, "If you run to the next town and come back by the next sunset, your friend will be released. But you will be killed instead." Mellos immediately started running to save his friend. But once he reached the town he began to doubt why he had to go back. But he remembered about his friend and the wonderful time they had spent with each other. Mellos ran again. The king and the audience were surprised to see his return just in time. Both friends embraced each other. Mellos said, "You must hit me. I am ashamed. At one point I decided not to come back to you." His friend who was showing a tremendous amount of gratitude towards his courageous friend shook his head no and replied to Mellos, "You must hit me. I am the one to be ashamed. When the sun was going down I thought you would never come back." They asked the king to be executed together. Both friends were crying and so was the king. Finally the king not only spared their lives, but he celebrated the two friends and asked them if he might join their friendship.

I begin to understand that differentiating empathy from sympathy is an important act I have to clarify in my practice. For instance it may take the form of being sad to see deforestation or dying trees in city-streets. The second might take the form of a critical creative engagement with trees, and the identity and role of both the artist and her collaborators in response to an artistic project. How do I shift from one condition to the other? The key to this process is to dismantle the basis without destroying it. Empathic exchange seems to be the key. This question is addressed in two case studies about Beuys and the Harrisons in chapter 3.

Empathy and trees

When we have headache or toothache we almost feel the pain every second. It is not only related to our health but also mental state. When we are under stress, we can experience our body differently. It is also influenced by environmental conditions – for example, being in a tiny room without windows makes some people uncomfortable. Stein calls consciousness of our physical body "phenomena of life" (Stein, 2002, p.68).

Stein's subject is mainly human. I have seen intelligent animals such as dogs and cats also express when they are comfortable or uncomfortable. How about trees and other kinds of plants? I understand trees do not have feeling, emotions and mobility like we do. However they have senses that respond to light, temperature, humidity, and air. By observing them we can perceive their physical state such as vigour and sluggishness or comfort and discomfort. When we share the same environment with trees, we also sense light, warmness, humidity and air quality. If we express comfort and discomfort, can we not empathise with trees whose leaves wilt and have other ways (colour, droopiness) to indicate distress and wellbeing?

According to the Stanford Encyclopaedia of Philosophy, recent neurological discovery reveals mirror neurons that function such that 'in perceiving other people we use different neurobiological mechanisms than in the perception of physical object'. This enforces Lipps' idea how we rely on empathy as spatial mental mechanism to understand the other. This information also explains to me why we make a clear separation between human and other living things. We notice that some children are sensitive to animals' comfort or discomfort and they express their concerns. Are they able to trust the empathic response more freely than adults? Or are they simply confusing the boundary, and innocently anthropomorphising nature? Or are some unable to recognise animals to the point that the discomfort doesn't register? This line of questioning brought me to ask, is it possible to experience plants empathetically through careful observation? I will talk about empathic exchange with trees in my own practice in chapter 4.

Summary

In Stein's section, two kinds of inner perception are recognised. One, empathy is not based on one's self-interest. Two, sympathy is based on one's self-interest in context. Both mental agencies seem to be related to our helping behaviour. Sympathy is an agency for problem solving. Sympathy-based practices include environmental management, planning and decision-making. These practices require certain knowledge about the place, community, available resource and technology. Some artists also rely on a sympathy-based approach. In chapter three I talk about the Harrisons who propose an "eco-security system" that is based on Gross National Product to establish a fund for environmental restoration. This kind of intellectual activity reflects upon the issues and problems while empathy works well for taking care of people: children, family, friends, and elderly people. Empathic exchange can be recognised during interaction with other living things. Caring for plants and gardens is different from caring for humans and intelligent animals although we experience satisfaction when we see robust health and growth of plants. According to the Stanford Encyclopaedia of Philosophy if empathy, altruistic motivation, and sympathy work together positively, it can be in service of a helping behaviour. Empathy and sympathy are separate mental activities. A behaviour intending to help would work best if we understood each other better.

In the next three sections I investigate metaphor, imagination, and dialogue that support the idea of empathy. In chapter 3 and 4 I reflect upon the entire theoretical framework, using it to reflect upon historic artwork and my own practice where trees are the primary subject matter.

2.2: Empathy plus metaphor in relation to the natural environment

In the previous section I have talked about a feeling of oneness with non-human beings. In literature I recognise two kinds of animal stories: one is a story based on truth and the other one is metaphor. In this chapter I focus upon two kinds of metaphors that are related to empathy: one is called a generative metaphor; the other one is called empathic projection. Metaphor is crucial to understand Beuys and the Harrisons' work in chapter 3. Metaphor takes an important role in my own practice, which I talk about in chapter 4. Metaphorical speech is indirect because the story appeals to our empathised experience rather than to the direct subject under scrutiny. Metaphor enables us to represent forms of reality with a vividness and meaningfulness that might otherwise be absent. The power of metaphor is a transformative quality in the case studies and my own work.

In the previous section I have talked about how we understand the other through facial expression, tone of the voice and body gesture. Our body is like a container or substance that holds and transmits our thoughts and feelings. A person's state of mind can be described as a metaphor through body and mind relationship. Metaphor can be used to describe empathic relationships that include non-human species.

I know how I feel but I cannot see my face. I empathically project the image of my feeling onto something else. I carry the image of the feeling that I have experienced from the other. I reflect my feeling on another person's face, a situation or words. Linguists George Lakoff and Mark Johnson have said that "…the essence of metaphor is understanding and experiencing one kind of thing in terms of another" (Lakoff and Johnson, 1980, p.5.) The experiential character of a metaphor can remind us how we are seen from an environmental position. In relation to my research question, 'Is it possible to create change if we interpret and understand life is interdependent and interrelated with nature in our environment', it will be helpful to understand how metaphor 'enables' the sensitivity and attention that has empathic potential.

The etymology of metaphor comes from the Latin *metaphora*, meaning "carrying over" and the Greek *metaphorerein*, meaning "transfer". It is a figure of speech in which a word or phrase literally denoting one kind of object or idea is used in place of another to suggest a likeness or analogy between two things (metaphor, 2011, in Merriam-Webster.com).

Metaphor is a figure of speech that describes something indirectly. Metaphor takes many forms, such as visual, mathematical and musical forms. It can be a few words or a story. Myth, folklore and poetry are also metaphors. The mythic role of woods and fierce animals in Brother Grimm provides a moral

lesson, while Oscar Wild's *The Happy Price* appeals to the human sensitivities toward others. Idioms are also a type of metaphor that is embedded in our everyday conversations. I remember some Japanese idioms[12] hat use plants to express ideas. We understand these idioms are not about plants, but both the ideas and natural phenomena are entwined imagery.

Ki ni yorite uo wo motomu 木に縁りて魚を求む
Literal: Looking for a fish by a tree
Wrong methodology does not achieve the goal

This idiom is a teaching of Mencius 孟子 (372-289 BC), a Chinese philosopher. This is an example how Japanese language and wit have been influenced by Chinese. Metaphor is cultural but the idea can be transferred amongst foreign cultures. In this section I mainly talk about rhetoric forms of metaphor although metaphor is a central aesthetic element in art. Artists like Caspar David Friedrich delineate symbolic woods. Anselm Kiefer, a neo-expressionist painter, also relies on mythologies metaphorically. In chapter three I talk about Joseph Beuys' *7000 Oaks* that is about symbolic meaning of oak in Celtic culture. The Harrisons rely on metaphorical concepts to create both narrative and visual metaphors.

Generative metaphor

Donald Schön's idea of a generative metaphor is equivalent to the Harrisons' *metaphorical flip* (see Chapter 3: *the Serpentine Lattice* by the Harrisons, pp. 72-4). They use flood control as an example of this. Flood control is generally understood as engineering methods to prevent flooding. If I take a person who lives in the flood plain, flood has a connotation of a natural calamity. The Harrisons add another perspective "flood control is the destruction of flood plains." This explanation takes into consideration the river or stream that needs to expand the area during a storm. The Harrisons call this conceptual shift a "flip". It shifts the position from human to the natural system. Based on these two perspectives they introduce an alternative idea to deal with flooding. I will talk more about this in the

12
Ne mo ha mo nai 根も葉もない
Literal: Rootless also leafless
"Unfounded rumour"

Ne ni motsu 根に持つ
Literal: With roots
"Have a grudge against someone"

Ki ni take wo tsuida you 木に竹を接いだよう
Literal: As if connecting a piece of wood to bamboo
"What you are doing is *inconsistent*"

Uri hutatsu 瓜二つ
Literal: two melons
"Be exactly alike" (spitting image of another)

Ki wo mite mori wo mizu 木を見て森を見ず
Literal: cannot see the wood for the trees
Focus on details and miss the main point

chapter three. A generative metaphor is a type of metaphor used to rationalise a complex reality in a new way that in turn shapes how we respond to, or interact with, that setting. It does not directly solve a problem, but sets a situation "…in which they describe what is wrong and what needs fixing" (Schön, 2002, p.138). Schön talks about a paintbrush as "a kind of pump" – an equation between totally different things: a paintbrush and a pump that by coming together enable the subject, "paintbrush", to acquire a new meaning, "paintbrush as pump". This, in turn, enables the paintbrush to be designed differently. This argument was based on working with a group of product-development researchers to develop a new paintbrush made with synthetic bristles. A researcher made a remarkable observation: when a paintbrush is pressed against a surface, paint is forced through the space between bristles onto the surface. Generative metaphor comes from deep observation. It also relies on language to clarify what has been seen.

Schön also talks about generative metaphor as problem-setting in social policy (Schön, 2002, pp. 143-150). One general perception is that squatter settlements are defined as a "congenital disease" (Schön, 2002, p145). An alternative perception is that squatter settlements are "natural communities" (Gleicher and Fried in Schön, 2002, p. 147). I can imagine the economical and cultural development of the community as a forest succession with pioneer species. If we look at a place in this metaphorical way, the solution is not about solving problems and fixing things, but rather about supporting the community's legitimate initiatives such as "…individual families, settler's associations and municipal agencies" (Schön, 2002, p. 158). The former perception of a place based on a perception of the health within and about a community maintains the relationship between experts versus community. The latter perception makes a direction towards a bottom-up structure with wider and more diverse participants.

The process of a generative metaphor is empathic. The first example "a paintbrush is a kind of pump" raises body-bound consciousness. The second example "squatter settlements as a natural community" is much more complex and combines information-rich experiences and the evolution of communities. Generative metaphor enables not only a new perception but also helps this kind of transformation take place within the place and the community.

We imagine "two different ways of seeing the problem as a new integrated image" (Schön, 2002, pp. 155-6). Generative metaphor can make us look at situation A as B. It is like the famous Rubin's Vase (1915) that consists of two images at once. One is a vase as foreground and the other is two profiles as background. This foreground-background relationship resonates with empathy and how it is related to expression. Stein said, "The countenance itself can step entirely into the background" (Stein, 2002, p.77). I see the other person's sad face but what I am really experiencing is the person's sadness. Generative metaphor has strong symbolic relationships and that helps us to see the world differently.

In chapter three I discuss this generative metaphor / creative metaphor in my case studies of both Beuys and the Harrisons. In the next section I introduce Lakoff and Johnson's "empathic projection" that is related to the perception of self that relies on the other.

Metaphor and empathic projection

In my study I have been looking for different ways to understand our relationship with the natural environment. Empathy – body and mind relationship – is also identified in George Lakoff and Mark Johnson's book called *Metaphors We Live By*. It is a metaphorical concept that is experiential and related to physical orientations as the authors exemplify: "up–down", "front–back", "on–off", "deep–shallow", and "central–peripheral" (Lakoff and Johnson, 1980, p.14). Each pair of words is related to human physiology and is clearly not the only possible positioning.

In Lakoff and Johnson's book I find "a mountain is a person" is an important metaphor in relation to the natural environment. Other examples of the mountains being personified are: "foot of the mountain", "shoulder of the mountain", "conquering a mountain", "fighting with a mountain", and "being killed by a mountain" (Lakoff and Johnson, 1980, p.54). At a glance these metaphors sound like personification or anthropomorphising nature but, actually, they originated in the deep relationship between man and natural environment. In Japan Shinto religion has worshipped and preserved some mountains as "Shin-zan" (神山), secret mountains. Mt. Fuji is one of them. It symbolises Japanese nature, culture and spirituality.

> The environment is not an "other" to us. It is not a collection of things that we encounter. Rather, it is part of our being. It is the locus of our existence and identity. We cannot and do not exist apart from it. It is through empathic projection that we come to know our environment, understand how we are part of it and how it is part of us.
>
> Lakoff and Johnson, 1999, p.566.

Lakoff and Johnson's quote describes a spiritual aspect of body and mind relationship. This harmonised relationship can be the fundamental sustainability in both western and eastern worlds. The authors define the term "empathic projection" as conceptually projecting yourself onto someone else, as a child imitates a parent (Lakoff and Johnson, 1999, p.269). Empathic projection can be found in metaphors that introduce a hypothetical situation. For example, "if I were you, I'd hate me"(Lakoff and Johnson, 1999, p.284). This metaphor gives a mental space to image ourselves as another person. Another example: "He rarely shows his real self" (Lakoff and Johnson, 1999, p.286). I assume this metaphorical phrase is made by a family member, close friend or colleague who knows the person well. A person becomes a mirror to reflect upon "his real self". I recognised empathic projection in

the Harrisons' way of relying on dialogue (see the Serpentine Lattice by the Harrisons in the chapter 3).

Edith Stein also describes empathic projection as "The relationship between what is perceived and what is presented as empty proves to be an experienceable, intelligible one" (Stein, 2002, p.77). Empathic projection is a type of empathic exchange between people. In some cases we experience this between people and intelligent animals.

Another way to look at this is through the work of Lafcadio Hearn (1850-1904), a Greek Irish writer who was born in Dublin, lived in New Orleans, and became a permanent resident in Japan. I assume at the time things in Japan were very foreign to him. Hearn gathered Japanese folklore particularly ghost stories and wrote about them as literature. Hearn provides an example of empathic projection that is characterised by a harmonious free play of imagination that provides new insight and understanding. Hearn's approach is related to my work and I analyse the quality in my own practice in chapter four.

Hearn talked about superstition in his essay *Japanese Garden*[13]. It was commonly believed *yanagi*, drooping willow, had the power of haunting. Hearn said, " (for this reason) drooping willows are rarely now to be found in old Japanese gardens". Hearn's story was about this drooping willow in the garden of a samurai of Kyoto. The tenant, the owner of the willow tree, worried about its weird reputation. He decided to cut the tree. Another samurai felt sorry for the tree and asked to purchase the tree. He planted the tree in his garden. Later on he got married to a beautiful lady and they had a child. A few years later the tree was requested for the renovation of a temple. The samurai could not refuse. His wife confessed to him that she was the spirit of the willow tree. She vanished into the tree. The tree was cut down and removed.

I am fascinated by Hearn's story because it seems to describe an empathic relationship between human and tree through metaphor, particularly an empathic projection that shows us a perception of the other: from the samurai to the tree, from the tree to samurai, and the child to the tree. The spell of Hearn's literature makes us imagine the empathic relationship with natural environment.

The original owner of the willow tree is superstitious. I assume some superstitions can be related to ancient logics such as Feng Shui, a Chinese aesthetic and wisdom for designing layouts in buildings and gardens. A logical person follows natural laws using this kind of knowledge.

[13] Hearn, L. (1892) *In a Japanese Garden* [online]. In the Atlantic Monthly, July Volume 70, Issue 417, New York: Cornell University's Making of American website. <http://www.trussel.com/hearn/jgarden.htm

> Another samurai dissuaded him, saying: "Rather sell it to me, that I may plant it in my garden. The tree has a soul; it is cruel to destroy its life."
>
> Hearn, 1982.

This samurai seems to have a different perception of the tree. If this samurai lived in a contemporary era, he would be considered an ecologist. He might be concerned that cutting down the tree is cutting an ecological link between tree, wildlife, humans and its environment. Hearn describes the tree after it was transplanted in the new place.

> The *yanagi* (the willow tree) flourished well in the new home, and its spirit, out of gratitude, took the form of a beautiful woman, and became the wife of the samurai who had befriended it. A charming boy was the result of this union.
>
> Hearn, 1982.

The samurai perceives positive energy from the tree empathically. Hearn describes this projection as the tree's gratitude to the samurai who has saved the tree. I also imagine the child playing happily under the willow tree. The willow must be significantly large and beautiful in order to be chosen to repair the temple. The samurai cannot resist this legitimate request.

> Needless to say the samurai did everything in his power to persuade the daimyo to forego his purpose. The prince wanted the tree for the reparation of a great Buddhist temple, the San-jyu-san-gen-do[14] (三十三間堂). The tree was felled but it immediately became so heavy that three hundred men could not move it. Then the child, taking a branch in his little hand, said, "Come," and the tree followed him, gliding along the ground to the court of the temple.
>
> Hearn, 1982.

The three hundred workers are filled with mystery when the child touches the tree and all of a sudden the tree is released from that spot. There is no particular evil character in the entire story, and this might be the background of this tragic figure. Hearn's ghost seems to have no grudge or rage but seeks empathy. The child sees the tree lying on the ground as separation, and empathically responds to the tree by holding the branch. The tree follows the child to the temple. This suggests we look for the compassion of Buddha.

This story of the willow is similar to other folk stories such as Yuzuru (The Twilight Heron) and Yuki-Onna (the Snow Woman). The Willow story is a tale of a marriage between a human being and a non-human being; it unfolds in a series of steps: 1) A person helps the tree, 2) the incarnation of the tree visits the person, 3) marriage and child, 4) happiness, 5) revelation of the incarnation, and 6) separation. I wonder why the ancient people of my country chose to anthropomorphise nature in this way. If this is a type of metaphor or moral precept, what is the equivalent meaning? Women represent the spirits of trees? In Japanese genesis *Kojiki*[15] (古事記), there is a story called *Umisachihiko and*

[14] A Buddhist temple in Higashiyama District of Kyoto, Japan.
[15] *Kojiki* (712), Oral folklore by Hieda no Are and written by Ōno Yasumaro.

Yamasachihiko 海幸彦-山幸彦 that also unfolds the same scheme. A man marrying a deity is a part of the Japanese animistic origination narrative.

Lakoff and Johnson said empathic projection is an "…imaginative experience of the other" (Lakoff and Johnson, 1999, p.566). A story like Hearn's 'Spirit of Willow' is driven by a metaphorical imagination that gives nature (the willow) another human body to reveal and help us to understand a more complex non-human condition.

Imagination through metaphor enables an understanding of nature as a system that is often invisible to our eyes. However metaphor that involves animals and plants can be misinterpreted as romanticised stories or anthropomorphised phrases. It requires great attention to avoid this kind of misrepresentation. Hearn preserved numerous folklores – not only about Japanese sensitivities towards the other, but also about the integrity of Japanese culture, spirituality and mythology.

I have recognised two kinds of stories that express empathic moments between human and non-human. One is a truth-based story and the other one is a culturally informed metaphor (Chapter 2, p.18). I also explored this approach in Emily Brady's aesthetic of natural environment. Her focus is aesthetic theories that take an important role in our relationship with the natural environment. Brady takes an integrated approach (accepting perception-based experiences, feelings and scientific knowledge) in an aesthetic process of appreciation that involves imagination.

2.3. Emily Brady: Aesthetics of the Natural Environment

> Metaphorical descriptions are used readily in our aesthetic responses; they help us to make sense of what we see.
>
> Brady, 2003, p.153.

In the last two sections I have focused upon empathy as an idea and a practice that helps me to understand the other. I have learned that differentiating sympathy and empathy is important to understand the other. Metaphor also helps me to express empathic experience. Metaphor and imagination are related. In this section I explore how imagination takes an important role in environmental aesthetic theories. I examine Emily Brady's *Aesthetics of the Natural Environment.* Brady focuses on how aesthetics informs our understanding of the natural environment. I am interested in how contemporary aesthetic theories deal with nature that has its own intrinsic values. If science is not the only way to value another life form, what else will take us to an aesthetic truth without falling into a deception?

Traditional aesthetic approach

The word aesthetic comes from Greek *aisthētikos* that means sense and *aisthanesthai* that means to perceive. Aristotle defined the aesthetic as an idea associating our response to beauty with contemplation and perception of formal qualities such as harmony. The aesthetic was understood in representational art. The idea of beauty is considered by Plato and Thomas Aquinas. Alexander Baumgarten (1735) defines aesthetic as "the science of perception" or "science of sensitive knowing."

According to Brady the traditional view of aesthetic experience was formulated by European philosophers: Immanuel Kant, David Hume, Francis Hutcheson, Lord Shaftesbury and Edmund Burke in the 18th century (Brady 2003, p.8). "All experience of the world begins in perception, but perception lies at the centre of the aesthetic response" (Brady 2003, p.9). Kant's aesthetic response is deeply related to a person's mental and physical conditions. Brady said, "[This] response is characterised by the harmonious free play of imagination and understanding" (Brady 2003, p.133). Kant's aesthetic theory looks at nature rather than art and its disinterestedness supports a less human-centred approach to aesthetic appreciation of the natural environment.

Aesthetic experience is perceived as aesthetic quality. Brady says that aesthetic experience begins with one's sense of sight, hearing, smell, taste and touch. Brady said, "[The jasmine] is called beautiful because it evokes an immediate feeling of pleasure, which is a response unmediated by the concept of what jasmine is" (Brady, 2003 p.33). Following this she explores different types of aesthetic qualities: sensory qualities, affective qualities, imaginative qualities, behavioural qualities, gestalt qualities, reaction qualities, character qualities, symbolic qualities and historically-related qualities (Brady, 2003, pp.16-7). I understand aesthetic qualities that are also related to aesthetic value. Brady said that aesthetic value in the environmental context is a non-instrumental value (Brady, 2003, p.23). Other environmental values such as: landscape value, ecological value, rarity value, diversity value, cultural value, historical value, sacramental value, economic/resource value and amenity value are to be understood as instrumental values (Brady, 2003, pp.20-1).

The fragrance of jasmine has been used an example to explain Kant's idea about aesthetic experience and its response. It is understood as "a harmonious free play of imagination and understanding" (Brady, 2003, p.133). This response is also judged as "disinterestedness". Another important aesthetic response that also grounds aesthetic judgements is the sublime. Brady says that it is the difficulty in perceiving the formless in nature that evokes a feeling of the sublime (Brady, 2003, p.36). I think of Herman Melville's *Moby-Dick* (1851). The story of the white whale represents not only a ferocious creature, but also the fishermen who challenge the creature's life in the wildness of the ocean environment. The power of imagination draws us out to the world of Melville. The aesthetic qualities of that natural environment are described in the literature and can be recognised in the metaphors. In Melville's case the awe, the fear of nature, is sublime. They arouse feelings, and these are central to the aesthetic response. Brady says that Kant's theory of the sublime can be interpreted as defining a strongly human-centred attitude towards nature because he sometimes writes as if our freedom and capacity for reason gives us 'dominion' over nature (Brady, 2003, p.38). The nature of disinterestedness and sublime are opposite but both aesthetic experiences can challenge our anthropocentric position.

Aesthetic judgement is not constrained by knowledge based mental activities. The fragrance of flowers is often used for this example. Aesthetic judgement is linked with experience. Perhaps I enter a large museum lobby and notice the beautiful smell of a lily. Even though I cannot see the flower I feel the presence of the flower. The fragrance of lily is judged as beautiful. This is an aesthetic response. I can communicate this with other people who are in the museum lobby. I ask someone in the museum, "Isn't it a beautiful smell?" The person may answer me, "Yes, I have noticed. Isn't it amazing?" Aesthetic communicability is recognised at this moment. Aesthetic judgement is subjective (Brady, 2003, p.33). I think it is also conditional. If I remove the context, my judgement becomes a general statement. The fragrance of lily can be too sweet or too powerful for some people. Other

people may prefer different kinds of flower smells. It becomes taste that reflects on individual values. If we only rely on subjectivity we may miss important opportunities that are invisible to our eyes. I understand aesthetic value in the natural environment is non-instrumental, but it is also related to other living things that have value unto themselves.

Brady's mediation of Kant takes some helpful directions:

- Kant's view is that we engage emotions in aesthetic experience.
- Aesthetic judgments do not rely on the usefulness of the experienced objects. This is disinterest.
- Brady applies Kant's ideas to the natural environment, and suggests that Kant's idea of the sublime can itself be seen as proprietary.

In the next section I explore a counter position that Brady contrasts to a traditional aesthetic approach. Allen Carlson relies on scientific knowledge to inform aesthetic appreciation of the natural environment. To differentiate the former aesthetic approach from what is commonly described as Carson's 'cognitive approach', I will use the terms 'perceptual quality' to define the previously discussed traditional aesthetic approach.

Natural Science Model

Allen Carlson, a philosopher, argues that the aesthetic appreciation of a natural environment should be based on natural scientific knowledge. He claims appropriate knowledge provides an essential basis for truth in aesthetic judgement. He goes so far as to claim we can be held liable if we are mistaken in our aesthetic judgement. This methodology asserts claims to arrive at 'truth' (epistemological and ontological). This kind of aesthetic/philosophical standard can be effective as an environmental policy. It can support rights for species that do not have their own voice in the public sphere. Carlson's aesthetic approach constrains the harmonious free-flow of imagination and understanding of the natural environment by cognitive mental activities. It is also different from phenomenological engagement that is about a relationship between body, mind and the environment, and empathic engagement with nature that is based on non-self interest.

Carlson extends Kendall Walton's "Category of Art" model[16]: into the realm of science to provide the relevant information needed for what he believes to be appropriate and true aesthetic appreciation (Brady 2003, p.89). Knowledge-based understanding can be totally detached from individual experiences that may inform a part of the person. Carlson's idea is prevalent in the philosophical work

[16] Walton claims that there is no correct appreciation with respect to the natural environment. Because the natural environment as aesthetic object is something quite different from art, appreciative categories cannot be determined as a correct categories – for example, we appropriately appreciate Picasso's *Guernica* if we perceive it in the category of cubist rather than impressionist paintings… He concludes that natural aesthetic categories are therefore relative to what we perceive… Carlson objects to this conclusion. Art historical categories are replaced with knowledge of the natural sciences… (Brady, 2003pp.89-91).

of Holmes Rolston III and Marcia Eaton. Brady claims that Eaton's main idea about the aesthetic appreciation of nature is "related to ecological health and sustainability" (Brady on Eaton 2003, p.93). Carlson's aesthetic contribution is objective and scientific in its point of view. Carlson's broad aim is to show that we can make aesthetic judgements about nature that have significant claim to truth. Brady agrees (following Carlson) that if aesthetic value is to play any role in environmental decision-making then it cannot be reduced to the arbitrariness of extreme subjectivity (Brady 2003, p.112). However she also argues that aesthetic truth cannot be constrained to scientific content, which is the basis for her integrative proposal.

In order to understand the importance of Carlson's argument I will leave Brady to reflect on *Revival Field* (1990–1993) by Mel Chin with Dr. Rufus Chaney. They demonstrated an evolution of sculptural aesthetic through its relationship with science. Chin and Chaney used Pig's Eye (*Thlaspi caerulescens*) to bio-remediate the polluted soil in a state Superfund site in Saint Paul, Minnesota. The project was funded by the National Endowment for the Arts (NEA). The chairman claimed it was more of a science project than a work of art. Chin argued the "aesthetic" is revealed in the return of the potential for healthy growth to the revitalized soil, and the "sculptural" accumulation of toxic metals in the plants themselves. Dr. Chaney's interest was the quantitative calculation. Chin made qualitative arguments. Bio-remediation was simply a means of using dynamic natural systems to move heavy metals from the soil into the vegetative body of the remediating plant itself, arguing that this builds upon traditional sculpture methods, creating form from dispersed and unconsolidated matter. He also said, "I felt a responsibility to question the nature of the rejection and to expose the flaws of a system that allows autocratic control over the use of public funds[17]" (Chin in Oakes, 1995, p. 176). The artist's argument was eventually accepted and the grant was restored. Chin defended his work using an "aesthetic of environmental health" as well as an innovative sculptural argument. Which factors would make a bio-remediation project science or art?

Needless to say artists can use scientific methods to make art but the artistic contribution is different from scientific truth. Brady says, "Whether or not one agrees that we put ourselves into an appropriate frame of mind, an aesthetic attitude, what is clear is that we open ourselves up to the object and allow ourselves to be thoroughly engaged by it[18]" (Brady in Carlson and Berleant, 2004, p. 169). The environmental condition of Chin's *Revival Field*, Superfund sites engage our aesthetic sensibility and our sense of responsibilities. The arguments between the NEA and the artist have opened up a new understanding of sculpture and exciting possibilities in public art that provide a new aesthetic and ethical dimension.

---

[17] Chin, M. (1995) Mel Chin. *in* Oakes, B. (eds.) *Sculpting with the Environment*. New York: Van Nostrand Reinhold, pp. 174-77.

[18] Brady, E. (2004) Imagination and the Aesthetic Appreciation of Nature. *in* Carlson, A. and Berleant, A. (eds.) *The aesthetics of Natural Environments*. Canada: Broadview Press, pp. 156-69.

Revival Field also reminds me of William Jordan's ideas about environmental ethics and shame[19], Aldo Leopold's[20] thoughts on empathic projection[21] and Carlson's sympathy-driven scientific knowledge-based approach to environmental aesthetics – reading that I did to inform work on two previous projects, *Nine Mile Run* and *3 Rivers 2nd Nature*. Both projects were seeking strategic knowledge to help the public make their own decisions about the environment. Intrinsic identity and the value of the place were deeply connected to the rivers, the watersheds and vegetation. Experience-based presentation of scientific knowledge and shared experience through dialogue not only helped the communities to understand the environmental issues but also added value that is based on new moral and ethical judgements through awareness of living beings.

Brady said, "One motive for fixing the appreciative context of aesthetic judgements with scientific categories is to achieve objectivity, so that conservationists and other environmental decision-makers might more easily use it to determine the aesthetic value of some part of the natural environment" (Brady, 2003, p.99). Carlson's approach also opens up a set of questions about which knowledge, how much knowledge, and whose knowledge is important for appreciation of the natural environment.

When I look back at my previous projects, I remember there was some important new knowledge about watershed boundaries or the natural form of streams. It can be understood as hydrology or geomorphology. This is knowledge, but it can also be understood as metaphor that resets or reorients our position to nature's way. Individual memories, daily observation, language to interpret the experience and to understand the historic context of the experience are all important; these separate bits weave together into a whole, a new ecological understanding about our relationship to nature.

In the next section I focus on Brady's integrated approach that addresses the role of imaginations.

---

[19] William Jordan, in his book *The Sunflower Forest*, quotes from Sartre to understand sympathetic feelings in the face of environmental destruction that involves a tremendous amount of violence to all living beings. He said, "Sartre argues, "shame…is shame of self; it is the recognition of the fact that I am indeed that object which the other is looking at and judging and then asks, "What sort of relations can I enter into with this being which I am and which shame reveals to me?" Shame, is inseparable from the performative interaction that is the basis for the relationship between self and other" (Jordan 2003, p.48). Who is the other? Is the "other" among us, or is it them? Why can't we hear their voices? Who is responsible for the commonly held resources of air, water and soil? Have we lost our land ethic? Is there no shame? Jordan's environmental ethics can be instrumental for influencing our behaviour and decision-making process. It fits with Carlson's natural science model that is knowledge-based understanding. It appeals to our sympathy but the focus is on problem-solving – arguing for the validity of aesthetics for planning, policy, decision-making and environmental management.

[20] Leopold, A. (1949) *A Sand County Almanac and Sketches Here and There*. London, Oxford, NewYork: Oxford University Press.

[21] I also think about *A Sand County Almanac* by Aldo Leopold who talks about the relationship between humans and the passenger pigeons, an extinct species in North America. Leopold states, "We, who have lost our pigeons, mourn the loss. Had the funeral been ours, the pigeons would hardly have mourned us" (Leopold, 1968, p.110). This is an empathic projection. We recognise our humanity by projecting our feelings on the passenger pigeon. In this case we first experience our feelings of sorrow and then rational thought follows. Leopold's environmental ethics are built on solid ecological understanding and humanity. By means of integration between empathic projection and sympathetic understanding we see ourselves as the third person and the other, through cognitive mental activities, seem to draw our attention strongly towards humility.

Integrated approach

In the previous sections I have talked about two different kinds of aesthetic approaches to the natural environment. The Kantian perception-oriented approach appeals to feelings and senses while Carlson's natural-science model appeals to cognitive mental activity. Both approaches can be key elements for making a decision and taking action in a socially engaged environmental practice. Brady's integrated approach is essential for expanding our understanding of natural environment and supports diverse ideas through the imagination. Perceptual quality and the natural science model remain discrete in the integrated approach. Brady talks about five kinds of imaginations: metaphorical imagination, exploratory imagination, projective imagination, ampliative imagination and revelatory imagination.

Brady said, "The metaphorical imagining underlying metaphors involves bringing together two different things in novel ways – an aesthetic object or aspect of it is fused with some image that is not an image of that object nor an image of another instance of that object" (Brady, p. 153). In response to this I choose Henry David Thoreau who writes about the flight of a Merlin by describing different characteristics.

> I observed a very slight and graceful hawk, like a night-hawk, alternately soaring like a ripple and tumbling a rod or two over and over, showing the underside of its wings, which gleamed like a satin ribbon in the sun, or like the pearly inside of a shell. This sight reminded me of falconry and what nobleness and poetry are associated with that sport. The Merlin it seemed to me it might be called: but I care not for its name. It was the most ethereal flight I had ever witnessed.
>
> Henry J. Thoreau, 1960, pp.215-6.

The aesthetic quality of the Merlin's flight is described in metaphors that consist of non-bird elements such as 'like a ripple of water', 'like a satin ribbon' and 'the pearly inside of a shell'. These metaphorical phrases help us to understand and re-consider the extraordinary flight patterns of that bird. Brady refers to Frank Sibley's concept "the dependency between aesthetic and non-aesthetic qualities" (Brady 2003, p.18). In Thoreau's case the flight of the bird can be imagined without seeing and knowing the actual bird. Metaphorical imagination may not extend the personal knowledge, but it can enhance the person's appreciation of the bird.

Exploratory imagination is a visual capacity in our mind. It is intrigued by a form and texture of the object. For an example ancient people discovered the figures of Greek mythological characters by looking at stars and their spatial relationships. For another example Leonardo da Vinci's artwork began with contemplating a wall to find familiar images in patterns of the stain.

Imagination also draws on projective power. For an example the word chrysalis comes from the Greek word *Chrysos* that means gold. It is a metaphor of a life form that was once believed to

evolve from gold, but has its own unique and different kind of value and beauty. It makes me wonder how ancient people interpreted this process while watching the transformation of the butterfly from a chrysalis[22] to the adult form. Brady talks about the difference between projective imagination and pure knowledge-based aesthetic appreciation by using a soaring butterfly.

> When appreciating a butterfly…my response, is still disinterested because although my own associations shape my response I am not preoccupied by them; I value the butterfly for its grace and beauty rather than for any end it might serve…
>
> Brady, 2003, p.135.

This is the traditional aesthetic appreciation that takes into account the perceptual qualities and feelings involved. Brady integrates this kind of aesthetic with knowledge that requires cognitive mental activities.

> Knowing that a butterfly emerged from a caterpillar in a cocoon may increase my appreciation of the vibrant colours if it enables me to recognize the contrast of colours before and after the metamorphosis. This knowledge is part of the story of the butterfly, yet it becomes a legitimate part of aesthetic appreciation because it adds meaning to the perceptual qualities I enjoy.
>
> Brady, 2003, p. 138.

In this writing I recognise two very different mental activities simultaneously. One has a perceptual quality and the other has a more analytical quality. However her description of "the vibrant colours" almost functions the same as the other aesthetic response "grace and beauty". This is not a fusion because once I can clearly recognise the two different qualities.

I would like to put myself in Brady's shoes. Is it possible to differentiate between the different mental activities in my own experience? I have some experience of rearing caterpillars of the Monarch butterfly. They are a common butterfly found all over North America. The species sustained themselves even when their native host plant has been lost. The Monarch is well known for its beauty and the fact that millions of the butterflies congregate at their overwintering sites in the mountains of Mexico. I often find a single caterpillar on the underside of a milkweed leaf[23]. This larval plant can be found ubiquitously wherever the adult Monarch is seen. Milkweed grows in parks, highway roadsides, railroad banks and on abandoned lots even in a large city like New York. Although I have never seen clouds of butterflies I can imagine the sporadic flight path as thousands

---

[22] Some butterflies such as Monarch butterfly (*Danaus plexippus*) and Painted Lady (*Vanessa cardui*) have golden spots on the surface of their chrysalides. Just before an adult butterfly emerges from the chrysalis the colour of the gold disappears and the whole surface of the pupa becomes transparent.

[23] Milkweed (*Asclepias*) is the larval plant for Monarch butterflies. Common milkweed (*Asclepias syriaca*) and butterfly weed (*Asclepias tuberose*) are found commonly in North America. Milkweed is named for its milky sap. *Asclepias*, the Latin name is a name of a god of medicine and healing in ancient Greek. Some milkweed species are toxic but have been used for folk medicine through pharmaceutical processes. Milkweed is toxic to birds and other insects except Monarch butterfly caterpillars. The leaves are emerald green with a thick, juicy, round-leafed tip; the flower blossoms that consist of many clusters of small flowers are easily recognised from a far distance. Milkweed is difficult to keep alive once it is detached from the soil and its roots. It wilts quickly in the vase. The plant is annual. It produces seedpods that hold hundreds of seeds. Each seed is attached with a silky parachute-like seed head to fly with the wind.

of Monarch butterflies leave a city, a wilderness or some of them from the hands of a child who may have read about the butterflies and learned to care for the them. I can also envisage an emerald belt of milkweed plants stretching from Canada across the United States and into Mexico that supports the journey of 100 million Monarch butterflies. I understand that the butterfly that flies south is replaced by one or sometimes two generations before the migration back north in complete. This is an amazing resilient creature despite its fragile form.

My aesthetic response to this living thing is expressed metaphorically. It consists of three kinds of mental qualities: empathised experience, pre-stored information and imagination. Two kinds of imagination are recognised: one is ampliative imagination and the other is revelatory imagination. Brady describes ampliative imagination as "visualization and a leap of imagination that enables us to approach natural objects from entirely new standpoints" (Brady in Carlson and Berleant, 2004, p.163). In my case this ampliative imagination is recognised in "the sporadic flight of each Monarch butterfly…" and "I also envisage an emerald belt stretching from..." Finally my revelatory imagination draws me to ultimate understanding of the butterfly. This kind of understanding is called aesthetic truth. It is different from a non-aesthetic truth. We do not seek out aesthetic truth in the way we seek the answers to philosophical or scientific problems. Brady said, "Rather, aesthetic truths are revealed through a heightened aesthetic experience, where perceptual and imaginative engagement with nature facilitates the kind of close attention that leads to revelation" (Brady in Carlson and Berleant, 2004, p.163).

Brady's integrated approach provides me with a new perspective on environmental artwork that relies on scientific methods. I wanted to test how I recognise an integrated approach in a public artwork called *Time Landscape* by Alan Sonfist. *Time Landscape* is intended to create a sense of place or a sense of nature in the middle of New York City. It seems to correspond to what Brady said, "…there is a connection made between physical characteristics and sense of place, but sense of place involves an individual's (or community's) relationship to a place" (Brady, 2003, p.234). I examined this work using Carlson's natural science model and Brady's integrated approach.

Time Landscape

> The idea of digging up the past to bring it into the present is exactly what my art is about. I see myself as a visual archaeologist.
>
> (Sonfist, 2004, p.9)

Time Landscape (1978) is a permanent public artwork consisting of trees, shrubs and grasses, at the corner of La Guardia Place and Houston Street bordering Soho, the historic arts district in Manhattan. The project site is 25 feet by 90 feet (a former empty lot) which is separated from the street by an iron fence with no public access. In simplest terms, this is a sculptural idea (a forest) that has literally been planted and framed.

Sonfist's original proposal in 1965 included plans for over fifty forest projects in the region. After thirteen years in development, Sonfist began working onsite in 1978. He researched local plants, geology, land formation and soil quality. In his research instead of paying attention to historical or cultural incidents, the artist developed a plant scheme that would be common to Manhattan Island before European settlers arrived in the 17th century. He planted beech trees that were grown from saplings transplanted from his favourite childhood park in the Bronx and a mixed hemlock and riparian hardwood forest that he talks about as a site of personal development and refuge. *Time Landscape* was a unique and visionary idea for its time, developed in the heyday of earth art and conceptual art.

Alan Sonfist challenges the boundary of public art to recreate sense of place with trees and shrubs that used to inform the landscape in New York City. He embraces appropriate scientific knowledge and a cognitive/aesthetic truth that uses appropriate science and living reference ecologies to establish the forest. Sonfist's scientific knowledge extends and adds depth to his childhood experience and memories. It reinforces his feelings as he makes art that both refers to those memorable experiences and replicates ecological aspects of that place. The imagination that informs the work is nested in childhood experience and the embodiment of scientific knowledge over time. The reception of this artwork is more of a challenge as it is a complex piece that works on three levels. First, it is a sculptural idea that is also an evolving forest. Second, it challenges traditional ideas about aesthetic objects, yet it retains and enforces a purely visual relationship: the iron fence provides both frame and boundary. Finally, the artwork encourages popular interest in the preservation of the historic fabric of Manhattan's buildings to support the value and validity of preserving a historic forest in the city. In *Ecovention*[24] Eleanor Heartney (art critic) said, "Sonfist's success in persuading city planners and bureaucrats to approve the construction of *Time Landscape* is based on arguments that derive, not from conventional justification for public art, but from the discussion that surrounds issues of architectural preservation. Sonfist's stance has been that it is as important to preserve historical landscapes as to preserve buildings" (Spaid and Lipton, 2002, p.7)

[24] Spaid, S. and Lipton, A. (2002) *Ecovention: Current Art to Transform Ecologies*. The Cincinnati Art Center, Ecoartspace and the Greenmuseum.

Time Landscape is a forest that benefits from the non-instrumental values it carries as a public artwork. Sonfist claimed derelict land that is then restored as forest and designated as a living object with intrinsic art/aesthetic value. Since it is not a public park, it is not subject to the instrumental values of parks and open space, and is therefore able to provide a unique and dedicated urban 'forest space'. This can only be achieved given the fact that it is indeed an artwork, not a park. Sonfist is quite eloquent on this point.

> Now, as we perceive our dependence on nature, the concept of community expands to include non-human elements; and civic monuments should honour and celebrate the life and acts of another part of the community: natural phenomena.
>
> Sonfist, 2007, p.9.

Time Landscape is a symbol of forest and woodland that reminds us of the remnant conditions of nature in New York. It suggests an alternate aesthetic integrity. As a work unto itself, it has a core truth, an experiential truth that is confined to the realm of trees. A truth which gains focus by its location, embedded at the heart of the city. At the same time, there is no indication that the work was intended as habitat creation, although the planting of diverse native plant communities that have then been protected from human disturbance attracts and enhances urban wildlife such as insects, birds and small mammals.

What would provide the imaginative authority to drive the development of such an artwork over an extended period of thirteen years? An analysis of empathic inter-relationship and value exchange may provide some answers. However, in order to understand these aspects of the work, I have to activate my own imaginations. It is clear that childhood experience with trees in a remnant landscape patch in the Bronx provided core experience for the adult artist. I think it is fair to claim there was value exchange in that childhood relationship to trees. The childhood experiences seem to have provided the creative authority and temerity to realise this work, just as they also underpin the imaginative act decades later. I argue that the 'aesthetic integrity' embodied in the work indicates a clear empathic relationship between the original Brooklyn site, as well as with the penultimate Manhattan site. In this latter case, I perceive an empathic relationship to a remnant ecosystem. I believe that the artist's world image has been extended by his original experience, then confirmed and clarified in the development of the work in Manhattan.

Sonfist's empathic relationship to nature is most obvious in the literature that attends his larger body of work. The source of that empathy is often discussed and developed through reference to childhood memories and the import of natural events within an urban setting (see Sonfist in Oakes, 1995: 158-

159[25]) while in a monograph on his own work Sonfist makes explicit that his work is orientated by his personal history and his empathic/imaginative relationship to nature and its material (Sonfist, 2004). *Time Landscape* appeals to people who care about a niche for living things. At the same time, its presence provides an ethical, aesthetic counterpoint to normative urban speculation and development. It is a living forest sculpture that celebrates the uniqueness of an ecosystem. I understand how aesthetics play an important role in the relationship between people and the natural environment. Imagination allows us to stitch different mental activities together in aesthetic experience. In the next section I talk about Grant Kester's dialogical aesthetics that involves communication and exchange as the core of his aesthetic theory. He focuses on artists who take an ethical stance in socially engaged art practice. The artists deal with political, economical and environmental complexity.

(Figure 1): Time Landscape, the image was taken in 1993

[25] Sonfist, A. (1995) Alan Sonfist. *in* Oakes, B. (eds.) *Sculpting with the Environment*. New York: Van Nostrand Reinhold, pp.158-165.

Chapter 2.4. Grant Kester: Dialogical Aesthetics

In this section I focus on dialogical aesthetics by Grant Kester who is an art historian and critique. In his theory "dialogue" is both the key word and the focal point of his aesthetic attention. In Kester's theory dialogue is recognised as a means to communicate and understand the other and his/her environment. It evolves through both intellectual and emotional activities. It also has an ethical dimension that can drive an artists' praxis. Through dialogic enquiry the artist gathers, selects and synthesises information. We experience the other's situations through dialogue and the process of inter-subjective exchange. Empathy, metaphor and imagination support the process of understanding the other; and their relationships within complex social and environmental structures. This process can catalyse imagination; and in turn the creative/artistic exchange of aesthetic perception and understanding.

Kester provides a significant historic context going to the roots of the avant-garde art in modern art history. He questions the relationship and the exchange between an artwork and the viewer in contemporary art. I use Suzanne Lacy's *Oakland Projects* (1990–2000) as the first case study. Although it is not focused on ecology, it presents a particularly clear example of Kester's construct of dialogical aesthetics that occurs outside the gallery setting. I will then return to a focus on how a dialogical approach is recognised in environmental art by discussing the *Groundworks* exhibition that was curated by Kester in 2005 and initiated by myself and Tim Collins.

Distance between the artwork and the spectator

Social and environmental situations consist of layers of issues and exchange amongst diverse personas. I think if art is a different way of perceiving the world, it will have to go beyond the individual artist's viewpoint. Kester defines what kind of art and artists he focuses on for the reader. He said, "The artists I discuss in this book ask if it is possible to reclaim a less violent and more convivial relationship with the viewer while preserving the critical insights that aesthetic experience can offer to objectifying forms of knowledge" (Kester, 2004, p.27).

Kester's dialogical artist's work is different from art that "…refuse to communicate with the viewer" (Kester, 2004, p.38). I imagine abstract paintings by Barnett Newman, Robert Motherwell and Mark Rothko: standing in front of an enormous flat canvas, it can evoke physical feelings but does not express a particular meaning. This kind of relationship between artwork and the viewer was a new form in non-representational art. This also makes me think about Robert Ryman, an American minimal artist, who painted a series of white paintings in the 60s. This kind of art relies on our outer

perceptions particularly the visual. It takes some practice to set a certain meditative position to notice and appreciate the subtle differences of the whiteness. Non-representational art emphasises bodily-involved understanding rather intellectual understanding. This kind of meditative practice, surrounded by white walls and a certain quality of light and tranquillity, continued in galleries and museums in the 70s. This laboratory-like environment in the galleries and museums literally frames the artwork and sets the viewer's position in relationship to the artwork and the art world. Kester referenced Michael Fried, American art critic and art historian who calls for "instantaneous experience" in minimal art that "anticipates" and plays off the viewer's physical and cognitive responses through the manipulation of size, shape, colour and surface appearance (Kester, 2004, p.47).

From 1970's to 1990's, many exciting artworks were created outside of artists' studios and presented outside galleries and museums such as Bonnie Sherk's *The Farm* in San Francisco (1974-1991), Agnes Denes' *Wheatfield* in New York (1982) and David Ireland's renovation of the Marin Headlands Art Centre (1986) in the Golden Gate National Recreation Area in California. The word "art-space" was slowly being replaced with ideas about "art as place".

I think every artist has his/her own intention how to invite the audience to the artwork and its environment. Alan Sonfist says he likes to show work in museums because people go to them with a special willingness to observe and study[26] (Sonfist, 1978). Art space is understood as a place of unique experience; it can also be considered as a different kind of learning space. In the case of the Harrisons galleries and museums are meeting places[27]. They provide not only space to work and show their final product but also become political spaces that support the artists' research – artwork that relies on dialogic exchange with many different people, experts and organisations. These artists use art space to engage the world, or abandon that space altogether to explore the eco/social/political realm through practice. Their discourse is informed by people's conversations. Communicability becomes a focal point of attention in dialogical aesthetics.

---

[26] "As I see museums at this moment in our history, they are very special places where people can become aesthetically aware of the objects in their surroundings by going to see them in a different setting. That is why I am especially interested in showing my work in museums, because people go to them with a special willingness to observe and study" (Sonfist, 1978).

[27] "The gallery is a meeting place. I think this is very important. It is a place where people come in and because it is a gallery, and it is an art gallery, the political aspects of things disappear and people look at them differently. It is very useful to do that. We have also exhibited in libraries, city halls …" Helen Mayer Harrison, 2008, Appendix A4, p150.

Dialogical art is recognised in Suzanne Lacy's *Oakland Project*[28]. It exemplifies how the artist relies on dialogue, inter-subject exchange and empathic relationship. In the earlier stage of the project Lacy recognised the misrepresentation of youth in the media in Oakland. Media literacy became one of Lacy's primary artistic goals. She intended to create media headlines that would overthrow the negative perception of young people. Secondly, she created a series of events that enabled encounters with young people and the authorities and provided access to their dialogue. Lacy choreographed a performance that created a shared experience. It became an opportunity to listen to others who usually did not have a voice. The large scale amplified the experience and validated it for media representation. Thirdly, Lacy took the role of creative artist managing the production and enabling the performers. She prepared by arranging meetings and planning classroom activities and rehearsals. Finally, Lacy relied on her own artistic-political power to help the young people to use the media. Lacy framed the project by creating a potential for a constituency of participants – a platform for dialogue and the political potential for their individual and collective voices to be heard.

The idea of Kester's dialogical approach is to create an opportunity to listen to others through creative acts. We understand what one has to say through conversation that consists of words. Our imaginations also help with comprehension. Empathy also takes an important role to perceive the other's tone of voice, eye contact and body gesture. This kind of exchange can be artistic and creative opportunities. The artist has the skill and training to realise that potential if that realisation is of common interest to both parties.

In summary, three main points have recognised in dialogical aesthetics:

- The quality of the speech, acts, and process of dialogue;
- The quality of the inter-subjective exchange;
- Indication of empathic relationship.

[28] Roof is on Fire: Suzanne Lacy worked with ordinary young people in Oakland California between 1990 and 2000. We looked at the video documentary "Roof is on Fire", one of Suzanne's "Oakland projects". In the 90s there was a significant world-wide rise in youth culture, predominantly influenced by African American youth. This came with a mythology of fear, a perception of crime associated with youth culture and activist adults. In the public schools, 95 per cent of the population were black. The young people Suzanne worked with during the project were ordinary young people, but at the same time they were different. In this case the word "different" does not mean special or unique, simply that they were not treated or accepted equally as others. The project "Roof is on Fire" was sponsored by California College of Arts and Crafts, Oakland Unified School District, Kron TV "Kids First" and other sources of donations. Suzanne was the Dean of the College at the time and collaborated with her colleague Chris Johnson. They developed a series of workshops on media literacy that would enable the young people to deconstruct the way in which their image was being manipulated. The project consisted of meetings, classroom activities, a large scale performance, and documentation. Two hundred high school students, teachers and professionals were involved in the project. Suzanne and Chris took the role of creative artists during the production. The performance site was a parking lot eight floors up with a view over downtown Oakland. The show started the moment the lift rose from the tough streets of Oakland and arrived at the roof top. There the audience saw many cars randomly placed. Each car was prepared for a group discussion on topics of sex, violence, and the future. Pam Moore, a CBS narrator, explained during the video, "You have seen these teenagers many times on TV, but rarely heard them speak. Tonight they have something to say. Tonight it's your turn to shut up and just listen." On the video, Leuckessia Spencer, one of the senior high school students who worked on the project for six months, said, "Teenagers don't have a voice in this society. When they have a voice, it's dictated by someone else, but it's not the teenager's." Almost half of the video consisted of the voices of teenagers. Leuckessia was concerned after the performance that the audience might be bewildered. She said, "Your reality is like a blanket that keeps you warm, or keeps your mind in a certain set. Once you take the blanket off, the cold air will hurt you. If you don't remove the blanket, you will remain in your reality, which is not a real reality. You live in a fantasy life." Leuckessia's quote is similar to the way Suzanne described the performance: "After people experience "Roof is on Fire", they no longer look at young people the same way as they looked at them before."

Dialogical aesthetics in natural environment

> He speaks. The lake in front becomes a lawn.
> Woods vanish, hills subside, and valleys rise…
>
> William Cowper, The Garden (1785), in Kester, 2005, p.19.

Kester's interest in nature is related to public places, and his view of nature is not spiritual or ecological but dialogical. It is grounded to the culture, history, political power and struggle of people who have a strong dependency with the natural environment as resource.

In the introduction to the *Groundworks* exhibition catalogue Kester talks about Lancelot Brown (1716 -1783), an English landscape architect, who establishes picturesque gardens all over England. The gardens with mansions and castles are designed for wealthy landowners. Kester provides a detailed overview of the process to create a harmonious landscape. He discusses Brown's project and the necessity of massive earth-moving operations: the planting and transplanting of vast numbers of trees, and the creation of lakes and ponds (Kester 2005, p.19). Kester compares this to contemporary artists such as Michael Heizer who uses dynamite and bulldozers to create earth works. Heizer's artworks such as *Double Negatives* (1969-70) displaced 240,000 tons of earth (Lippard, 1983, p.130). Most of his work is experienced as photographic documentation. Lucy Lippard also describes Heizer's work as "giant earthworks executed by machines in the western desert are seen by some as 'drawings' on and in the earth, and by others as mother-rape" (Lippard, 1983, p.55). Heizer's work evokes a kind of shock to pay attention to the human relationship to the earth. Kester asks, "Can art reveal to us another way to relate to the natural world, not as a resource for self-expression or as malleable clay to be moulded by the artist's vision, but as an interlocutor?" (Kester, 2005, p.21). I begin to look at other environmental art with Kester's question about dialogical approaches. In the next section I examine the *Groundworks* as one example of the dialogical approach to environmental problems in social context.

Groundworks

The *Groundworks* exhibition was initiated by my research group at Carnegie Mellon University. It was curated by Kester with Patrick Deegan and presented by Jenny Strayer, the director of the Miller Gallery in Pittsburgh, Pennsylvania in 2005. The exhibition not only finalised our work on *3 Rivers 2nd Nature* (3R2N) but also provided an historical, theoretical and international overview of practitioners as the context to understand that work.
The exhibition consisted of documentation of international projects[29] and other projects that were the result of work on *the Monongahela Conferences I*[30] (October, 2003) and *II*[31] (June, 2004). The first conference was a three-day seminar on practice and methods to create social change. It included artists, architects, theorists and critics. The second conference built on what we had learned in the first, and was actually a month-long residency programme in the Monongahela River Valley, Pennsylvania.

Fifteen projects were presented in the *Groundworks* exhibition. Eight of them were developed internationally: Kentucky, London, Japan, India, Hamburg, Senegal, Argentina and Austria. Seven projects were developed in the three post-industrial communities along the Monongahela River in the Allegheny County.

Inter-subjective exchange is one of the key approaches in Kester's dialogical art. This exchange between artists, communities and experts, of a dialogical approach is recognised in all the artwork in *Groundworks*. For an example *3 Rivers 2nd Nature* is involved by the Allegheny County Health Department, communities, scientists, historians, landscape architects, Geographic Information System specialists, economists, environmental organisations and college students.

The quality of dialogue was another key element in Kester's theory that was also recognised in all the projects. For example, Jackie Brookner (New York city), Stephanie Flom (Pittsburgh) and Anne Rosenthal (Pittsburgh) decided to work together at McKeesport where the Youghiogheny River joins the Monongahela River. They deliberately chose a process of active listening –an important element of the dialogical approach. The artists spent the majority of their residency time meeting with community members, including the mayor of the town, to understand their desires, future visions and

[29] The international projects were presented by: Suzanne Lacy, Susan Leibovitz Steinman & Yutaka Kobayashi; PLATFORM; Ichi Ikeda; Navjot Altaf; Park Fiction; Les Huit Facettes-Interaction; Ala Plástica and WochenKlausur.

[30] *T*he *Monongahela Conference I* (2003) consisted of presentations, discussion and a site visit. The artists in *Monongahela Conference I*: Jackie Brookner, Angelo Ciotti, Stacy Levy, Helen and Newton Harrison, Mark Dannenhauer, Erica Fielder, Tom and Connie Merriman, Ground Zero Action Network, A. Laurie Palmer, Stephanie Flom, PLATFORM of London, Ann Rosenthal, Temporary Services. Theorists: Suzi Gablik, Nicola Kirkham, Grant Kester, Malcom Miles. <http://moncon.greenmuseum.org>

[31] *The Monongahela Conference II.* The *Monongahela Conference II* was a month long artist in residence program in a post-industrial place. The programme was funded by Warhol Foundation, and organised by 3 Rivers 2nd Nature (3R2N) at the STUDIO for Creative Inquiry, Carnegie Mellon University. Twelve artists worked within three communities in the Monongahela Valley. Seven artists who lived outside Pennsylvania were brought into the region to work alongside five artists living in the greater Pittsburgh region. The artists in Braddock were: Helen Mayer Harrison & Newton Harrison, Walter Hood & Alma Du Solier, Christine Brill & Jonathan Kline. The artists in Homestead were: Constance Merriman & Tom Merriman and A. Laurie Palmer. The artists in McKeesport were: Jackie Brookner, Stephanie Flom and Anne Rosenthal.

constraints. The artists created three artworks. One was a future visitor brochure that showed a plan for a new trail, regional attractions and new eco-industries that sustain the local economy (Kester, 2005, p.161). The McKeesport artists also produced a theatrical play that described the future of the place. At the end of the play the key participants in the community were acknowledged. Their contributions were noted with a special water bottle as an award gift. "Discover McKeesport 2018 – Urban Conservation Excellence Award" was the text on the label. In this case the dialogical process helped the artists to imagine the future place and their artworks empowered the community's imagination about the future of the place. Imagination took an important role. This was also recognised in: A. Laurie Palmer's *Oxygen Bar*[32]*,* setting it as an interactive and relational sculpture in downtown Pittsburgh; and Christine Brill and Jonathan Kline's *Looking for Braddock's Fields*[33]*,* a 3D architectural model that visualised the city plan in relation to a toll road construction.

Process had more emphasis than final product in Kester's dialogical art. The artists relied on making, designing and planning during the dialogical process. Navjot Altaf worked with people in small villages in India. She worked with the communities to re-design and re-create public wells that were used mainly by women and children. This kind of design approach in the communities was recognised in *The Beneath Land and Water: A Project for Elkhorn City*[34] by Lacy, Steinman and Kobayashi, working with post-coal mining communities in Kentucky; and *Park Fiction Institute for Independent Urbanism Travel Kit* by a group of artists, working with communities in Hamburg, Germany.

Another approach was relying on educational processes. This learning process addressed not only how to make things but also being aware of the relationship between the art object and its environment. This approach was recognised in Ichi Ikeda's *Manose-gawa River Art Project* and *Shibakawa Reclamation Art Project*[35] in Japan, Huit Facettes–Interaction's *Glocal Challenge*[36] in

---

[32] A. Laurie Palmer created the *Oxygen Bar,* a small stainless steel box that held plants inside as an interactive sculpture to introduce into Hay's Woods. She took the box to various places in downtown Pittsburgh. The appearance intrigued the passengers' curiosity. She explained the oxygen/carbon dioxide exchange between people and plants as a prelude to the threatened loss of 600 acres in Hay's Woods.

[33] For the Braddock community, Klein and Brill, artists and architects in Pittsburgh, built an architectural model that visualised the dramatic changes of a proposed toll road that would go through the middle of that historic town. Even though the community had been familiar with the development plan for over ten years, to actually see its impact created a sensation and renewed the dialogue about a better way to do things.

[34] Lacy, Steinman and Kobayashi worked with an Appalachian community, a former coal mining community, in Elkhorn City, Kentucky between 1999 - 2005. The city asked the team to help the community to shape a tourist attraction. They worked with the community to design and build a blue line trail that connects the city with the river linking all the nodes of creation such as signage, a butterfly garden, stone benches and a mural.

[35] Ichi Ikeda, a Japanese artist, worked on water as subject of large installations. He developed a series of artworks and activities called *Water's Eye View*, instead of bird's eye view. In the *Groundworks* exhibition he presented Shibakawa, an urban stream, in the former industrial city of Kawaguchi, Japan. Ikeda and a factory owner decided to organise an alternative space art and events with young artists. Ikeda created dialogue while building his installation and preparing for the event. In this process each participant began to understand about the stream and its environmental state through individual experience, art and conversation with Ikeda.

[36] Huit Facettes–Interaction, a group project, organised art workshops in the Senegalese village of Hamdallaye Mbaye Samba (1996 – 2002). Huit Facettes–Interaction presented an installation called *Glocal Challenge* (global vs. local). Kester said, "Instead of depending of the institutional framework of art, their localization interventions debase canonical systems of commodified art production…their work does not simply incorporate the local into the global, but lends new strength to local idioms and exports their knowledge by confronting and profiting from the workings of global modernity" (Kester 2005, p.180).

Senegal, Africa, and Constance Merriman and Tom Merriman's the *Hays Woods Project*[37] in Allegheny County Pennsylvania.

Kester's empathic relationship (also Stein's) was recognised in the work of Walter Hood and Alma Du Solier, landscape architects from California. In their project called *Reiterative line…Braddock's shifting Right of Way*, they created mixed media drawings. Some of them described scenes of a young family and friends walking and talking joyfully in a park that was recognisably as occurring within a Braddock neighbourhood. These figures and gestures appealed to most people as fantasy or an imaginative image. The project underpinned ideas about human gesture and familial interaction in public space that had been missing in the economic unravelling of this former steel town and its related urban fabric and public landscape. In this setting urban art, design and landscape is not only about earth-moving and planting, but also the re-establishing images of human interaction and expression.

In section 2.2: Metaphor and Empathy, I explained about generative/creative metaphor that reveals the problem from a different perspective. Helen Mayer Harrison and Newton Harrison created an exemplary creative metaphor in Braddock. First they looked at the place and community from a distance. They took aerial photographs of the place. Since the industry had gone, the place was slowly getting greener. They saw the evidence of ecological recovery in, and surrounding, the community. Secondly they diagnosed the current issues and conditions metaphorically. The Harrisons consider the population decline in Braddock was not catastrophic but "waiting for it to appreciate in value" (The Harrisons in Kester, 2005, p.121). Based on this radical problem-setting they developed a proposal called *Fecal Matter: A Proposal for Braddock, North Braddock, and the Lands Above*. The proposal was about building a storm-water treatment system in one of the vacant lots. Their proposal suggested using this duration of waiting-time for dealing with the infrastructure of the storm-water problem.

The *3 Rivers 2nd Nature* relied on an empathic relationship with the place. In this exhibition the project *Allegheny County Sand Mandala* (Figure 2) took a symbolic approach. Mandala is a Sanskrit word meaning "cycle." It consists of many symbols and layers of meanings. Mandalas support meditation about the universe, its energy, life and death. In this case it supported the final meditation about the place, history, community, and relationship between nature and culture. The structure of the drawing consisted of the rivers, streams, floodplains, watersheds, and forests along the rivers. Forest-woodland had been evaluated in five ranks. The darkest green was the least fragmented and yellow was significantly fragmented. Each watershed was evaluated in four ranks according to overall

[37] Constance Merriman who is an artist and educator, and Tom Merriman who teaches in the design department in CMU focused on the development of Hays Woods, a privately owned area of 635-acres. It is one of the largest woody areas in Pittsburgh. The land owner decided to strip-mine coal and then build a casino. The Merrimans chose a reciprocal communication method. Their art-making process was to experiment and to understand the issues. They learned from others by listening to citizens and experts and by observing the vegetation and wildlife. In their residency period they made a 3D model that showed the site before and after the development.

ecological health. The calculation was based on work done by our research group and aesthetic/scientific overview including stream biological survey and permeability of the watersheds. Health-wise the greenish grey was the best condition, browns were the middle, and white was the worst. During the construction of the sand mandala people asked questions about the shape and colours. The artist also asked the spectator about the environmental conditions where he/she lived. The sand mandala was dismantled as is traditional and returned to the river during the closing ceremony for the exhibition.

The mandala installation also consisted of a series of Thangka[38] paintings by Noel Hefele, the most dedicated team member in the 3R2N team. Hefele presented three landscape paintings that were delineated by specific trees[39] along each river. This was the result of a five-year botany study by botanists and myself to count riparian woody communities along the rivers for four summers. This study result not only contributed new information and knowledge but also created new images among the communities that helped to redefine post-industrial public places.

Both the image of the Allegheny County and each river with a specific tree species were informed by the scientific analysis. The team members, Collins, Hefele and I experienced the planning of the protocol, fieldwork, analysing the data and publishing the report. We wanted to re-create our experience of the place in the exhibition with truth that we discovered in the process. This integrated approach also informs *Plein Air* that was developed for the practice element of this research. I talk about it in chapter four.

(Figure 2): Allegheny County Sand Mandala, 5 feet x 5 feet, 2005, Pittsburgh, Pennsylvania

[38] Thangka is a Tibetan painting format. It is made of cloth and can be rolled up for pilgrimages.

[39] The dominant species in the Allegheny River was sycamore, on the Monongahela River silver maple and on the Ohio River black willow.

2.5 Summary of chapter two and the conceptual framework

In this chapter I discuss empathy, empathy with metaphor, aesthetics of natural environment and empathy with dialogical aesthetics as a result of reviewing three critical writers and discussing the roles of empathy and metaphor, the phenomenological and the naturalistic, the socially engaged artists' relationship with the natural environment and the way in which this relationship is shaped by relationships with other stakeholders such as Sonfist, Beuys, the Harrisons and my own practice with the trees.

I. Empathy

I-a. Following Stein empathy is an act of perceiving in which we reach out to the other to grasp his/her state or condition. It consists of one's emotional and physical experiences. Empathetic experience is detected towards something foreign rather than something familiar. We comprehend feeling in others by observing the other person's facial expression or bodily gesture because we too express feeling through the body. Expression can take these different forms: facial expression, body language, forms of speech, politics, education and art. These expressions can be called actions. *Action is always the creation of what is not* (Stein, 2002, p.56). Reading the body expressions of feeling in others can be cultivated.

EMPATHY REACHES BEYOND SELF-INTEREST; THIS IS HOW IT DIFFERS FROM SYMPATHY
This definition is the most useful to my study. Empathy is not based on one's self interest. It is a reaching beyond self but without losing or forgetting oneself. We bridge the gap between self and other. We resonate with the feeling of the other and amplify it. Empathy in this sense occurs between subjects. It is inter subjective. In this way empathy helps us to enrich our own world image through different individuals.

I-b. Empathy and sympathy are different.

Sympathy is an act of assuming feeling in another based on what we know. In this sense it is founded in intellectual understanding in which we rationalise a situation and impose a projection. Unlike empathy, sympathy reflects one's own experience and intellectual understanding rather than reaching beyond it. Empathic experience also involves intellectual understanding expressed as a new idea. Sympathy is based in one's self interest in context.

I-c. In empathy symbolic relationships and sign relationships are different.

RECOGNITION OF EMPATHIC SYMBOLS (THIS FEELS) VERSUS SYMPATHETIC SIGNS (THIS MEANS)
In my case studies to follow, this is an important concept. In Stein's empathy a symbolic relationship has precedence when focused on the countenance of the other – such expression is a symbol of body and mind relationship. It is not a sign that indicates specific meaning through intellectual knowledge and reflective understanding.

STEIN'S PHENOMENOLOGICAL CONCEPT "PHENOMENA OF LIFE" IS A SENSE OF LIVED CONNECTEDNESS THAT IS AN AWARENESS OF THE RELATIONSHIP BETWEEN BODY, MIND AND ENVIRONMENT

This concept follows my artwork and practice in chapter four. We not only understand but also feel the other person's health and mental state such as intense, happy or sad. This can be recognised in animals as comfortable and uncomfortable and in plants as vigour and sluggishness.

II. Metaphor

II-a. My conclusion is that ideas of metaphor engage with empathy indirectly. Following Schön, Lakoff and Johnson the body and mind relationship is the implication of empathy. This relationship constructs tension between what is foregrounded and the context or background.

II-b. Generative/creative metaphor

AWARENESS OF METAPHORICAL FOREGROUND/BACKGROUND RELATIONSHIPS
Schön's idea is important (it is both reflected in and extended by the Harrisons' case study – to follow). Generative metaphor/creative metaphor raises awareness of the foreground/background conditions and relationships. It is used to both generate and rationalise a complex reality in new way that in turn shapes how we respond to, or interact with, that setting. It does not directly solve the problem but suggests a new situation. It enables a new perception and supports transformation.

II-c. Empathic projection as metaphor

METAPHORICAL PROJECTION OF AN IMAGE OF OURSELVES AS ANOTHER
Lakoff and Johnson's idea is important to my case studies to follow. Empathic projection is a type of metaphor that helps us to imagine ourselves as if the other is looking and judging our behaviour. This rationalisation comes from the relationship between what is perceived and what is presented.

III. Aesthetics of the natural environment

Following Brady we understand our own cultural values, and the values we deem inherent to our understanding of different life forms through aesthetic experience. I identify three approaches: 1) framing the dynamic environment to set our mental power into harmonious free play – perceptual quality, 2) natural scientific model – knowledge-based approach, 3) the integration of the former approaches that rely on the integrative / transcendent power of imagination.

AESTHETICS THAT EMBRACE AN INTEGRATION OF SOMATIC PERCEPTION AND INTELLECTUAL KNOWLEDGE THROUGH IMAGINATION
I concluded that the integrated approach is most useful to my study. The integrated approach frames the dynamic environment to set our mental power into harmonious free-play – perceptual quality and the natural science model (a knowledge-based approach) remain discrete in the integrated approach. The power of imagination draws these things together in aesthetic experience.

Aesthetic experience can unfold into aesthetic truth through powerful imagination. Aesthetic truth is different from scientific truth (See p. 30, chapter 2).

IV. Dialogical aesthetics

Following Kester there are three kinds of relationships between artwork and the spectator in contemporary art: 1) an optical relationship which is primarily relying on the visual sense to experience art which includes the development of narratives of meaning that surround that work, 2) an interactive relationship that involves the spectator's intervention, an integrated visual and haptic response – here the meaning of the work is completed by audience participation 3) a participatory relationship that involves a dialogic process of the work rather than a relationship with the product.

Here the non-artist other (human or non-human), participates in the development of form, process and meaning.

The dialogical aesthetic is a conversational domain. Conversation consists of language and words. Each word can have a semiotic (code) relationship and a symbolic relationship might not only be specific to the place, but also to the social, cultural, political, economical and environmental conditions of the work.

EMPATHY AS A CRITICAL VALUE, A CONDITION OF AESTHETIC DISCOURSE IN DIALOGUE

Essential to my study is Kester's idea that empathy plays an important role in dialogic aesthetics and can be recognised in conversation through inter-subjective exchange. Empathic identification has a feedback loop in which we observe the other's responses to our statements and actions. Empathic response can be inaccurate. As a result any attempt at empathic response must be pursued with full attention to perceptions of accuracy and inaccuracy. (This idea is similar to Lakoff' and Johnson's ideas about empathic projection.)

How do these ideas work when applied in actual art projects? In the next chapter I reflect on this framework with two case studies that focus on trees as a subject matter. I consider Joseph Beuys' *7000 Oaks* and Helen Mayer Harrison and Newton Harrison's *the Serpentine Lattice*. Part of the struggle in the next chapter is the fact that these concepts and frameworks are theoretical – in practice the purity of ideas evolve in each situation. The context in which art occurs and the practice of individual artists reshape ideals.

Chapter 3: Case studies – Beuys and the Harrisons

In the previous chapter I presented a theoretical framework that provided me with a critical apparatus or a set of investigative and analytical tools to investigate the art. In this chapter I examine two historical artworks by two artists who have influenced my art practice. My case studies are*7000 Oaks* by Joseph Beuys and *The Serpentine Lattice* by Helen Mayer Harrison and Newton Harrison. Trees are the subject matter in these artworks; they provided me with a historical context for my own artwork (in chapter four) that deals with trees.

In each case-study my research methods consisted of: 1) site visits, 2) grasping the artwork, 3) investigation of the components, 4) investigation of the context, 5) reflection on the case-study and its relationship to the theoretical sources and key elements identified in Chapter two. In the latter case I am trying to understand how theory may, or may not, be embedded in the practice or how theory might provide critical insight about the practices and outcomes in my case studies. I have focused my theoretical interests on the following categories that I believe are relevant to the review of my case studies and practices: empathy, metaphor and aesthetics. Specifically, there are six points to which I paid attention: a) empathy is defined by clear limits on self-interest, b) recognition of empathic symbols, c) awareness of metaphorical foreground/background relationships, d) metaphorical projection of an image of ourselves as another, e) aesthetics that embrace an integration of somatic perception and intellectual knowledge through imagination, and finally f) empathy as a critical value, a condition of aesthetic discourse.

First I gathered information that explained the artwork and context. In Beuys' case I have visited the Documenta 12 (2007) in Kassel Germany to understand the work in context and in its current state of the development. I also found information about the project process, materials and the artist's background through books and articles: Demarco's magazine *Beuys in Scotland: Cencrastus*, Kuoni's *Joseph Beuys in America*, Willisch and Heimberg's *Joseph Beuys The End of the 20th Century*, and Cooke's essay *7000 Oaks* on the online resource Deer Foundation site. In order to understand the symbolic meaning of oak in German culture two literatures provided important resources about mythology: Frazer's *The Golden Bough* and Schama's *Landscape & Memory*. Schama's consideration about the relationship between Anselm Keifer and German woods provided a better understanding of Beuys' approach. Frazer made me understand how superstitions and taboos have been (and still are) taking important roles in cultures and civilizations. Mythology is a large subject and not the main

focus in this case-study. However it is important because of the relationship between people and trees in a mythological context that has different implications than simply anthropomorphising nature.

The second case-study followed a similar research process. The Harrisons' work involves history, political issues of forestry practice as well as ecological systems between Northern California and British Columbia, Canada. The project information I relied on were the exhibition catalogue and the artists' own articles, 1) *Public Culture and Sustainable Practices: Peninsula Europe from an ecodiversity perspective, posing questions to Complexity Scientists* in Structure and Dynamics: eJournal of Anthropological and Related Sciences (2008), and 2) *The Serpentine Lattice* in *Sculpting with the Environment*, edited by Baile Oaks (1995). The history of forestry practice produced important background information for the Harrisons' case study. I also relied on an interview with them in Bristol, UK in 2008 (Appendix A4). During this interview I began to understand the importance of metaphor in their ecological artwork. The Harrisons' work is a perfect example to understand creative metaphor that I talked about in the previous chapter.

Chapter 3.1: 7000 Oaks (1982-1986)

> I think the tree is an element of regeneration which in itself is a concept of time.
>
> Beuys in Kuoni, 1990, p.111.

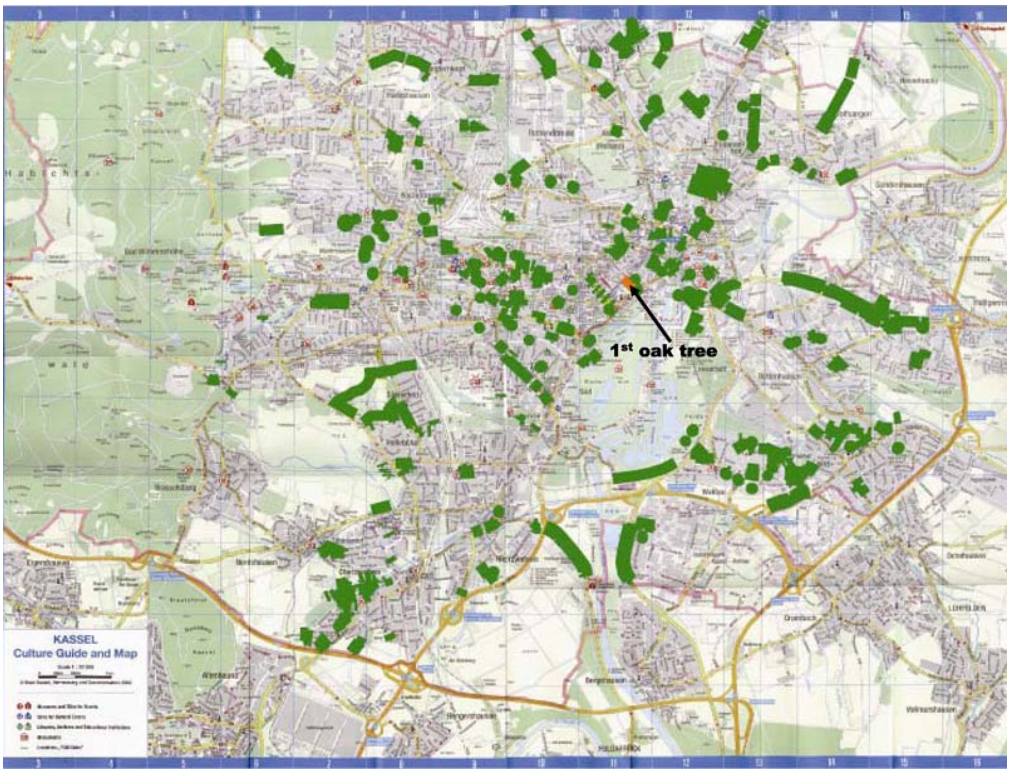
The site visit

In the summer 2007 I visited Kassel, Germany to see *7000 Oaks* by Joseph Beuys. It was developed for, and presented at, Documenta 7 in 1982, an international art exhibition at Museum Fridericianum. The Documenta[40] was initiated in 1955 by Arnold Bode, an artist and art educator. At the time the city was still under re-construction from the war. Modern art had been prohibited under Nazi dictatorship. The intent was to establish an international exhibition by contemporary artists such as Jean Arp, Pablo Picasso, Paul Klee and Henri Matisse among other artists. They played an important role in the restoration of culture in that place at the time. Kassel was a city that had been bombed and 95% destroyed during the Second World War. On the Sunday market stalls I found many used books with photographic documentation of the air raids. At the museum I purchased a map that indicated the location of Beuys' trees (Figure 3). Beuys' trees were planted as new tree lanes all over the city. I

[40] Documenta took place every five years across the city of Kassel with a focal point at Museum Friedericianum in Friedrichsplatz, the heart of the city.

walked along Fünffenster-Straße, Ludwig-Mond-Straße, Tischbeinstraße, Eugen-Richter-Straße, Helleböhnweg, Heinrich-Schütz-Allee, and near the Fridtjof Nansen Schule. Beuys' trees were found in the middle of the city, in established residential neighborhoods and in newer developments.

My expectation of *7000 Oaks* was loaded. I expected an extraordinary experience from the trees – instead, I experienced factual elements of the artwork. *7000 Oaks* consisted not only of oak trees, but also other tree species. The attendant basalt columns differentiated Beuys' project from other trees in the city. The uneven, yet similar hexagon-shaped basalt columns drew the viewers' attention. The tree trunks and the columns were almost the same diameter (Figure 4). The passage of time could be imagined not only through the growth of the tree, but also by the moss and lichen on the surfaces of the tree bark and the stones. My observation about the trees was very general and ordinary. Something was lacking inside of me to understand this monumental artwork. My investigation began with reviewing the documentations and the context of the artwork.



(Figure 3): A map of 7000 Oaks. The green dots are the locations of Beuys' trees

(Figure 4): 7000 Oaks. A basalt column with an oak tree trunk (image left), 7000 Oaks in the residential area, the right side of the tree lanes do not have the columns. (image middle), a person is sitting next to the Beuys' oak tree and the basalt column (image right).

7000 Oaks

> I will start in very difficult places in the center of the town. There the places are very difficult because there is already coating of asphalt and stone slabs with infrastructures of electrical things and the German Post office. In the center of the town the planting of a tree is most necessary for the people that live there within an urban context.
>
> Beuys in Kuoni, 1990, p.113.

In 1982 *7000 Oaks* began at the Fridericianum, the core of Kassel. The planting was organised under the auspices of the 'Free International University[41]'. Beuys negotiated the location of the trees with the City Council. He also worked on raising funds from various sources with significant funding coming from the Dia Art Foundation. He sold his own artwork to support the project, and received additional support from individuals. The estimate cost per tree (oak, basalt column, transport and planting action) was 500 DM (Willisch and Heimberg, 2007, p.328). The seven thousand trees consisted mainly of oaks, but other species such as ash, chestnut, crab apple, elm, gingko, hawthorn, linden, locust, maple, sycamore and walnut (Willisch and Heimberg, 2007, p.63). Each sapling was about 4-6 inches in diameter when it was planted. Each basalt column was approximately four feet above the ground when it was placed next to a tree. The planting was primarily supported by the citizens of Kassel, although there were malicious incidents in 1986. On the Dresdener and Göttinger Straße 56 oak trees were snapped and damaged (Willisch and Heimberg, 2007, p.328).

At the outset of the project Beuys accumulated all seven thousand basalt columns in front of the Fridericianum, the main building of the Documenta exhibition. The pile of the seven thousand basalt columns was massive and overpowering in the pristine garden, although it was worth considering whether the pile or the gradual disappearance of the columns was a part of the sculptural process. The

[41] The Free International University founded by Beuys in 1974.

dissipation and relocation of the pile of columns was also a clear indication of the progress of the planting project that was happening elsewhere. As the pile dissipated the forest expanded.

There were incidents in response to the accumulation of the basalt columns. Just before the opening, young men spray-painted areas of the pile pink. They thought planting oak trees was acceptable, but the pile of the basalt detracted from the grand museum building that was built in 1799. This malicious incident could indicate the young men's aesthetic views were perhaps more traditional. The paint was removed right away. Later on someone spray-painted several gold silhouette images of hares and hedgehogs on the columns. Beuys not only accepted these images but also re-stencilled the hare and made multiples to send some of the columns to a specific gallery (Willisch and Heimberg, 2007, p.331). This process of subtle co-creation by the artist and the audience could suggest that different kinds of communication and tension existed within the process.

The project took five years to finish the planting. Beuys died in 1986 and his son Wenzel finished the project. *7000 Oaks* was adopted on other sites beyond Kassel including The Dia Foundation in New York City, Walker Art Center in Minnesota, Cass Lake in Northern Minnesota, The Middlebury College Museum in Vermont and at the Art Academy in Oslo, Norway.

The artist background

Beuys was born in Krefeld, Germany in 1921. He was an only child in a strong middle-class, Catholic family. In his youth he was interested in nature, science and art. In 1940 he joined the military, volunteering in order to avoid the draft. He was trained as an aircraft radio operator and combat pilot. In 1944 Beuys' plane was shot down on the Crimea Front and crashed close to Znamenka. He claimed that Nomadic Tatar Tribesmen found him severely wounded in the snow and brought him into one of their tents. They applied animal fat and wrapped his body in felt to keep his body temperature warm in order to sustain his life in the cold environment for eight days (Stachelhaus, 1974, pp. 21-2). Some years later when Beuys became an artist he used felt and animal fat obsessively as materials for making objects such as *Fat Chair* (1964), *Felt Suit* (1970), installations such as *The Pack* (1969) and in performances such as *I Like America and America Likes Me* (1974). Beuys was a mature and established artist when he became a professor of monumental sculpture at the Düsseldolf Academy in 1961. Beuys provided niches for young people seeking ideologies and direct action for creative change that was a key element of his idea of *Social Sculpture.* He insisted on registering 125 students who had been rejected from attending his lecture. His academic position was threatened twice in 1968 and 1972. It was the era of student power. Beuys founded the German Student Party in1967, the Organization of Nonvoters Free Referendum Information Point in1970, the Organization

for Direct Democracy through Referendum People's Free Initiative in 1971, and the Committee for a Free College in1971 (Stachelhaus, 1974, pp. 186-192). In 1974 he became a founder of the Free International University for Creativity and Interdisciplinary Research (FIU). In1979 he was elected a Green Party candidate for the European Parliament. In 1986 Beuys died of heart failure after a long illness.

Basalt columns

> …the plants are rooted in the earth, practically in the sort of material that the stone is made of. Indeed when the basalt weathers, it becomes enormously fertile soil.
>
> Beuys in Willisch and Heimberg, 2007, p.306.

The seven thousand trees consisted mainly of oaks, but other species such as ash, chestnut, crab apple, elm, gingko, hawthorn, linden, locust, maple, sycamore and walnut (Willisch and Heimberg, 2007, p.63) were also planted. Each sapling was about 4-6 inches in diameter when it was planted. Each basalt column was approximately four feet above the ground when it was placed next to a tree. Currently the tree trunks and the columns are almost the same diameter (Figure 4). The passage of time could be seen not only through the growth of the tree, but also via the moss and lichen on the surfaces of the tree bark and the stones.

The shape of the basalt columns is unfamiliar in the landscape even though the rocks are natural and local in Kassel. Beuys' basalt columns are quarried nearby at Landsburgh near Michelsburgh, in North Hesse and trucked from 30 km away into the city (Willisch and Heimberg, 2007, p.90). The irregular hexagon shape is the result of a specific pattern of cooling of lava. Basalt is one of the hardest igneous rocks and consists of rich minerals yet it can be broken into pebbles by the erosive phenomenon of weather and plants over time. Basalt columns are not only a subject of earth science, but also of landscape paintings by artists such as Susanna Drury[42], Joseph Turner and Carl Gustav Carus[43].

[42] Susanna Drury (1733 – 1770), an Irish painter, painted the scenes of Giant's Causeway. Her engravings were used in the French Encyclopedias (1765). The name of "Fingal" comes from the mythological character of Scottish legend "Fin" who built the causeway between Ireland and Scotland.

[43] The Fingal's Cave on the Island of Staffa in Scotland was painted by Joseph Turner (1832) and Carl Gustav Carus (1844).

Oak in German culture

> We know that the oak in Germanic lands was the sacred tree, the tree of Thor, the god of thunder and lightning. Unless I'm mistaken, wasn't the tree also the symbol of justice.
>
> Beuys in Kuoni, 1990, p.94.

Oak was a national tree of Germany, and has deep historical meanings within that culture. James George Frazer, Scottish anthropologist, said, "From an examination of the Teutonic words for 'temple' Grimm has made it probable that amongst the Germans the oldest sanctuaries were natural woods of the Aryan stock. Amongst Celts the oak-worship of the Druids is familiar to every one…" (Frazer 1994, pp. 82-83). Kassel was once called *Castellum Cattorum*, it meant a castle of the Chatti, an ancient German tribe in the area. In a historical site near Geismar in Hessen, not so far from Kassel, Saint Boniface destroyed 'Thor's oak[44]', a sacred oak tree of the Chatti tribe in 1737.

There are a couple of important historical documents that describe a deep relationship between Germanic tribes and the natural environment: *Commentarii De Bello Gallico*, The Gallic War, a historical narrative, by Julius Caesar (BC 50s – BC 40s), and G*ermania*, an ethnography by the Roman historian Cornelius Tacitus (AD 56 - AD 117). In both documents German nomadic tribes were described as barbarians who inhabited the area around the Hercynian forest; an area extending from the Rhine to Romania. This immense forest was described as a nine-day journey in breadth and sixty in length (*Commentaries on the Gallic War* [45]). These wild men and women lived by hunting and gathering in woods and bogs. German tribes were also described as barbarians in the engravings by Philip Cluverius[46] in 1616 (Schama, 2004, p.90 and p.101). Their belief was a natural religion, and they worshipped the sun, fire and moon (*Commentaries on the Gallic War*). To the savage the world in general is animate, and trees and plants were no exception to the rule (Frazer 1994, p.84). Here we can see that German myths and culture are deeply rooted to the forest environment.

---

[44] Museum of Learning (no date) *Donar Oak*. <http://www.museumstuff.com/learn/topics/Donar_Oak>

[45] Julius Caesar, G. (1869) *Commentaries on the Gallic War*. (W.A. McDevitte and W.S. Bohn, trans.) New York: Harper & Brothers [on line] Corpus Scriptorum Latinorum [cited 1 December 2010]. < http://www.forumromanum.org/literature/caesar/gallic_e6.html#25>

[46] Philip Cluverius, Germania Antiquae, 1616.

Image of German forest

In this section I talk about how the Wars and German militarism influenced German myth, forests and art. Symon Schama represents paintings and drawings to talk about his interpretation of German mythology (Schama, 2004, pp.75-134). According to Schama, during the First and the Second Wars, the National Socialist Scholarship in the Third Reich has sought reference points to an idealised racial identity. They paid attention to philosophers such as Conrad Celtis (Schama, 2004, pp.92-4), Johann Gottfried Herder (Schama, 2004, pp.102-3); writers such as Ulrich von Hutten (Schama, 2004, p.95) and Wilhelm Heinrich Riehl (Schama, 2004, pp.112-15, 116). Schama recites Wilhelm Heinrich Riehl (1823 –1897), journalist and novelist, "[The forests were] the heartland of German folk culture…so that a village without a forest is like a town without any historical buildings, theatre or art galleries. Forests are game fields for the young, feasting-places of the old." (Schama, 2004, p.114)." The deep relationship between forest and German culture can be recognised through folklore such as the Brother Grimm's *Hansel and Gretel* and through music such as Richard Wagner's *Der Ring des Nibelungen*. The cultural images and ideas of forests flourished artistically and intellectually, while the actual forests were disappearing. Needless to say cultivation of forests began with ancient civilizations and reached a climax in the Middle Ages. Industrialisation over the last two hundred years enhanced the production of mining, timbering, farming and fishing. Technology enabled fewer men to work faster on a larger scale.

Paintings and drawings can be the witness of changes. In the painting, *St. George and the Dragon* (1510) by Albrecht Altdorfer (Schama, 2004, colour illus.11), the detailed forest seems to consist of diverse mature tree species with a rich understory growth. Three hundred years later Casper David Friedrich painted *The Chasseur in the Forest* in 1813 (Schama, 2004, illus.13). In his painting the forest consists of dark conifers. The difference between Altdorfer and Friedrich is the ecological quality and diversity of the forests. I imagine the sounds of song-birds in Altdorfer while there would be dead silence as a result of the mono-culture forest in Friedrich.

Schama represents Keifer' *Untitled* painting (1971) (Schama, 2004, p.121). A small artist's self portrait looks like floating in the upper middle of the painting against a dirk fir forest. The year of the production and the painting theme seem to corelate with the residence of the artist at the time. Schama said, "Anselm Keifer moved there [the Odenwald, South-west Germany] in 1971 not much was left of the Hercynian forest" (Schama, 2004, p.120). The forest was already heavily fragmented by industries in the 18th century and replaced by conifers by the forestry industry in the 19th century.

Keifer and Beuys knew each other. Keifer was twenty-four years younger than Beuys, and had no experience of war. Both artists were confronted by Germany's post-war aftereffects. Both were interested in the same kind of mythological background of trees. Keifer's neo-expressionist paintings

were metaphorical while Beuys' *7000 Oaks* was symbolic. There was a conversation between Keifer and Beuys in Basel[47] in 1985. Koji Taki (Taki, 1997, pp.117-37) referred to what Keifer said to Beuys (English translation by Goto), "I have no interest or desire about your belief that everybody is an artist. I think there are artists and non-artists. It has been like that in the past, and it will also be like that in the future. I don't think artists are the centre of the universe. We have been talking about gods that cannot exist without humans. However I believe that there are some gods that exist without humans. I think it is possible for artists to express the power of these gods. We can learn from things, but it is absurd to think things are not related to us. This is the point that distinguishes artists and non-artists." (Taki, 1997, p.134.) Taki explained; "Gods without a human relationship is a metaphor of an unanswerable query. Beuys is not interested in Keifer's enquiry… In Beuys' position Keifer seems to be only thinking about his interest…Beuys is much more interested in the politics and economy that inform human society. His idea of the role of the artist begins with this" (Taki, 1997, p.135). In response to Taki I think about Schama's interpretation of Keifer's paintings such as *Varus* (1976) (Schama, 2004, pp. 127-8 and illus.16) and *Paths of the Wisdom of the World, Hermann's Battle* (1978-80) (Schama, 2004, pp.128-9) that appeals to me as a melancholic response to the German mythology in relation to the wars. Beuys, who actually experienced the war, seemed to be emancipated from bondage of the cultural and social wounds by a transformative act through an international exhibition that was originally intended to restore the culture through art. Referring to Beuys, Taki said, "In the present circumstances, economy is not useful for communities but only for making profit. We have reasons to end the monetary economy; however democracy, legislation or Marxist's economics cannot transcend the current condition. In other words, only the conception of art can transcend capital. This kind of art exists in, and relies on, an ability that belongs to all humans" (Taki, 1997, p.135).

In *7000 Oaks* Beuys' symbolic act is to transform the tension between the romanticised nature and the actual condition of the forest. It is not about representation or non-representation but has to be real trees. This production models a different kind of economy that is symbolically connected to the notion of social sculpture.

The next section is a reflection of the case study. The framework that I have developed in the previous chapter is modified and integrated in relation to the artwork and its context.

[47] In 1985, having been invited by art historian Jean-Christophe Ammann, four people, Joseph Beuys, Enzo Cucchi, Anselm Kiefer and Jannis Kounellis spent a few days in Basel talking about art in the new century in relation to European culture, elimination of the bourgeoisie and the new world.

Reflection on *7000 Oaks*

EMPATHY REACHES BEYOND SELF-INTEREST; THIS IS HOW IT DIFFERS FROM SYMPATHY

> Sympathy is an act of assuming feeling in another based on what we know. In this sense it is founded in intellectual understanding in which we rationalise a situation and impose a projection. Unlike empathy, sympathy reflects one's own experience and intellectual understanding rather than reaching beyond it. Empathic experience involves intellectual understanding expressed as a new idea. Sympathy is based on one's self-interest in the context.
>
> Empathy is not based on one's self-interest. It is a reaching beyond self but without losing or forgetting oneself. We bridge the gap between self and other. We resonate with the feeling of the other and amplify it. Empathy in this sense occurs between subjects. It is inter-subjective. In this way empathy helps us to enrich our own world-image through different individuals.

In Beuys' case the debacle in the modern period is between romanticised nature and the actual conditions of the forest that have been influenced by the industrialisation and the World Wars. Beuys' empathic response is found in his symbolic act. The symbolic meaning of the oak in German culture is related to mythology, a type of metaphor. It engages with empathy indirectly.

RECOGNITION OF EMPATHIC SYMBOLS (THIS FEELS) VERSUS SYMPATHETIC SIGNS (THIS MEANS)

> In chapter two I talk about how Stein differentiates symbolic relationships from sign relationships (pp.15-6). The body and mind relationship corresponds to a foreground and background relationship. Therefore, a symbol is different from a sign that indicates specific meaning through intellectual knowledge and reflective understanding.

In *7000 Oaks* the hexagon-shaped Basalt rocks draw the audience's attention and differentiate Beuys' trees from other groupings of trees through sign relationship. During the Documenta 7 exhibition the basalt columns were stored as a pile in front of the museum waiting to be placed with the trees. People could imagine the progress of the project through the correlation between the size of the rock pile and the progress of the tree-planting in the city. Currently people can notice the change and the passage of time by observing the relationship between the size of the tree and the basalt column. Upon the death of the tree, the stone column (operating in geologic time) either marks what is missing or encourages the city to plant another tree.

7000 Oaks has a symbolic relationship between (oak) trees and German Culture through mythology. Mythology becomes the form (like countenance) by which we understand the relationship between people and trees. The meaning of the basalt columns seems to consist of two separate entities: 1) sign relationship through information and imagination; and 2) symbolic relationship through empathy, body and mind.

AWARENESS OF METAPHORICAL FOREGROUND/BACKGROUND RELATIONSHIPS

> Schön's generative metaphor/creative metaphor raises awareness of foreground/background conditions and relationships. It is used to both generate and rationalise a complex reality in a new way that in turn shapes how we respond to or interact with that setting. It does not directly solve the problem but suggests a new situation. It enables a new perception and supports transformation.

In Beuys' case the creation of a new mythology begins with dismantling the debacle between romanticised nature and the actual condition of the forest. In the case of *7000 Oaks* the actual trees and basalt stones appear to operate in the foreground and culture, history and time are in the background. This relationship provides a material/temporal tension. Planting trees as an artwork was a unique and different method setting the work off from any other artworks at Documenta 7 (1982). This cultural framework makes *7000 Oaks* different from other municipal tree planting projects.

METAPHORICAL PROJECTION OF AN IMAGE OF OURSELVES AS ANOTHER

> Following Lakoff and Johnson's idea creative metaphor raises body-bound consciousness. It enables not only a new perception but also helps transformation. Empathic projection is a type of metaphor that helps us to imagine ourselves as if the other is looking and judging our behavior. This rationalisation comes from the relationship between what is perceived and what is presented.

During my visit I saw an old man sitting on the basalt column next to a Beuys' tree. He looked as though he might have been the same age as Beuys, were the artist still alive. When this man was young, the tree was smaller. This is different from a sign relationship – it relies on memory and an empathic projection.

We also project our inner perception on objects and their environment, for example, some soy sauce flavours remind me of Japanese food; when I read a letter from my grandmother, I can almost hear her voice. These examples are different from imagination and intellectual understanding. They rely on one's personal memories and feelings. In the same manner we recognise ourselves through culture and nature.

The symbolic oak in Celtic culture is not defined by an individual, but it has flourished in shared experience through culture.

AESTHETICS THAT EMBRACE AN INTEGRATION OF SOMATIC PERCEPTION AND INTELLECTUAL KNOWLEDGE THROUGH IMAGINATION

> The integrated approach frames the dynamic environment to set our mental power into harmonious free play – perceptual quality and the natural science model (a knowledge-based

> approach) remain discrete in the integrated approach. The power of imagination draws these things together in aesthetic experience.

7000 Oaks is an exemplary original work matching Documenta's cultural mission with an ecological action. However, the artwork does not intend to restore the original forest or revitalise the nationalistic movement through cultural symbols. Instead, Beuys' idea is a social sculpture that captures creativity and imagination; the idea enables a new relationship between the artwork and the environment.

EMPATHY AS A CRITICAL VALUE, A CONDITION OF AESTHETIC DISCOURSE IN DIALOGUE

> Kester argues empathy has an important role in dialogic aesthetics. It can be recognised in conversation through inter-subjective exchange. Empathic identification has a feedback loop in which we observe the other's responses to our statements and actions. An empathic response can be inaccurate. As a result, any attempt at empathic response must be pursued with full attention to perceptions of accuracy and inaccuracy. (This idea is similar to Lakoff' and Johnson's ideas about empathic projection.)

The quality of speech acts and dialogical approaches (ideas from Kester) are not recognised in *7000 Oaks*. . The dialogue in the project is embedded in the process and with the material. A practical project of 3.5 million DM is not about profit but about the circulation of capital. The inter-subjective exchange is unique for the time, but limited to process, material, capital and civic permission. Instead of mouth to mouth communications, Beuys used a symbolic act that still engages everyone in Kassel – each of whom has a chance to participate in the exchange of ideas about their place, culture and environment. Beuys' idea was to introduce ecological and cultural recovery with real potential of citizen participation. He delivered a clear process of planting trees and placing rocks. Conversations are embedded in the artist's proposal, presentations and negotiations. Forms of resistance such as pink spray paint on the basalt rock pile and vandalism of some trees are an expression of tension as change took hold. The whole audience is engaged and part of the dialogue. Three actions are recognised in the process: 1) make it happen, 2) help people understand what and why it is happening, 3) protect and sustain the creation.

Beuys focused on a life experience that evokes our psyche; it opens up the transformative possibilities in art and ecology. Beuys expressed his mythological idea by using trees and basalt rocks that resonate yet are in different time frames. In the following case study the artwork refers to the forest but functions through contemporary perception and values.

Chapter 3.2: The Serpentine Lattice (1993)

In this section I talk about *The Serpentine Lattice* (1993) by Helen Mayer Harrison and Newton Harrison. Their artwork is based on metaphor. My investigation about their idea of metaphor included a site visit, discussions with them, and a review of essential background and exhibition information to understand the process of the artwork and its background information. I wanted to understand the Harrisons' metaphorical concepts and reflect upon my own theoretical framework to create an integrated one.

> We believe that our art works through *metaphor* – that all artwork is based in metaphor.
>
> Helen Mayer Harrison in Goto and Collins, 2008e, p.7.

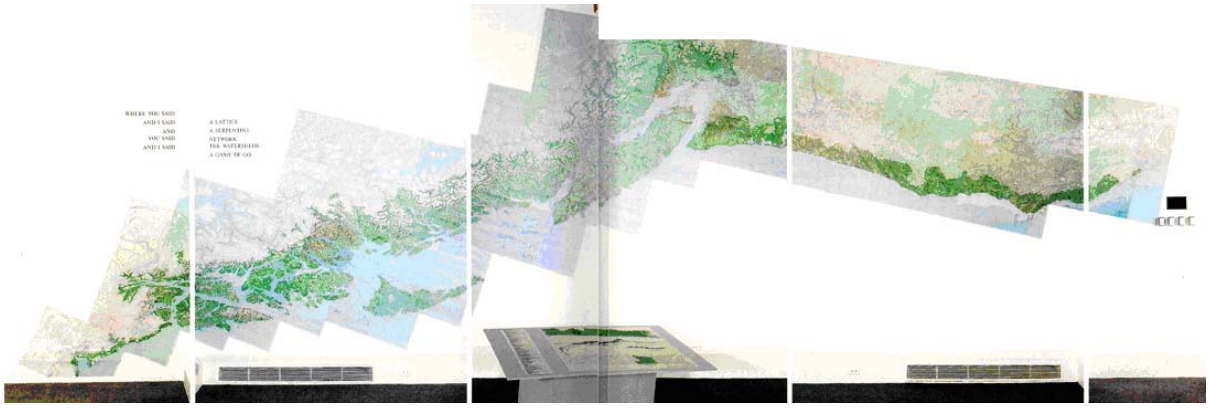
The site visit

In 1993 Helen Mayer Harrison and Newton Harrison (hereafter referred to as the Harrisons) gave a presentation at the College Art Association conference in Seattle, Washington. It was the first time my partner and I experienced their presentation. It was presented in the form of a conversation. The talk focused on their recent work, *The Serpentine Lattice*, describing the loss of the North American temperate rainforest[48] and its dominant redwood groves. A memorable question from the audience was about how their project research begins. Newton Harrison humorously made a gesture and said, "As Helen's curiosity develops she grows a pair of antennas. She is then able to find and gather information very quickly." His voice was clear, firm and tense while her voice was low and soft. She occasionally smiled gracefully to the audience. They shared their thoughts on the same issues from different points of view telling slightly different stories. At the time Collins and I lived and worked in San Francisco California (1980-1993). On the way back home we decided to stop to see their installation *The Serpentine Lattice*, at the Douglas F. Cooley Memorial Art Gallery of Reed College in Portland Oregon.

[48] The largest temperate rainforest in the world.

When we entered the gallery, it was slightly dark and filled with the sounds of multiple slide projectors automatically circulating slide carousels, each holding hundreds of pictures of the redwood forest, its current condition and the practice of clear-cutting (Figure 5). The gallery space was also filled by an enormous west coast map that occupied one side of the gallery wall (Figure 6). While we were reading the tragic prologue and narrative, we noticed a young woman, perhaps a college student. She came in and sat down on a bench in the middle of the gallery. Then, all of a sudden, she started weeping then sobbing and crying quite loudly. The woman's emotional reaction seemed to be an appropriate response to the installation. We decided to give her privacy. We walked away a bit stunned and speechless. On the way back we drove through the forests – the actual areas of *The Serpentine Lattice*. Clear-cut was not obvious from the highway, but repeated glimpses beyond the ridgeline provided a sense that the fragmentation of the forest was happening everywhere. We talked about the Northern Spotted Owl identified as an endangered species in the late 80s. The potential loss of this creature opened up questions about the impact of forest industry management and practice for public discussion.

(Figure 5): Fragmentation of the forest and old growth forest, courtesy of Helen Mayer Harrison and Newton Harrison



(Figure 6): The map of the Serpentine Lattice, courtesy of Helen Mayer Harrison and Newton Harrison

The process of the artwork

In 1992 Susan Fillin-Yeh, the gallery director and curator at Reed College, invited the Harrisons to develop a new project within one year. In the exhibition catalogue she said, "The Harrisons are conceptual artists, that is, they have moved away from the production of objects (although they do exhibit proposals and projects in galleries and make actual outdoor works and designs)." (Fillin-Yeh in the Harrisons, 1993, p.16.)

They proposed to work on the coastal mountain range between southern Alaska and Northern California as their project site. Fillin-Yeh encouraged the idea and arranged meetings with experts. They met over fifty people including ecologists, forestry experts and environmental organisations, to discuss federal and state laws, regulations and public policy concerning the lumber industry, clear-cutting and jobs. She described the beginning of the project.

> The Serpentine Lattice first took shape as a dialogue in June of 1992, shortly after Helen Mayer Harrison and Newton Harrison first walked through wooded land near Forest Park and Oxbow Park, Oregon. They flew in a small plane over the confluence of the Willamette and Columbia Rivers in northern Oregon and had conversations with "anyone who would listen and anyone who would teach us, or tell us stories, or answer questions."
>
> Fillin-Yeh in the Harrisons, 1993, p.22.

The result of their investigation including the site visits and conversations was documented as two poetic narratives that reflect on *The Serpentine Lattice,* the main story (Appendix A3). One, called "*Somebody said…*", documents and summarises the conversations in poetic form. It includes two ecologists, a forester, a geographer, a scientist, a lumberman and an environmental organisation. The second one, called "*It is known / It is not known*", was the keystone of their artistic research: "IT IS KNOWN THAT A TREE FARM IS NOT A FOREST." The story of *The Serpentine Lattice* begins with the tragic condition of the North American rainforest; then they examine the information, conversations and different points of view about the forest and its ecosystem. In the climax, the artists introduce a metaphor of serpentine and a metaphor of the lattice. These are the new creative ideas on how to transform the cultural landscape in a sustainable way.

The Harrisons' creative metaphor constructs a tension between what is foreground and what is pushed to the background. In next section I talk about the background of *The Serpentine Lattice*.

The cultural landscape

FROM SOUTHERN ALASKA
TO NORTHERN CALIFORNIA
NORTH AMERICA'S LAST GREAT TEMPERATE RAIN FOREST IS DYING
EVERYBODY KNOWS THERE'S LESS THAN 10%
OF THE OLD GROWTH LEFT
BETWEEN SAN FRANCISCO AND VANCOUVER ISLAND

The Harrisons, 1993, p.3.

San Francisco California and Yakutat Bay Alaska are connected by a series of hills and mountains that are parallel to the west coast line. Between the two places there is a continuous forest that has existed for over 20 million years. The Pacific temperate rainforest, the main focus of *The Serpentine Lattice*, has emerged in the last thousand years. The dominant woody species include: Coastal Redwood[49] (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii*), Sitka spruce (*Picea sitchensis)*, western red cedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*). This rainforest, in its mild climate, has been providing water, shelter and sustenance not only for the wildlife but also aboriginal people – cultures such as the Haida and the Tlingit. The change of the historic forest's conditions started in the beginning of the 19th century. The era of the American West began with the expedition of Meriwether Lewis and William Clark (1804- 1806), followed by the Mexican War (1846-1848), then the gold rush (1848 -1855). More and more immigrants and settlements moved to the west coast in the late 19th and 20th centuries. The Pacific Lumber Company purchased 6,000 acres of woodlands at $1.25/acre in 1863. The Union Pacific Railroad was built in 1869. The transportation system replaced the human pace, and machine power replaced animal power. Preservation and environmental activism also began with John Muir's campaign to preserve Yosemite area as a national park in 1864. Sierra Club, an environmental organisation was established in 1892 and the Save-the-Redwood League was founded in1918. During World War II (1941) the military industrial complex drove forestry and lumber production. The invention of the chainsaw (1945) harvested more trees and large tracked vehicles could haul lumber with limited human labour. The Work Projects Administration promoted reforestation by encouraging tree farming, the strategic planting of single species, fast growth trees such as pine and economically viable short term Christmas tree crops in the 40s. The endangered species act was established in 1973, and the Northern Spotted Owl gained public attention in the 80s. Forestry in remnant old growth groves in the National Forests ended in 1991 to protect the Northern Spotted Owl. Meanwhile thousands of individual loggers and small sawmill owners have lost jobs. Unemployment is assumed to be the result of the

[49] The redwood has been extensively used for outdoor construction because it contains a chemical substance called polyphenol, which has a natural resistance to decay. Trees can be a renewable natural resource. The Harrisons said it takes more than 200 or 300 years (Harrison, H and Harrison, N. in Oaks, 2005, p.198.) to re-establish old-growth forest. Lumber companies usually harvest new growth every 30 to 60 years (Harrison, H and Harrison, N. in Oaks, 2005, p.198). Before the development of methods for casting large metal pipes capable of carrying large amounts of water, redwood flumes carried water over long distances. The wooden flumes are no longer used, but the old structures still remain in places like the San Andreas watershed, on the peninsula south of San Francisco (Goto and Collins, 1992, p.24).

conflict between the spotted owl activists working to protect old growth trees through the Endangered Species Act and the logging industries that need to harvest trees to survive. The fact is the majority of large trees have been harvested by an automated logging industry that no longer requires a lot of labour.

Environmental activism increased with Redwood Summer in 1992 capturing national attention. The activism took two forms. Some, characterised as 'monkey-wrenchers', attacked the tools and vehicles of the forest industry spiking trees with great nails, steel or ceramic rods that could shatter saw blades and endanger forestry workers. A softer activism was a more common peaceful direct action, acting as public witness to injustice and wrongdoing. The most celebrated action was by Julia Butterfly Hill who protested against the redwood harvest by taking up residence 180 feet up a tree for 738 days; the tree was nicknamed *Luna* by her activist friends and colleagues. Her actions blocked the Pacific Logging Company from cutting it down between 1997 and 1999. The tree was then enclosed in an agreed land preservation zone. A year later it was partially sawn through by vandals, but then secured. It stands and thrives to this day.

In 1999 the sale of thousands of acres of land became the Headwaters Forest Reserve. In that agreement strict rules were put in place requiring the company to manage its holdings under more restrictive regulations[50]. The Pacific Lumber Company had thousands of workers in 1900 and was employing only a few hundred in the 1990s.

At this time forestry practice was under scrutiny by the general public, government environmental regulators and advocacy organisations[51] (Deukmejanm G. et al., 1990). In 1993 the Clinton Administration proposed a watershed-based forest management plan called *The Forest Plan for a Sustainable Economy and Sustainable Environment*. The plan focused on three major components:

1) Forest management is based on watersheds as the fundamental building block for planning and decision-making.

2) Economic development targets four groups for assistance: workers and families; communities and infrastructure; business and industry; and ecosystem investment.

3) Agency coordination proposes "forest planning based on watersheds and *physiographic provinces*" with analysis by "provincial-level teams" that would involve "all affected parties in the discussions."

---

[50] The company was noted for pioneering select harvesting, until a hostile take-over in the late 1980s, changing a reasonably sustainable approach to forest management and practices. It filed for bankruptcy and eventually transferred holding to the Mendocino Redwood Company in 2008; a new company with a harvest model that eliminated clear-cutting and put clear limits on old growth harvesting. Wikipedia (no date), Pacific Lumber Company. < http://en.wikipedia.org/wiki/Pacific_Lumber_Company>

[51] In 1990 in California, the Resource Agency, Department of Forest and Fire Protection revised and updated an original study that had been done in 1972. The report claimed that clear-cutting did not cause the destruction of the redwood forest and that it was an appropriate silvicultural method (Deukmejanm G. et al., 1990). *A Review of Redwood Harvesting Another Look* [online]. State of California The Resources Agency Department of Forestry and Fire Protection.
< http://www.fire.ca.gov/resource_mgt/downloads/forestry/RedwoodHarvesting1990.pdf>

The Clinton plan focused on ecological quality while the redwood harvest study focused on the tree coverage. The proposal was addressed within the U.S. political boundary while the Harrisons' watershed boundary goes beyond the borderline making a case for international support for the largest coastal temperate rainforest in the world. The work on the Serpentine Lattice was obviously developed within a dynamic and changing federal and state regulatory structure and an opportune time for expansive and creative thinking.

The *Serpentine Lattice* was embedded in a context of social and economical changes that affected the ecological system. Loss of niches would affect not only the wildlife, but also workers who were no longer fit for services as large ecosystem resources and economic systems changed, or even failed. The story of the *Serpentine Lattice* reached a dramatic denouement. To reach this point of elucidation the Harrisons resorted to metaphorical concepts – methods that they identify as *a field of play* and *the metaphorical flip*. In the next two sections I examine creative metaphor in *the Serpentine Lattice*.

A field of play

> "The concept *field of play* comes from our background training and early work in the field of art. Although vastly simplified, most early design training works with field relationships: figure / ground, foreground / background, perceptual training to help develop abilities in painting, sculpture and architecture. For the painter, the field of play becomes a canvas, the physical boundaries are the edge of a canvas, the conceptual boundary conditions have to do with depth perception and field perception and course, then, formal relationships and whatever narratives the artist wishes to convey, or in some cases, reduce."
>
> The Harrisons, 2008, p.4.

A field of play begins with a perspective change by using maps. The actual size of the project is about 2000 miles long and up to 30 miles deep. The Harrisons rely on a bird's-eye view with 80 different parts of United States Geographical Survey topographical maps. Each map is a 27-inch by 22-inch rectangular shape, but altogether they form a 36-foot long map (The Serpentine Lattice, 1993, p.22). Two lines delineate the serpentine form. One is the actual shoreline between Northern California and Southern Alaska. Where is the second line made? Newton Harrison would say, "Look at the upper ridge line of the forest…(The Harrisons in Oak 1995, p. 200.)" but there was no visible ridgeline on maps, or indication of a coastal watershed boundary. A watershed is a physical metaphor that conceptualises the land area from which surface runoff drains into a stream, channel, lake, reservoir or ocean – also called a drainage basin. The line has to be determined topographically by the highest elevation points along the ridges that direct water to the western shoreline. In the narrative it is

explained as "THE CREST OF THE COASTAL MOUNTAINS (Appendix A3)" and "THE NORTH/SOUTH RIDGE LINE (Appendix A3)". The area is vividly hand-coloured in green that represents the serpentine (Figure 7), a metaphor that delineates the shape and form of the coastal watersheds as a whole. In this framed topography, hydrology, soil and ecology provide the context for the temperate rainforest and its resident communities of people and other living things. The Harrisons said, "We realized that the green area represented the former extent of the Coastal Rain Forest." (The Harrisons in Oakes 1995, p. 200.)

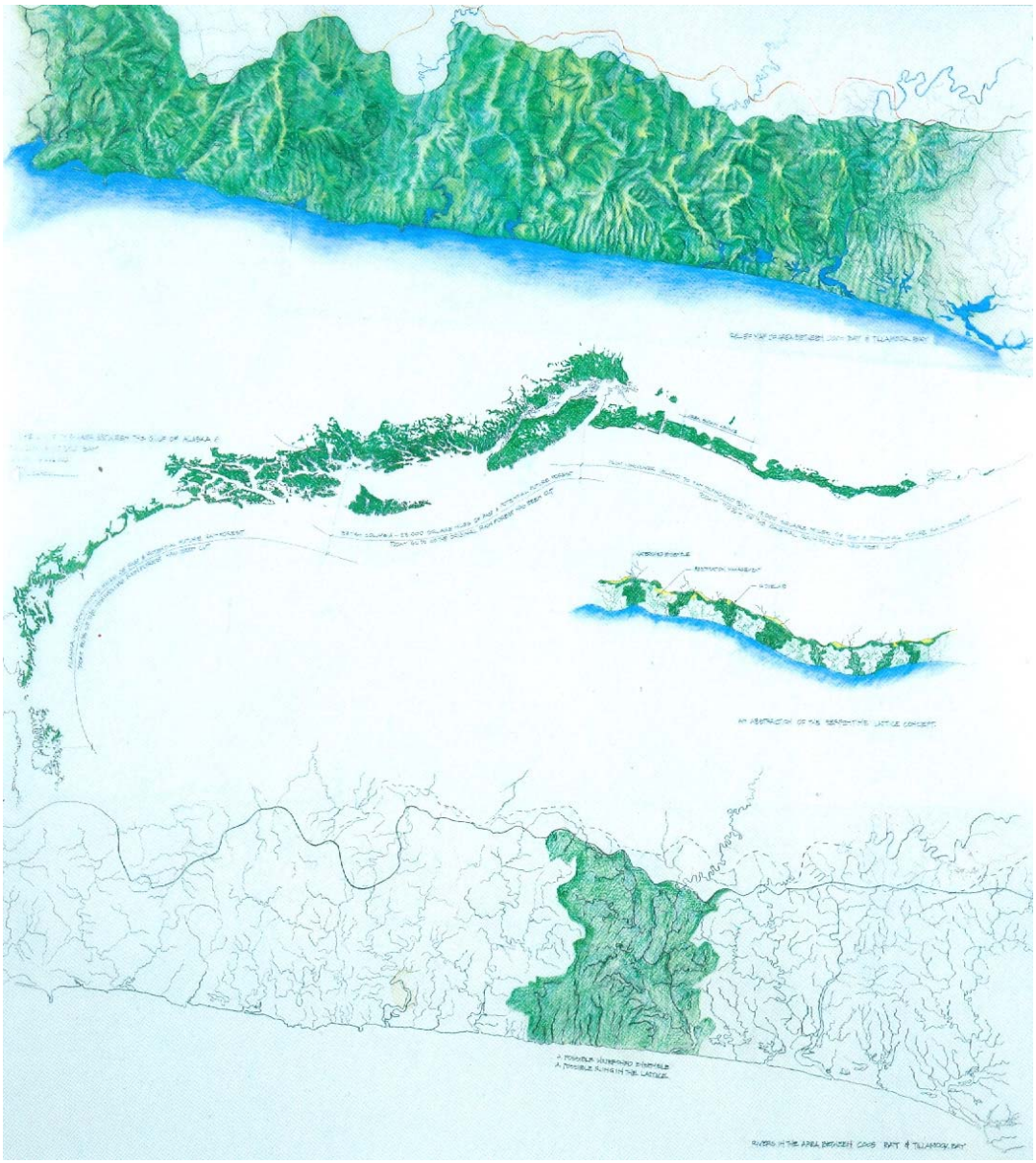
The second metaphorical figure is the lattice. They also explain how the *field of play* works on the lattice. "We took the canopy off, and noticed rivers and tiny little watersheds running from the ridge line to the sea in very complicated and interesting patterns. When we draw a line around a watershed from the high ground, it looked almost like a leaf; patterns began to emerge" (The Harrisons in Oakes, 1995, p.200).

The lattice makes a scale shift from macro to micro (Figure 7). Each shape of the lattice is the boundary of a sub-watershed. Each lattice holds its own eco-system. There are more than 3,800 streams[52] and rivers that flow through the land to the sea, which mean there are more than 3,800 sub-watersheds in the area (Fillin-Yeh in the Harrisons, 1993, p.23). The principle of *field of play* determines the perceptual boundaries. This boundary can be defined as networks of processes that could group and cluster and feed value into each other (The Harrisons, 2010, pp. 6-7).

"*Serpentine*" suggests a wriggling, or undulating snake, or a thing in the shape of a winding curve or line. "Lattice" is an interlaced structure or pattern. Both metaphors provide a symbolic relationship with the land and its geological features. Other features such as cities and roads are not presented on the map. The layers of history, indigenous people and immigrants are not there either. If the *field of play* ultimately defines an ecological context, then what will shape the nature/culture interactions? The answer to this question is considered in the second metaphoric method called *a metaphorical flip*.

A metaphorical flip is recognised in the poetic story in *the Serpentine Lattice*. It is a type of creative/generative metaphor that I have talked about in chapter two – 2.2: Empathy plus metaphor in relation to the natural environment. It is described by Donald Schön as "a special version of seeing-as by which we gain new perspectives on the world…I have become persuaded that the essential difficulties in social policy have more to do with problem setting than with problem solving…" (Schön, 2002, p.138).

[52] Streams move through different orders. The first and second order streams are steep and simple drainages from various sources such as precipitation, snowmelt, surface runoff, or ground water. The headwater is generally the earliest stage (leaves and branches) and the mouth of the river is considered the most mature (the trunk and its connection to the ocean). As a stream meanders through this continuum, it changes in terms of physical complexity, chemical and biological diversity. The actual trees in a riparian zone cover the stream with its canopy. The root systems of plants growing on stream banks help hold soil in place and reduce erosion. Vegetation on a stream bank provides shade for fish and macro-invertebrates and serves as a food source by dropping leaves and other organic matter into the stream. Diverse species of vegetation are present including trees, shrubs and grasses (Albert and Goto, 2004, p.99).



(Figure 7): The Serpentine Lattice, courtesy of Helen Mayer Harrison and Newton Harrison

A metaphorical flip

Actually the land of *the Serpentine Lattice* is filled with human history and activities. Trees can be a renewable natural resource. It takes more than 200 or 300 years (Oakes, 2005, p.198) to re-establish old-growth forest. Lumber companies usually harvest new growth every 30 to 60 years (Oakes, 1995, p.198). I began to understand that the idea of "the dying forest" means an unsustainable rate of harvest with severe impact on economic support for the human system. In this case the logging industry is a background, and the remnants of the old-growth forest and fragmented eco-system are foreground.

The Harrisons used a concept called *metaphorical flip* to transform this figure. This was explained during an interview that I organised with them in Bristol, UK (Appendix A4, p.6). The artists use "flood control" as an example.

> Helen Harrison: Our normative cultural behaviour, and then you see if there is some way that you can reverse it. When people see the flip, and the reverse, they understand.
>
> Newton Harrison: Let me give you an example.
>
> Flood control is a metaphor. Now, what is flood control? Generally speaking, flood control is defined by dams and dikes that hold the river, keep it from flooding and wrecking a town. But the dikes also destroy the river.
>
> Helen Harrison: Flood control is also the destruction of flood plains. Flood plains are meant to be flooding.
>
> Newton Harrison: And the destruction of river life – a lot of destruction in that metaphor. If you flip the metaphor, flood control is the spreading of waters – then you give me the twenty million dollars that you were going to put in the dikes; I will go and buy land above; and a whole load of design will happen which we call ecological design.
>
> Helen Harrison: We will return the flood plain to the river. We will have removed …
>
> Newton Harrison: Reiko is not understanding how one got to begin at the beginning again.
>
> Reiko Goto: Hey, dikes are not metaphor – they are real structures!
>
> Interview 2008, Appendix A4, p. 7.

Through this conversation I have learned three issues:1) metaphor can be physical such as dikes, 2) physical metaphor can be dysfunctional, 3) a *metaphorical flip* informs functional metaphor. "Dikes," "levees," and "flood walls" are traditional engineering terms that describe ways to protect a place from flooding. Protection is the dominant cultural meaning of the metaphor of flood control. "Dikes" is the term underpinning the metaphor of flood control. However, in reality they do not always prevent large floods[53]. Luna B. Leopold, a geologist, said, "The floodplain is an active part of the river during times of exceptional discharge" (Leopold, 1997, p.160). A natural "free river" is necessary to have the attendant floodplain that expands and contracts.

Ultimately this "*metaphorical flip*", or conceptual shift, expands our understanding about controlling nature. The Harrisons said, "The new or emergent metaphor is that if you address the well-being of both the town and the river, then 'Flood control is the spreading of waters.' It's not the controlling and the imprisoning of waters but the freeing of waters. This metaphor both protects and enhances the aesthetic well-being of the city as well (The Harrisons, 2010, p.3)." This kind of creative metaphor is

[53] Luna B. Leopold, a geologist, said, "The [Army] Corps of Engineers has built 17,000 miles of levees and flood walls, yet Federal Emergency Management Agency estimates that about one third of the flood disasters in the United States are caused by levee overtopping or failure" (Leopold, 1997, p.164).

based on ecological knowledge and imagination that can affect not only policy and decision-making and processes for planning and development, but also challenge morality in environmental practice.

In *the Serpentine Lattice* the dysfunctional metaphor is forest as a perpetual 'wild' resource to be harvested. It is rationalised by the result of dying forests, natural systems and human economies. The Harrisons' *metaphorical flip* re-situates the forests as a generative ecosystem. They suggest a watershed-based practice that focuses on natural boundaries, forest cycles and process. The metaphor draws imagination of free-flowing water that supports diverse and healthy populations of wildlife such as salmon fisheries. This new understanding of the place makes ecological and economical transformation possible. Furthermore, the artists suggest three ideas that enforce this creative metaphor.

1) Restoration: Develop a commercial culture of restoration of the resource. Move from woodland management to responsible ecosystem investment through restoration as a compliment to the preservation of great, old forests.

2) Continuity: In order to protect and connect each watershed, a rational strategy to preserve a "high land" green corridor on the north / south ridgeline by purchasing the private lands, a mile-wide path along the ridgeline. (The Harrisons in Oakes, 1995, p.200). A similar idea is seen in my home country. In Japan 70% of the total land is occupied by mountains. High mountain ranges are nationally owned including many acres of forest[54]. For example, the reserved area in Mt. Fuji (3776 m), the highest mountain in Japan, occurs above 400m.

3) Eco-security System: The Harrisons consider the idea of Gross National Product (GNP) and the fact that it comes from over-exploiting natural resources amongst other things as non-sustainable. They proposed to create *An Eco-Security System* based upon 1% of GNP to be used to establish a fund to support an international project of forest restoration and reclamation of the world's largest temperate rain forest. They recommend the creation of a "Gross National Ecosystem".

At the end of the story they say,"…OUR ECO-CULTURAL ENTITY CAN EXIST." With this step, the metaphor or the generative ecosystem gains new scale and value. Nature and ecosystem are metaphorically linked with human wellbeing and security. An incredible new metaphor of considerable scope and scale begins to appear clearly in the audience's mind, supported by the same green map drawing of the restored Coastal Rainforest. The new metaphor is an "eco-nomic" (an integrated ecology-economy) culture in the foreground with the larger healthy ecological system as background. *The Serpentine Lattice* becomes THE ECO-POETICS OF THE WHOLE[55] that is a new symbolic relationship between humanity and the natural environment.

[54] In Japan 30 percent of the total land is occupied by forest and 50 per cent is managed nationally.
[55] THE ECO-POETICS OF THE WHOLE is in the Harrisons' poetic text in the Serpentine Lattice (Appendix A3).

Reflections on the Serpentine Lattice

EMPATHY REACHES BEYOND SELF-INTEREST; THIS IS HOW IT DIFFERS FROM SYMPATHY

> Sympathy is an act of assuming feeling in another based on what we know. In this sense it is founded in intellectual understanding; in which we rationalise a situation and impose a projection. Unlike empathy, sympathy reflects one's own experience and intellectual understanding rather than reaching beyond it. Empathic experience also involves intellectual understanding expressed as a new idea. Sympathy is based on one's self-interest in the context.
>
> Empathy is not based on one's self-interest. It is a reaching beyond self but without losing or forgetting oneself. We bridge the gap between self and other, known and unknown. We resonate with the feeling of the other and amplify it. Empathy in this sense occurs between subjects. It is inter subjective. In this way empathy helps us to enrich our own world image through different individuals.

The Harrisons' empathic approach informs the development of their metaphorical concepts. The story of the *Serpentine Lattice* initiates sympathetic responses; "NORTH AMERICA'S LAST GREAT TEMPERATE RAIN FOREST IS DYING." This statement evokes an image sequence between the old-growth forest and its destruction. Our ethical sensibilities are engaged as sympathy for the loss of a shared experience or a common value. We understand the issues of massive clear-cutting, the diminishing old-growth forest and changes to family life and conditions in the logging communities. Environmental problems are often socially, politically and economically complex. It involves many kinds of values and interests. There are uncompromised conflicts between environmentalists and the logging communities. These responses are all based on sympathy.

AWARENESS OF METAPHORICAL FOREGROUND/BACKGROUND RELATIONSHIPS

> Schön's generative metaphor/creative metaphor raises awareness of foreground/background conditions and relationships. It is used to both generate and rationalise a complex reality in a new way that in turn shapes how we respond to or interact with that setting. It does not directly solve the problem but suggests a new situation. It enables a new perception and supports transformation.

In *the Serpentine Lattice* the artists used foreground and background as the basis of ideas such as *a field of play* and *the metaphorical flip*. The exhibition was a metaphorical petition to save this rainforest that is just short of catastrophic failure. The artwork does not illustrate the ideas but helps us to understand the opportunities and constraints that occur at this scope and scale: watershed-lattice/ecological scale and international forms/local community. The map drawing also visualises the metaphor that embraces both watershed experience and understanding.

It is clear that there is a strong cause-and-effect relationship in the field of play – an unsustainable culture/eco-system relationship. This relationship is heavily influenced by industrialisation and directly impacted by the simple phrase "the forest is dying." With this statement the Harrisons actually provided a dysfunctional metaphor of the human relationship with the natural environment. The *metaphorical flip* allowed them to open the possibility to consider the forest as a sustainable ecosystem that recedes into the background as a new eco-cultural model with the idea of a 'gross national ecosystem' to take a meaningful place in the foreground.

- The Harrisons' idea began with looking at land as a living form. They then devised an aesthetic/political strategy to support that life.
- The work was intended to breech the conflict between loggers and environmentalists to support the ecological systems in the interest of both parties in terms of intrinsic and utilitarian values.
- The Harrisons saw capital as a nutrient that could drive the restoration of old-growth forests, long-term sustainable forestry, as well as the health and wellbeing of forest and communities. The gross national ecosystem is a metaphorical flip of considerable impact on itself and at a natural level.

AESTHETICS THAT EMBRACE AN INTEGRATION OF SOMATIC PERCEPTION AND INTELLECTUAL KNOWLEDGE THROUGH IMAGINATION

> The integrated approach frames the dynamic environment to set our mental power into harmonious free play – perceptual quality and the natural science model (a knowledge based approach) remain discrete in the integrated approach. The power of imagination is to draw ultimate understanding of natural environment through perceptual quality and science model based aesthetic experience.

The field of play in *the Serpentine Lattice* is a radical shift in perspective. This shift is supported by visual orientation. The installation consisted of slide projections and a map drawing that evoked our imagination about old-growth forests. The images expose the impact of clear-cutting, provide a sense of the topographical texture and the shape of the coast and its watershed hydrology is revealed on the map drawings. The field of play begins with a rational new boundary, which has ecological and aesthetic impact. The north/south serpentine connects the international/pacific temperate forest, watershed by watershed. The idea of the east/west "lattice" provides another perspective that is smaller and close-up. Watershed boundaries are delineated by natural phenomena that breaches land ownership, municipal boundaries and zoning code. Based on this position the Harrisons propose an *eco-poetics*, a new vision and metaphorical understanding of sustainable ecological culture and landscape.

One reason to save the forest is to recover ecological values and biodiversity. A quantitative approach is recognised as the circulation of capital like Beuys' idea of "ART=CAPITAL[56] that relies on everyone's creativity. The Harrisons proposed a "gross national ecosystem." A crazy idea that makes the most exquisite rational sense with best outcome for all involved – people, places and living things. Another reason to save the forest is to establish and maintain a healthy human/nature relationship that is manifest in a forest-based culture and economy.

ART=PLANNING: *The Serpentine Lattice* can be considered as a form of knowledge; watershed-based planning discourse that resonates with key political interests and agendas such as the Clinton proposal. The artists contribute to culture by demonstrating how art can expand our normative values and the perceptions that inform ecological issues while the government achieves new policy and laws.

ART=EDUCATION: *The Serpentine Lattice* can be considered as watershed education that is necessary to understand the condition of the watershed's physical state. The watershed boundaries are invisible to our eyes, however we can imagine the movement of the water that trickles down the hill or seeps through the land. Imagination takes an important role between knowledge-based understanding and the phenomenological experience. Watershed education takes experience, metaphor and imagination to look at the place to create new knowledge and understanding.

EMPATHY AS A CRITICAL VALUE, A CONDITION OF AESTHETIC DISCOURSE IN DIALOGUE

> Kester argues empathy has an important role in dialogic aesthetics. It can be recognised in conversation through inter-subjective exchange. Empathic identification has a feedback loop in which we observe the other's responses to our statements and actions. An empathic response can be inaccurate. As a result, any attempt at empathic response must be pursued with full attention to perceptions of accuracy and inaccuracy. (This idea is similar to Lakoff' and Johnson's ideas about empathic projection.)

A quality and depth of dialogue is recognised in their research and the final text. The story consists of diverse voices that have gathered during the site visits and numerous meetings with experts, organisations and communities. The research process is translated and emotionally changed by the artists who rely on empathic projection to transform the dialogue through their own voice.

METAPHORICAL PROJECTION OF AN IMAGE OF OURSELVES AS ANOTHER

> Following Lakoff and Johnson'screative metaphor raises body-bound consciousness. It enables not only a new perception but also helps transformation. Empathic projection is a type of metaphor that helps us to imagine ourselves as if the other is looking and judging our

[56] Beuys said, "CAPITAL is at present the work sustaining ability. Money is not an economic value though. The two genuine economic values involve the connection between ability (creativity) and product. That explains the formula presenting the expanded concept of art: ART=CAPITAL" (Beuys, 1985). Walker Art Center, Political Activism; [online, cited 1 August 2011]. <http://www.walkerart.org/archive/F/9C4309B0B50D8AA36167.htm>

> behaviour. This rationalisation comes from the relationship between what is perceived and what is presented.

Two kinds of empathic projections are recognised in the process of their research. The first is their approach to ecological-systems. *The Serpentine Lattice* is a story being told. It has a sense of two people reading the story. When we read a letter from our family member or close friend, we almost hear the person's tone of voice or see his/her facial expression. Metaphor challenges us to consider the relationship between knowledge of ecosystem-loss and aesthetic experience of trees and forests and raises questions concerning the appropriate scale of experience. At what point do we actually 'see' this forest and its eco-social complications? Instead of understanding background and foreground relationships, one might think the artists treated the land as a mythological creature. By suggesting that the forest has been injured and is in need of restitution, are the Harrisons anthropomorphising nature? "If I were the forest…", is a strategic empathic projection. It is not only appropriate, but it is also an essential element of their strategy. Lakoff and Johnson suggest that "perhaps the most obvious ontological metaphors are those where the physical object is further specified as being a person. This allows us to comprehend a wide variety of experiences with nonhuman entities in terms of human motivations, characteristics, and activities" (Lakoff and Johnson,1989, p.83). Characterization of the forest as a living 'thing' in need of restitution is an important metaphorical statement that supports the Harrisons' empathic vision.

> If you are really working with metaphor, you have great empathy for the other – whatever it may be. You have an empathetic relationship to it.
>
> Helen Mayer Harrison (Appendix A4, p.20).

> Like love. When you love you are the other, but not completely the other. This is a metaphorical relationship. A metaphor is one thing understood in terms of another. The real stuff of metaphor is out of the ground and human, and then it is abstracted and invented in various different ways and finds itself.
>
> Newton Harrison (Appendix A4, p.20).

Summary of the two case studies

Both Beuys and the Harrisons' artworks are about conceptual ideas that can be recognised as dichotomies: perception and cognition, symbol and sign, sympathy and empathy, background and foreground. In both case studies sympathy is the artists' ethical response to the problems. Beuys made a symbolic act: planting trees to reconstruct mythology in the culture, while the Harrisons developed metaphorical concepts: using watershed boundaries to re-plan the cultural landscape. In both cases the artists manipulated the foreground and background relationship. Empathic projection is also recognised in both cases. However empathic exchange between people and non-human species are not recognised in the both artists' works.

Beuys and the Harrisons treat dialogue differently. Beuys presented form and concept to create change in the society and its immediate environment. In Beuys' case the creation of a mythology was done by many people over time, and was not limited to direct participation with the project. The new mythological construction (from which the dialogue emerged) was shared as experience and narrative among people who experienced it first hand, read about it, saw images of it; in general people that understood *7000 Oaks*. In the Harrisons' case they relied on dialogue with experts, organisations and communities in their research. The artists rely on empathic projection to interpret the importance of diverse voices as their own.

Woodland culture is not only recognised in Germany, but is an idea that resonates in the Sherwood Forest in England, the Caledonian Forest in Scotland and the North American temperate rainforest between Canada and Northern California. Each forest consists of different species of trees, soil and atmospheric conditions. These forests have gone through different kinds of change in different time periods. The cause of fragmentation, reduction and quality of the forests are socially, politically and culturally entwined. *7000 Oaks* is an idea that can be done in different places if the foreground and background relationship is understood. If the current stasis of pine forest represents the foreground how will it reflect in Scottish culture as background? If pine is represented with sandstone instead of basalt columns, will it initiate the imagination about aquatic settlement and reposition rather than volcanic eruption? If oak represents the foreground in English culture, how will it be perceived differently from German forest and culture? What kind of symbolic images or icons can we recognise in different cultures?

In the Harrisons' case I found a new vision and metaphorical understanding of sustainable ecological culture and landscape. If the Harrisons were in Aberdeen, they would probably begin by finding the

background and foreground pattern in the cultural landscape. They would investigate the condition of the ecology and the culture through dialogue with experts, organisations and communities as well as by gathering the contextual materials and maps. They might use watershed boundaries again to define their field of play. They would express a new vision of the diverse and dynamic cultural landscape as metaphor.

In the next chapter I talk about my own artwork and practice that deals with trees' response to atmospheric changes. I analyse my process with the framework I have developed in chapter two and three. Is it possible to create an artwork that shares an experience of a tree empathically through careful observation? How is it related to the woodland culture? How do I inform empathic projection with trees?

CHAPTER 4: ENQUIRY THROUGH PRACTICE

> We not only see such vigour and sluggishness in people and animals, but also in plants. Empathic fulfilment is also possible here.
>
> Stein, 2002, p.69.

In the previous chapter I have examined how empathy is recognised in artwork. Empathy is found in the symbolic relationship between trees and the cultural landscape in Beuys' *7000 Oaks*. I have also recognised generative metaphor in the Harrisons' project as a sense of empathic projection on the forest through their dialogical approaches. In this chapter I talked about my own artwork and practice that focus on a trees' response to atmospheric changes. I wanted to create mechanical systems that helped people to experience an empathic relationship with trees. Trees do not have feelings and emotions like we do. They have senses that respond to light temperature, humidity and air. We rely on our inner and outer perceptions, knowledge and imagination to read a tree's physical state through careful observation and experience. The idea for the project originated after a visit to a climate-change research facility at the Duke University, in North Carolina in 2000. The actual work began in 2008 and has gone through two phases of development. The first is about *Plein Air*'s systems; the second is about the relationship between *Plein Air* and its context. The actual work began in 2008, and has gone through two phases of development. Phase one consisted of three steps: 1) scientific and sound system development, 2) activities and development during an artist in residence programme at the Headlands Art Center in Marin County California between March and September 2008 where the "*Plein Air*" metaphor was generated, and 3) development of a real-time system at the Crop Technology Unit, University of Wolverhampton between October 2008 and April 2009.

In this chapter I address three questions:

1) Does art contribute to an ethical relationship to trees and their environment? I considered this issue in the section called "Dialogue at Headlands" and "The Headlands data analysis" and a collaborative writing called "A tree is a living thing" for the exhibition (p. 26).

2) How could I communicate the inter-subjective approach without falling into a dichotomy of science and art? I addressed this in the section called "Scientific tools".

3) Could I develop an integrated critical framework to explain spirituality, empathic exchange and aesthetic experience with trees and their environments? This is discussed in the sections of "Spiritual engagement with a tree".

In phase one the research objectives were:

- Develop an appropriate plant physiology system.
- Use plant physiological equipment to observe and understand various tree species as they react to changing atmospheric conditions.
- Decide on and develop the methods and tools of a creative interface and sound production.
- Test nascent output and concepts with friends and colleagues.

Results:

- By experiencing trees in their environment, ideas of empathy emerged leading to the need to theorise and the discovery of Edith Stein.
- Decision to develop a real-time system led to an offer to work in the Crop Technology Unit, University of Wolverhampton.

Phase two focused on *Plein Air: The Ethical Aesthetic Impulse*, a multi-media exhibition presented at Peacock Visual Arts in Aberdeen Scotland during summer 2010. The context of the exhibition focused on the change of woodland coverage in historical time in Scotland (Appendix A5). I relied on two resources: one is *People and Woods in Scotland: A History* (2003) edited by T. Christopher Smout that explains the history of woodlands in Scotland; the other is *A Natural History of Aberdeen* by Peter Marren. Another way to understand the local situation depended on dialogues with an arboriculture specialist, a naturalist, a tree manager, an architect and a geographer (Appendix A.4.2).

Overall the exhibition accomplished three things: 1) *Plein Air* was used to experiment with trees in public places in Aberdeen. The work was presented as image and sound documentation; 2) the exhibition included *Plein Air* in situ with a tree within a glass greenhouse. The systems – plant physiology and the real-time sound translation – ran constantly; and 3) the public was presented with opportunities to open up the discussion about the idea of an empathic relationship with trees in Aberdeen.

The analysis of each phase relied on seven conceptual ideas that I have developed in chapter two: 1) empathy is an act of perceiving; 2) empathy-based symbols versus sympathy-based signs; 3) "phenomena of life", a sense of lived connectedness between body, mind and environment; 4) generative metaphor and its affect on perception; 5) empathic projection – how we are seen by the other, 6) integration of somatic perception and intellectual knowledge through imagination; and 7) empathy as a critical value, a condition of aesthetic discourse. These key concepts are useful to the development of the artwork and appropriate aesthetic for understanding and explaining an ecological and environmental artwork. In this chapter I examined how these ideas and concepts played key roles in the *Plein Air* project and identified dominant characteristics in my own practice.

Duke Forest

In 2000, my partner Timothy Collins and I went to see a Duke University forest research facility in North Carolina. The scientists were wiring the forest to test the reaction of the trees to future levels of carbon dioxide. A scientist invited us to climb a forty-foot high structure that was built around and among pine trees. He showed us the portable equipment that would measure the amount of photosynthesis from the tree leaves. He grabbed a branch of the pine tree and placed the needle leaves between two pieces of Plexiglas called a leaf chamber that was connected to a measuring device. When the sun emerged from a cloud, the photosynthesis rate went up. The scientist asked me to put my hand on the leaves to block the sunlight. The meter went down immediately. We were astonished to see the response of the tree.

The trees' responses seemed to be an epiphany. Indeed it was a core experience that informed my research question "is it possible to create change if we interpret and understand life is interdependent and interrelated with nature and our environment?" The life of trees is related to us because they respond to our behaviour and actions. I admit this simple condition does not appeal to everyone. I assume there are three kinds of ignorance towards a tree as the other: the first is one is who does not notice, the second is one who does not understand the response, and the third is to ignore or not to value it even when noticed and understood. The first two groups may change their behaviour and attitude if they notice and understand. The role of artists can be to make the other voice visible: to provide an opportunity to notice and understand about the other: and to remind people who do not value them or forget about how the other is connected to human public realm values. My effort is to make this argument as creative and rational as possible, and not fall into anthropomorphising nature.

CHAPTER 4.1 Phase 1.1: Investigation leading to the Headlands Artist in Residence Program

The team members

After our experience in the Duke Forest, I became more interested in trees' response to atmospheric changes including our interaction with them. We wanted to take an inter-disciplinary approach to develop a project like our former projects Nine Mile Run and 3 Rivers 2nd Nature. We needed experts who would guide us through unfamiliar topics and ideas such as plant physiology, sound, and the development of a computer program. We started gathering team members who were interested in this

enquiry. We secured a small research grant to develop the mechanical systems and sound components from the University of Wolverhampton. Collins began with assembling an appropriate system and setting up meetings with the experts while I selected the trees and the environment to work with the trees. Collins and I learned to use the system together. I organised the data collections and reflected on the experience of doing the work.

Sound was chosen because we wanted to move away from numbers and graphs that insinuate science. We chose sound to appeal to sensitivity and imagination. The initial team consisted of six members including Collins and I. Carola Boehm, a computer scientist and musicologist at Manchester Metropolitan University worked with me to develop the first program that translated the plant physiological data to sound. After the Headlands Artist in Residence Program it became clear the sound system had to be real-time. Matthew Dalgleish, an artist and PhD candidate at the University of Wolverhampton, started by working with Boehm, then continued working with us to design and fabricate the real-time sound system. We consulted Prof Trevor Hocking, a plant physiologist, University of Wolverhampton on the project. From the initial stage of the project he supported the idea of creating a new understanding and a new relationship with trees. His role was to assure accuracy and proper interpretation of the data. We documented and distributed the project process. Noel Hefele, an artist, Dartington College took the role for website design.

The plant physiology systems

The physiological reactions of the plant helped us to understand more subtle observations about trees. The equipment[57] allowed us to observe photosynthesis and transpiration of leaf stomata[i]. We needed two systems[ii] to compare the photosynthesis rate and transpiration rate. One system measured data from the atmosphere in real time while the other system measured data from the leaf / tree. Leaves were enclosed in a Plexiglas case, called a leaf chamber. A leaf consumes CO_2 and releases moisture through a process of transpiration. A computer program[58] calculated[iii] photosynthesis and transpiration from two sets of data[iv]. One set was the atmospheric data that consisted of CO_2, humidity, and temperature. In the leaf chamber there were sensors that measured the amount of CO_2 that was subtracted (or released) by a leaf, humidity from the leaf and leaf temperature. The light intensity was also measured. Dr. Boehm designed a sound system using the "Perfect Data" program and taught me how to use it for data translation. With this playback system in place I could work in "experimental

[57] Collins ordered a Qubit system that was designed and produced at Queen's University Biological Instrumentation & Technology, in Canada, and assembled it at our studio in Wolverhampton, West Midlands where Goto and Collins lived between 2005-2009.

[58] It was called 'Logger Pro 3.6.0'

studio mode". We prepared to go to the Headlands Artist in Residence Program. Dalgleish continued working on the real-time system in the U.K.

The Headlands Artists in Residence Program

Between July and August in 2008 Collins and I were invited to a residency program at the Headlands Art Center[59], Marin County California. It was located in the Golden Gate National Recreation Area.

The art centre was surrounded by small grassy hills and valleys. During the summer in San Francisco the land warms up during the day and sucks the cold moist air from the Pacific Ocean into the arid land. The condensation of coastal fog resulted in small streams in the ravines and trickled down to a densely vegetated wetland, to the lagoon and then back to the ocean. Early mornings were almost always foggy in the Headlands. We had to wait until the sun appeared to work with our trees. For the experiment we worked with native tree species that represented the natural system in the area. We chose a mix of riparian and upland woody species: Californian Allspice (*Calycanthus occidentalis*), Thinleaf Alder (*Alnus incana tenuifolia)*, Arroyo Willow (*Salix lasiolepis)*, Quaking aspen (*Populus tremuloides)*, Red-osier dogwood (*Cornus sericea)*, Western burning bush (*Euonymus occidentalis)*, Coast live oak (*Quercus agrifolia*) and Bigleaf maple (*Acer macrophyllum)*. Each tree was kept in a pot and placed outside the building.

The experiment began by setting up a tree in our large south-facing studio. First, we chose a tree and brought it to the studio. Secondly, we turned everything on and got the system set up; got the hardware plugged into the computer and then opened the program. Before beginning the data collection we checked the calibration and other sensors. Thirdly, we had to put the tree outside the south-facing window and chose a leaf that we could run a test on easily. After I turned on the system, the data collection began. Finally I put the leaf in the chamber so that I could monitor its reaction.

The duration of each test was determined by sun exposure. The longest data collection was seven hours and the shortest was half an hour. We tested alder, aspen and oak frequently. Willow, dogwood and allspice were tested twice. The leaves of the latter group suffered from a sudden period of very hot weather. The willow lost its leaves completely. Two weeks later new leaves came back. We tested the maple three times. The tree was too small and had few leaves. The burning bush was tested only once. As the wetland indicator species released a lot of water into the leaf chamber, we stopped testing it for fear it would damage the sensors. We worked with the trees for 30 of the 45 days spent

[59] Headlands was incorporated with the Golden Gate National Recreation Area in 1982 by a founding Board of Directors comprised primarily of local artists. In 1994 a long-term Cooperative Agreement for the use of the two former military buildings within the park was granted for a new non-profit arts organisation, the Marin Headlands Art Center. For over a year David Ireland, Bay Area conceptual artist, worked with twenty-five local volunteer artists (including Collins and myself) stripping layers of old paint and sanding the floor until the interior of the building was bare and stark.

on the residency. We secured 26 good data sets. Every experiment was different and the sound translation was also different, however patterns could be recognised. In the next two sections I talk about the sound translation that focused on the basic situations such as morning, noon and afternoon. I also talk about the video documentation that focused on a tree's basic responses to human input such as a car passing by and breathing into the leaf chamber.

The sound experiment

The other aspect of my studio effort was working with sound translation from data. That work focused on pitch, duration and timbre. Dr. Boehm's[60], Perfect Data[v], could translate the data to various sounds such as piano, string, flute, harmonica, human voices and ambient sounds. The loudness and timbre could also be manipulated. The duration of each note was fixed in the source software. The pulse of the air pump was 12 times per second which made the sound monotonous. The small numbers to high numbers were translated as low pitch to high pitch. Two measurements were mainly translated: 1) photosynthesis revealed a tree's response to light and CO2; and 2) transpiration revealed in a tree's response to temperature and humidity. Working with Dr. Boehm's software I looked for a sound quality that would allow me to trace the change of the data. If the numbers were high, the sound would be high. If the numbers were low, the sound would be low. The sounds of a piano, a string instrument or a flute were ok. I also looked for a sound that would moderate the notes. The piano and the strings sounded percussive but the flute seemed to fill some of the intervals between the notes by stretching the sound. Classic musical instruments had limitations when translating extremely high numbers or low numbers. In these cases I used sound files of bird songs, insect sounds and other natural ambient sounds.

For example, we worked with a coast live oak (*Quercus agrifolia*) collecting data in the morning, noon and afternoon.

> September 6, 2008, morning
>
> The temperature was around 17 °C. First I saved the plants' Physiological data as a text file (Figure 19). Then I opened up the Perfect Data program (Figure 20). I connected the program to the text file. I connect the photosynthesis data to a unit named 'pd looping sampler'. I opened the unit to determine the sound qualities: pitch and timbre. The photosynthesis data was between -3.34 and 10.80. I determined the scale value to be 30 with flute as a sound source (Sound sample: file oak/photosynthesis, Appendix B). Next I set the transpiration data in the same way. In this case transpiration data was between -453 and -3.67[61]. The tree seemed to be acting very slowly. I determined the scale value 8 with flute. (Sound sample oak/transpiration, Appendix B). During the recording a car passed by the tree and the photosynthesis rate went up very high. This first highest pitch was determined at the end of

[60] Dr. Boehm teaches at Manchester Metropolitan University, 2008 – present.
[61] These negative values indicate a problem with the monitoring.

the sound recording. The loudness could be manipulated when I played back the two sources together (Sound sample oak/morning, Appendix B).

September 6, 2008, noon

The second sound translation was the same oak leaf experiment but the data was collected at noon. The temperature was between 19°C and 23°C, and the highest numbers of the photosynthesis was between -0.85 and 7.44, while the transpiration was between 2321 and 4107. The high transpiration data was no longer audible with the flute. I decided to use the sound of a lark for photosynthesis and cricket for transpiration (Sound sample oak/noon, Appendix B).

August 2, 2008, afternoon

The third sound translation was based on the same oak but collected at an earlier date and in the late afternoon. The highest photosynthesis rate was between -2.4 and -1.2[62]. The transpiration was between -114 and 3018. I used human voice for the transpiration data. I omitted the sound of the photosynthesis this time. It was too monotonous. Tree metabolism could be slowing down in the afternoon even though the sun was still up. This sound might have illustrated weariness of the tree (Sound sample oak/afternoon, Appendix B).

Two video clips

Collins and I decided to document a couple of situations that might demonstrate the relationship between a tree's response and its environment through data and sound recorded as video clips (video, Appendix B). In the first experiment we used a potted oak tree that was placed outside of the window next to the road. On the computer screen red and blue spikes showed up every time a car went by. The red line represented CO_2 in the atmosphere and the blue line represented CO_2 in the leaf. The data were also translated to the sound of a flute that illustrated musically how much the CO_2 in the leaf went up or down.

Collins narrated the video:

> So here you are seeing a small spike from that newer, smaller car. The larger spikes are from an older car that just came through. I'll pull that up again if the car starts moving again. Because there is not much sunlight today, the photosynthesis is actually being driven more by the CO_2 than it is by the light. We have got a very low photosynthetic reaction that is mostly below zero with some spikes where the tree has some quick responses. There is a car coming. We'll see what kind of reaction we get. It is actually a newer car. I'm getting a small spike there. Another car. That spike has gone up – you can see it here. At this point our average is more or less around 360 parts per million which is about here, and our spikes are going up to 366 here. But here we are all the way up to 392, 394. Now, the CO_2 spikes are also affected by which way the wind is blowing outside and how calm or windy it is, because the windier it is, the quicker the air is moving through the area. We are monitoring air in two areas. One through this tube which runs up the tree and gives us atmospheric air quality in relationship to the tree. (Figure 8 top)

[62] These values indicate little activity.

The second experiment showed the tree's response when I breathed into the tube. First, both the red line (CO_2 in the atmosphere) and blue line (CO_2 processed by a tree leaf) went high immediately. The leaf seemed unable to process so much CO_2 at once. The pitch also went very high quickly and reached the maximum. A few seconds later both lines went very low. The sound followed. This showed the leaf was taking up the CO_2. Then, slowly the lines and sound started going back to the normal positions (Figure 8 bottom).

(Figure 8): Video scenes

Druid Circle Oak

During the residency programme I wanted to see how trees grow in the area. Mia Monroe, the director of Muir Woods National Park suggested I see the *Druid Circle Oak* in the Golden Gate National Recreation Area. It was off trail and not officially marked on any map. Mia's directions 'The hilltop above Tennessee Valley' sounded like a password. We had no idea what this *Druid Circle Oak* would look like in the Californian landscape.

One sunny afternoon Collins and I walked up a steep trail to find the circle. Since I have lived in San Francisco for many years I could recognise many familiar native plants such as coyote brush, small coastal live oak, Manzanita, sage, buckwheat, painted brush, sticky monkey flowers and poison oak. We came to a small spring in an arid area. I recognised there were many ancient exposed granite

stones. I had heard about special coastal native plant communities that only could grow in the soil of exposed granite stones, but there were hardly any significant trees. A spiny lizard on the rock caught our attention and I began to look around. At that point we decided to go off the trail and found some very low and thick vegetation on the ridge. The height of the canopy was less than four feet. It was a massive patch of old coastal live oak! The branches were thick, entwined with each other and covered by lichens. We could not see the whole vegetation as a circle. Later on when I described the place to Mia, she said we were at the right place.

This old patch of oak trees had a different aesthetic quality from the redwood forests that we had walked through a few days earlier in the Muir Woods. The redwood trees were magnificently tall and outstanding living monuments. By contrast, the ancient coastal live oak was small and not prominent. I was amazed to see the two different adaptations: one chose to be big and the other chose to be small to survive in the same region.

In this case we supported each other as we decided to take off from the trail toward the deep valley. I felt finding this unknown place was a true collaboration. Collins was analytical about Mia's direction and map while I was looking for the sense of *Druid Circle Oak*. After along argument about the directions, we began to listen to each other and reach beyond ourselves. The old exposed granite rocks, a sphinx-like spiny lizard and dense bonsai-like oak patches seemed to be indications to us. These elements also reminded us of our previous experiences and knowledge about the area. All the elements came together to open up our revelatory imagination (See Brady p.30 in chapter two) that guided us to find the right place.

Dialogue at Headlands

During the residency programme Collins and I invited: Helen Mayer Harrison and Newton Harrison; ecological artist, Erica Fielder; ecological artist and watershed educator, Susan Leibovitz Steinman, an artist who creates gardens with communities; Megan Steinman, Director and Cultural Editor; and Tricia Watts, a curator who was working at the time at the Sonoma Museum. One of the key questions was 'does art contribute to an ethical relationship with the natural environment?' In response to this I was thinking about how to treat a tree as a living being rather than a thing. An excerpt from the transcript is below.

Speaker 1: Now, obviously, trees have no brain. Their interest is maybe their life force.

Speaker 2: Their life force?

Speaker 1: Yes – their life force.

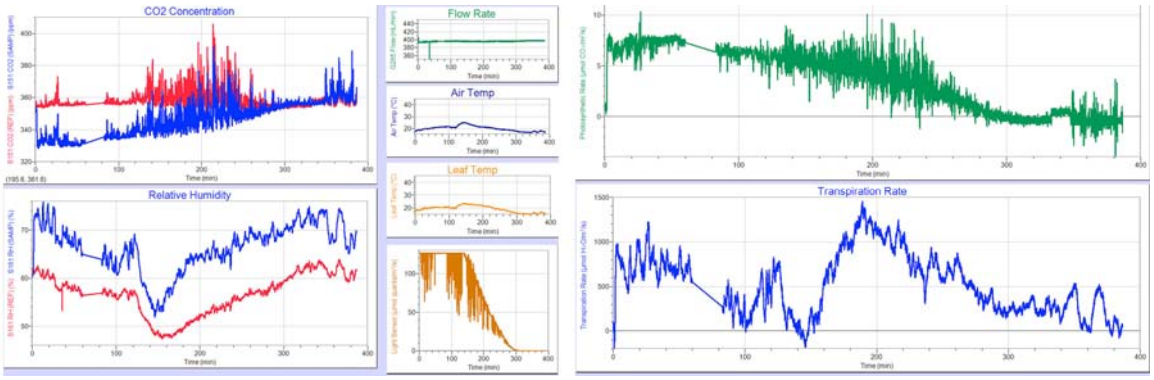
> Speaker 2: No, I'm saying I'd rather call them trees. It sounds as though we're talking about a person. You're using this language as if they're a person it is more offensive to me than saying what they are. Because, I think about a lot of what we do is, yes, anthropomorphising nature ... It just sounds grandiose.
>
> Goto and Collins, 2008b, p.26.

A key turning point in my thinking about this work was the idea of trees as living things rather than as things. I am keen to avoid falling into the trap of saying that, if tree research is not scientific, then it must be anthropomorphic projection. In chapter three the Harrisons' *Serpentine Lattice* demonstrate watershed as metaphor and how we perceive a land formation as a living system (*Serpentine Lattice* in chapter 3). I have talked about the role of imagination (Brady in chapter 2, pp.44-5) that draws us to ultimate understanding of the tree. At the same time inter-subjective exchange in dialogue could create empathic understanding (Kester in chapter 2). How could the idea of "Trees as living things" be explained objectively but also at the same time resonate empathically? I needed to frame the environment and observe trees as unknown rather than as familiar beings. The answer seemed to be case by case because each tree and its environment are different. In our case the mechanical device extended our observations and sets criteria to understand trees as living things. I found a good example during our conversation with Prof Hocking about the Headlands data analysis.

The Headlands data analysis

Collins and I collected 26 data samples during the residency. After the residency programme Prof Hocking reviewed all the data for indications of appropriate sensor set-up and significant plant responses. We displayed all the graphs together on the wall. Prof Hocking interpreted the data one by one and asked about the condition of each experiment. Talking to the scientist and looking at line graphs reminded us of Headlands' foggy mornings, the willow that lost all its leaves, and the burning bush that flooded the leaf chamber. Prof Hocking was looking for:

> - The stability of each sensor. The atmosphere CO_2 and leaf CO_2 should be same in each sensor without a leaf in the leaf chamber. If they are different they need to be calibrated.
> - Active photosynthetic responses.
> - Active transpiration responses that Hocking described as 'a nice transpiration curve.'
> - Active leaf CO_2 responses, indications of 'depletion' that mean the leaf is absorbing CO_2.
> - Active leaf humidity indications of an increase in humidity as the leaf is releasing moisture (and oxygen) into the air.
>
> Hocking in Goto and Collins, 2008e.



(Figure 9): The graphs of Quaking aspen *Populus tremuloides*, 21 August 2008, 14:00-16:10

Prof Hocking chose ten data samples as an ideal test/data condition. He was particularly excited to see the aspen's responses in the documentation. He pointed to the graph (Figure 9):

> This looks nice. Nice depletion here, giving you nice photosynthetic rate here. Relative humidity is sensible; the leaf chamber is much higher than the reference. So you have a nice transpiration curve there. You've got fluctuation, but actually this is very small scale. It is only a four-degree fluctuation there. A shame your light sensor is missing there. But that is good. That development of photosynthesis and its stabilisation is absolutely classic. That is really good. And you've got positive transpiration throughout that period. So that is nice data.
>
> Hocking in Goto and Collins, 2008e.

The scientist said, "Aspen is phenomenal at depletion!" He also said, "But experimentally, any plant that gives me that kind of depletion, is a plant I like working with. The thing about a plant that gives you big depletion you can do more with it" (Hocking in Goto and Collins, 2008e). Finding the right species became most important, because not all kinds of trees respond well to the experiment. If I found one I have more signals to work with to inform my experience and imagination about this empathic relationship. I am convinced that my working aesthetic could and should incorporate the science of trees. My goal was a human non-human exchange with this silent being and its invisible physiological response.

The residency outcome

In the Headlands' residency programme I accomplished using the plant physiological equipment to observe various tree species reacting to changing atmospheric conditions including human interaction. Twenty-six sets of data were collected and later analysed by the plant physiologist. Methods and tools of creative interface and sound production were explored. As a result, sound samples and video

documentations were produced (Appendix B). Sound quality was never intended to simply illustrate the data, however at this stage the translation from the data to sound seemed to be a semiotic code relationship. The experience of the Duke Forest in North Carolina was an initial empathic experience that consisted of three elements simultaneously: a person, a tree and the environment. In order to shift the sound translation more towards symbolic relationship, we agreed to develop a real-time system. We started developing the metaphorical idea of a *Plein Ai*r painting easel that would represent empathic relationship with trees. At the end of the residency we made a "mock-up" to develop back in the U.K (Figure 10).

(Figure 10): Mock *Plein Air* at the Headlands

CHAPTER 4.1 Phase 1.2: Developing the real time system

Between autumn 2008 and spring 2010[63] the project mainly focused on real-time development and unifying the systems as *Plein Air*, a sculptural object. In this section I talk about five issues: 1) tree experiment in controlled environment, 2) real-time system development, and 3) sound enquiry through a conversation with a music teacher, 4) questions about technological devices and scientific methods in art, and 5) awareness of connectedness between body, mind and the environment.

The project development at the Crop Technology Unit

After we came back from California, we started working at the Crop Technology Unit, Professor Hocking's laboratory at the University of Wolverhampton. The lab was surrounded by a glasshouse, grassland and woodland plots for testing plants and habitat creation. For the following year Prof Hocking wanted to help organise the lab and raise outdoor trees in the greenhouse. Meanwhile he let us use the facility to develop the real-time system. We also wanted to experience the trees in the controlled environment. It made it easier for us to talk to each other and ask questions about trees and the project development. Professor Hocking always reminded us about the need for scientific accuracy. Robert Hooton, a dedicated bio-technician helped as well showing us the best way to achieve our goals.

Professor Hocking told us indoor trees would be much less active than outdoor ones. During the autumn and winter I observed indoor plants such as an orange tree, olive, Ficus and a couple of outdoor species including holly and English ivy. We kept all the plants in the greenhouse. The inside of the lab was fully equipped for plant biology experiments with climate-controlled light rooms and a biology laboratory. The tree and the systems were set in a small light box that could control CO2, temperature, humidity and light intensity. The plant physiology data became much more stable and monotonous in comparison to the outdoor experiments. There were fewer sources of CO2 and therefore little or no CO2 spikes. The large room with its high ceiling and only a few people in that space resulted in little change to the localised atmospheric condition.

As Hocking warned us the indoor plants did not show a strong reaction to changes of light and temperature. There was hardly any interaction from the real environment. As a result of this

[63] During this period a couple of personal matters affected the project. My father passed away one year after his wife's decease. I had to stay in Japan for six months to take care of this family matter. Secondly my partner moved to another job place. It was difficult to continue with the experiment at University of Wolverhampton.

experience I fully appreciated the way an un-controlled environment is dynamic and changed by people, automobile, wind, the sun and clouds. Outdoor plants were much more active than indoor plants. Deciduous leaves were also much more active than evergreen leaves. The best trees to study were deciduous trees, and the best place to observe them was an outdoor situation. The observations had to be done between May and October. One solution to this constraint was to plan to raise the outdoor trees in the greenhouse as this was halfway between the outdoors and the growing chamber. The need for accurate data and its sound translation cannot be underestimated. Besides keeping the calibration right we needed to pay attention to the "noise". The atmospheric CO2 sensor and the leaf CO2 sensor had to be calibrated before the experiment was begun. If they were not indicating the same numbers, the photosynthesis rate would be wrong and the sound translation would become arbitrary.

Real-time system development

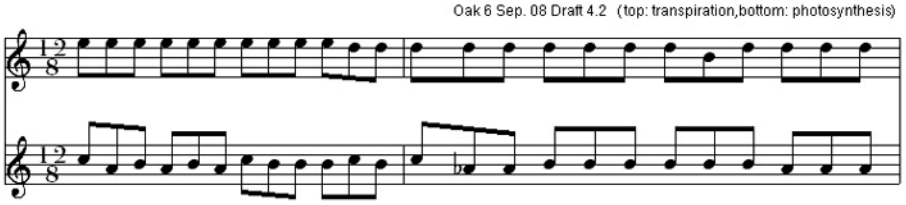
Collins and I worked with Matthew Dalgleish, artist and PhD candidate at University of Wolverhampton, once a week focusing on the design of the real-time hardware/software system. While in California we discovered the limits of the Perfect Data programme. We purchased multiple copies of Max/MSP, a commercial sound-programming software. Unfortunately this revealed the limitation of the Qubit system in that we could not get the information from the sensors into that programme. This necessitated a number of experiments where we tried to intercept and interpret the sensor data before it came into the computer using a small 'Arduino' processor to send the sensor data directly to Max/MSP. Numerous time-consuming experiments were undertaken with all of us helping with soldering, wiring and testing. Ultimately we went through three major variations until we were able to get something to work in mid January 2009. During this time, the plant-testing came to a halt. We did get the system working but while the baseline approach to the new hardware/software system was right, it remained unstable and needed further development. In 2010 Collins and I decided to hire technical consultants to trouble-shoot the project system resulting in the development of a functioning system and the *Plein Air* sculpture in late spring of that year.

Sound enquiry

Until the final system was completed I had to interpret the dataset through computer software. Using the Perfect Data program the sound of the flute, crickets and human voice were often used for the experiments. Later on, working with the Max/MSP program, I used the sound of a piano because it

was the easiest to follow in terms of data changes through pitch. The translation was accurate. The pitch change – low to high or high to low – was not always progressive. As a result the sound of the real-time translation sounded arbitrary. The most distinctive sound changes had been noticed in the light quality changes and human interaction such as when a car went by or when people got to close to the tree (for example, two video documentations: Appendix B). For the audience, framing the time, place and situation seemed to be important in order to experience the connectedness between the audience, the tree and its environment.

The Headlands' piece developed on "September 6, 2008, morning" was my favourite. The particular sound documentation somehow evoked my memory of *Druid Circle Oak*. I selected a part of the recording and made a notation (Figure 11).



(Figure 11): Notation of oak transpiration and photosynthesis, September 6, 2008

I took recorder lessons from Kimihiro Serizawa, a music instructor at Yamaha Music School in Nagoya Japan when I was there for six months. The recorder, a simple wooden instrument resonates with the player and the space. I asked him for advice about *Plein Air* sound translation. Mr. Serizawa told me about Japanese monks who played Shakuhachi, a five-holed vertical bamboo flute. They would sometimes visit Zen temples for their Buddhist practice. A Zen master would bring a natural object such as a pinecone or a tree branch to the Shakuhachi player. A Zen question could be how to play the sound of the object by Shakuhachi. I assumed these Buddhist Shakuhachi practitioners would think about the inter-dependency between people and the environment. I imagined each player had to come up with some rationalisation through playing the instrument. In a way this Zen question was very much like our *Plein Air* is about trees and their inter-relationship with the atmosphere.
Mr Serizawa said it might be helpful if I played the translation of the data with an instrument instead of going through the synthesizer. I thought this would be a valid and reliable step to take. At this time I was thinking about two kinds of translation: one, translating word-by-word, two, translating the meaning and intention of the content. A good translation should have both elements. The sound played back by the synthesiser was accurate but too mechanical. If I interpreted the data with a musical instrument, what would happen?

However it was not simple. The notes from the tree data were most likely augmented and hard to play with a recorder in a real-time translation. I realised the artist's interpretation of the data and

environmental change would be the key issue and expressing that would be another important action to make for the tree's response. It took a while to develop this idea. After the phase two period *Plein Air* began to take a performance[64] form. *Plein Air* was set with a small aspen tree. The performance began when the artificial light was turned on. The sound translation was played by an accordion in relation to the tree's response to artificial light. The music was my own real-time translation of the aspen's transpiration data. The performance was ended by turning off the light.

Scientific tools

In Western art history artists have been experimenting with different ways to understand nature. Artists have always worked with technology and scientific methods such as the golden section[65], anatomy[66], perspective[67] and spectrum theory[68]. Artists have been extending their perceptual abilities to understand nature with technological devices. Advanced technology has a correlation to this kind of art practice. The invention of photographs, film, video, computer, and digital-media can capture and reveal nature differently from how we see it normally. Yuji Dogane, a Japanese biologist and media artist has been working with Mamoru Fujieda, a sound composer and Masaki Fujihata, a robotics artist for the last twenty years. Their mutual interest is about how art can express the way plants perceive the world differently from humans. Collins and I had conversation with Dogane on 16th of April 2009 at the Kyoto Zokei University (Dogane in Collins and Goto, 2009). Dogane focused on plant respiration and photosynthesis in his earlier science research. He said it was difficult to explain it scientifically, but easier to demonstrate the relationship between plants and man through an art installation. His installation called *Eco, Ego or Discovery of Eco sapiens*[69] intended to function

[64] The performance was presented twice. One was at a group exhibition and performance called *Calendar Variations*, curated by Anne Douglas and Kathleen Coessens at the Lang Byre Gallery, Woodend Barn, Banchory, Scotland in 2011. The second one was another group exhibition and performance at during the workshop "Eco-tone: Object Space Entanglements", Nottingham Trent University (2011).

[65] The Greeks discovered the golden section. This geometry was used for architecture, design and painting for ages.

[66] In the Renaissance period religious paintings and themes consisted of idealistic human figures rather than spiritual figures. Leonardo da Vinci and Michelangelo studied anatomy to paint or sculpt idealistic human figures.

[67] Jan Van Eyck painted a convex mirror and its reflection to show a 360-degree view of the wedding as a witness in *The Arnolfini Wedding Portrait* (1434). Hans Holbein used an anamorphic technique to paint *The Ambassadors* (1533). In this case a skewed image of a human skull, placed at the bottom centre of the portrait painting, drew the attention of the viewer. Holbein relied on the interaction of the viewers with the painting to find this trick.

[68] In the 19th century Claude Monet and Georges Seurat and many other impressionist painters were influenced by the spectrum theory by Isaac Newton who believed he could find natural laws through mathematical investigations. Monet spent time outside the artist's studio to observe and document the light and the colour changes in series of paintings of haystacks, a cathedral and water lilies. Seurat was a pointillist who relied on a painting technique using dotted primary colours such as magenta, yellow and cyan on the canvas. The actual image was created as a result of all the dots of colours mixing and creating different shades in the viewer's brain through optical perception. The colours also have a symbolic relationship with the viewers. The numerous colours that delineated the painting subject such as figures, landscape and the atmosphere evokes the viewer's abstract feelings.

[69] *Eco, Ego or Discover of Eco sapiens,* an installation was exhibited at art space Kimura ASK in Tokyo (2008). A large transparent balloon was set in the gallery. It had an entrance to let people in. An air pump was constantly pumping the air in order to keep the balloon filled. Inside the balloon there was a large planter that holds Tillandsia and orchids. When the audience were inside, the artist held the air tube up to indicate that he was going to shut off the air flow. When people noticed his gesture, their facial expressions started changing; they became more serious. Some people who knew about plants started putting their heads close to the planter. Other people who did not know much about plants slowly realised what it meant.

physically and imaginatively. In the interview Dogane also talked about how his approach is related to Japanese spirituality (Dogane in Goto and Collins, 2009).

> Dogane: The Japanese culture has a tendency to seek soul in the armband of the dead person. It [Japanese culture] is related primitiveness, but many people don't know [how to relate]. I hope they will remember it. In Kyoto there are not only many names of Kami but also tradition, culture and nature that can remind us [our relationship to the spirit].
>
> Collins: How do you make this argument in your work?
>
> Dogane: Planting, taking care of, and living with the plant. More specifically placing the plant in the pot. By doing this activity people gain some kind of feeling with their hands instead of thinking. Act is before think…If we cultivate plants in the natural features of the region, taking care of, living, dying, spending time and exchanging, we will understand many things. Then, we propose to plants…[I prepared some water] would you like more water? [I can move the pot next to the window] would you like more light?...the question is whether the plant respond or not.
>
> Dogane in Collins and Goto, 2009

Taking care of plants seems to rely upon physical, inner and outer perceptions. I am fascinated by this basic relationship with living things as a spiritual engagement. The question still remains whether we need a technological intervention to experience an empathic relationship with trees. If *Plein Air* is a process and an opportunity to find an empathic relationship with trees, why we are observing wires and the computers in the box instead of a tree? Is our aesthetic engagement with nature actually an engagement with technological devices? These questions were addressed again in phase two in the section called "Public dialogues" (p.103). After visiting Dogane in Kyoto we wanted to visit a spiritual tree. At the time Collins was interested in Shinto, a Japanese religion that worships trees as a part of traditional ritual. We had an idea where to go. It was a large tree in the middle of vast rice field near my uncle's house in Mie prefecture. We had seen the tree many times a mile away from the train between Isewakamatsu and Suzuka.

A sense of lived connectedness

In the summer of 2009 Collins and I went to see a thousand-year old camphor tree (*Cinnamomum camphora*)[70] in the middle of a rice field in Mie prefecture (Figure 12). The area was marked with stone lanterns and the tree was celebrated with a shime-nawa (しめ縄), a braided rice straw rope. It was used for ritual purification in the Shinto religion (神道) worship of ancestors and belief in natural spirits. The stone lanterns and the straw rope symbolise the tree as shin-boku (神木), a sacred tree. In this case it was little odd because usually this kind of sacred tree could be seen in shrines and temples. Later on I found a kan-nushi (神主), a Shinto (神道) priest in the area to ask about the absence of the

[70] The tree (*Lauraceae cinnamomum*) was called 名護の大楠'Nago no Ōkusu' in Suzuka, Mie, Japan.

shrine. He said the original Mori (杜) Shinto shrine had been removed to a different area and only the tree remained.

We met two men who came every day to spend time with the tree in the middle of the rice field. One of them was ill. He came to pray for his health. He also told us he used to work at an oil refinery factory in the port of Yokkaichi. The other was an old farmer. He came to play a harmonica to the tree. Both men told us the tree was a focal point for many other local people to cross the vast rice field. The farmer said, "Look at the branch. It is very big. It gives us a lot of energy. This is nature, something we cannot create."

The religious customs in Shinto and Buddhist traditions are so embedded in Japanese culture that the everyday act of the men visiting the tree is not considered unusual at all. By repeating this experience every day I assume the men were projecting their emotions onto the tree. I romanticised their relationship with the tree but what really struck me was how those men kept visiting the tree. The prayer and posture was sincere. They did not have a plant physiological system like ours, however by spending time at that place and comparing their day-to-day experience of the tree, the weather differences, their health conditions and talking to other visitors, the men and the tree clearly interrelated through this intimate, sustained and repeated experience. I would give great respect for these men who had not only an empathic relationship with the tree but also maintained an intimate relationship with it overtime.

(Figure 12): Nago no Ōkusu 名護の大楠. A thousand year old camphor tree in Nago, Mie, Japan

Reflection on the project development

II. Empathy

EMPATHY IS AN ACT OF PERCEIVING IN WHICH WE REACH OUT TO THE OTHER TO GRASP HIS/HER STATE OR CONDITION

> It consists of one's emotional and physical experiences. Empathetic experience is detected towards something foreign rather than something familiar.

In order to replicate the empathic experience, noticing the tree's response in Duke Forest, Collins and I chose to develop an artwork that would extend our physical abilities to observe the breath of trees that involve carbon dioxide, an invisible and odorless substance.

RECOGNITION OF EMPATHIC SYMBOLS (THIS FEELS) VERSUS SYMPATHETIC SIGNS (THIS MEANS)

> Following Stein, signs reflect our intellectual knowledge and understanding, for example, "Smoke can be an indication of fire". The sign/semiotic code relationship is a cognitive mental activity while a symbolic relationship is based on empathy –inner perception.

The sound translation in the non real-time system had a sign relationship between the data of the tree's physiology and the sound. Basically, small numbers were translated as low pitch and the large numbers were translated as high pitch while the real-time sound-translation system was intended to create a symbolic relationship. The audience could recognise the sound changes as well as environmental changes such as light quality, ventilation, and human input. I experienced the different settings between an inside setting in a laboratory and a setting outside the lab. The lab was controlled and the data was stable while the atmospheric changes outside in the open were dynamic and the trees' responses were complex. I found the mechanical sound translation did not interpret the complexity of a tree in different situations.

STEIN'S PHENOMENOLOGICAL CONCEPT, "PHENOMENA OF LIFE", IS A SENSE OF LIVED CONNECTEDNESS THAT IS AN AWARENESS OF THE RELATIONSHIP BETWEEN BODY, MIND AND ENVIRONMENT

> Phenomena of life or a sense of lived connectedness is a phenomenological experience and awareness between body, mind and its environment.

This concept has been recognised in the experience of the two Japanese men who visited the giant tree in the middle of rice field. They did not have any technological equipment to measure the tree's response. They seemed to rely on their inner and outer perceptions to look at the magnificent size of the tree in different seasons and in different mental and physical conditions. Japanese Shinto religious tradition seeks a spiritual and aesthetic focal point while *Plein Air* seeks a scientific and aesthetic

focal point. The two men had an empathic relationship with a special tree but also maintain the relationship by visiting the tree daily. This suggests that the phenomenon of life or sense of lived connectedness is not only an awareness between body, mind and the environment, but also requires the maintenance of the relationship through practise.

III. Metaphor

AWARENESS OF METAPHORICAL FOREGROUND/BACKGROUND RELATIONSHIPS

> Schön's idea of generative metaphor/creative metaphor is used to both generate and rationalise a complex reality in new ways that in turn shapes how we respond to, or interact with, that setting. It does not directly solve the problem but suggests a new situation. It enables a new perception and supports transformation.

Generative metaphor is recognised in the story of the shakuhachi players (Sound enquiry, p. 91). Understanding of the relationship between the natural object and its environment is a foreground/background relationship. A shakuhachi player can express the rational understanding of that relationship.

Plein Air takes Mr. Serizawa's suggestion to "play the notes with a music instrument". The player (music instrument or synthesiser) takes an interlocutor's position between the data and the sound translation. The interlocutor also takes environmental changes such as light, temperature, ventilation, and human impact into account for his/her interpretation. In this case the player becomes a part of the *Plein Air* system.

METAPHORICAL PROJECTION OF AN IMAGE OF OURSELVES AS ANOTHER

> Lakoff and Johnson's idea about empathic projection is a type of metaphor that helps us to imagine ourselves as if the other is looking and judging our behaviour. This rationalization comes from the relationship between what is perceived and what is presented.

The empathic experience in the Duke Forest was described as "the trees' response" to my interaction. Trees do not have feelings and emotions like we do. They have senses that respond to light temperature, humidity and air. We rely on our inner and outer perceptions, knowledge and imagination to read their physical state through careful observation, experience and understanding. When the sun emerged from a cloud, the photosynthesis rate went up. When I put my hand on the leaves to block the sunlight, the meter went down immediately. In this case the experience of empathic projection is based on the tree's response to my action. I rationalised this by understanding that a tree is a living being rather than a thing.

In the conversation with Prof Hocking (The Headlands data analysis, p. 87) the scientist explained to me the trees' responses. I understood this as empathic projection. He reviewed and interpreted our

data from California. He was particularly excited to see the series of an aspen tree's responses in the documentation. The aspen data showed active leaf CO_2 response: indications of 'depletion' that meant the leaf was absorbing CO_2, and active leaf humidity indications of increased humidity as the leaf was releasing moisture (and oxygen) into the air. I have experienced and learned that not all trees respond well in the experiment. More importantly, if I find one lacking in responsiveness, I will develop an imaginative metaphor about it. This kind of empathic relationship occurs to such an extent that I am convinced a working aesthetic (for this artist) could and should incorporate the science of trees and arguably the care and management of them.

IV. Aesthetics

AESTHETICS EMBRACE AN INTEGRATION OF SOMATIC PERCEPTION AND INTELLECTUAL KNOWLEDGE THROUGH IMAGINATION

> The integrated approach frames the dynamic environment to set our mental power into harmonious free play. The natural science model (a knowledge-based approach) remains discrete in the integrated approach. The power of imagination draws these things together in aesthetic experience.

The *Druid Circle Oak* is not simply a memory shared by Collins and me. It is not merely imagination but imagination that is attached to our previous experience and knowledge of the place and natural elements such as a spring in an arid area, ancient exposed granite rocks and a sphinx-like spiny lizard – a set of disconnected signs and symbols in the landscape provided clues that allowed us to imagine where we were going.

At *Druid Circle Oak* this kind of imagination also drives our moral judgment towards the oak trees. We compared the old patch of oak with the redwood forest a few miles away from Headlands. Redwood trees are majestically tall and their lifespan can be imagined in the height and the size of their trunks. Redwood trees are more visible than *Druid Circle Oak*. The height of the oaks is low, and their lifespan can be imagined in the thickness, density and texture of the tree branches covered with lichens. We recognised that small trees can be as extraordinary although they are different from large ones.

EMPATHY AS A CRITICAL VALUE, A CONDITION OF AESTHETIC DISCOURSE IN DIALOGUE

> Kester's idea of dialogical aesthetics can be recognised in: 1) the quality of the inter-subjective exchange, 2) the quality of speech acts and process of dialogue and 3) indication of empathic relationship.

The quality of inter-subjective exchange has been recognised during the project development with the team members Hocking, Boehm, Dalgleish and Hefele. It was also recognised during the conversation

with Dogane and Serizawa. The quality of speech acts and process of dialogue is recognised in Hocking's data analysis, Serizawa's recommendation and in the conversation with the two Japanese men at the sacred tree in Nago. The indication of empathic relationship is actually recognised in the Duke Forest experience and the intention embedded in the story of Zen shakuhachi players.

In Kester's dialogical aesthetics empathic relationship is between people. It is based on active listening. Dialogue includes observing the other's facial expression, words and language, tone of voice and body gesture. In my case study empathic relationship can be experienced in the response of trees. Through the plant physiology system the response of trees is recognised. The mechanical and scientific systems proof the accuracy of the response. The dialogical approach is an important element of collaboration. If trees' response is included in the dialogical approach, collaboration with trees can be possible.

In phase two I talk about *Plain Air* as an element in an installation at Peacock Visual Arts in Aberdeen, Scotland. I talk about the content of the exhibition, its context, public dialogues and the analysis of *Plein Air* as sculpture.

4.2 Phase 2: *Plein Air*: The Ethical Aesthetic Impulse

Overview of the exhibition

There is a long history of artists painting outdoors 'en plein air' (in the open air) with a French box easel. In the mid 19th century there were two groups of painters: the Barbizon School committed to realism and direct inspiration from nature; and the Impressionists committed to a more open and experimental approach to painting yet also seeking inspiration from nature in the form of light, movement and changes over time. In the name, the function and even in the related historical and cultural output of work; the 'plein air easel' was an ideal form for the development of a new metaphorical relationship with nature. The original painting easels and the innovation of paint in tubes were tools that allowed artists to move outdoors and immerse themselves in the experience of nature. *Plein Air* is an interactive device that allows users and audience to see and hear how trees are doing in relation to human interaction and atmospheric change. Where Millet extended the idea of landscape to peasants working in the fields, and the Impressionists examined the phenomenological exchange between light and material, Collins and I seek to show that trees sense and physically respond to our

presence and actions. *Plein Air* is a tool to set us in a situation that draws our empathy towards a tree and its environment.

Plein Air: The Ethical Aesthetic Impulse was an installation at Peacock Visual Arts in Aberdeen for six weeks between 3rd of July to 14th of August 2010. The conceptual development of this exhibition began in October 2007. The actual exhibition was curated by Angela Lennon, and supported by the Scottish Arts Council, Aberdeen City Council, Robert Gordon University, The University of Wolverhampton and the Institute for Advanced Studies in the Humanities at The University of Edinburgh.

In this exhibition Collins and I explored trees with *Plein Air* in different public and semi-public places between the Don River and the Dee River in Aberdeen. The artwork is an installation (Figure 13) that consisted of four components: 1) two maps that showed different views of Aberdeen City between the two rivers and which also indicated the location of the trees we studied using *Plein Air*, 2) seven painting easels that held digital photographs of the onsite experiments and small MP3 players that played back the sound documentation from each site, 3) a greenhouse with the *Plein Air* system that demonstrated the plant physiological system and sound system in real-time and also represented our studio situation with trees, 4) a time-lapse video. Collins initiated the idea and production. The narratives about trees as living things were developed and written collaboratively (Appendix C).

(Figure 13): Exhibition at Peacock Visual Arts. The installation overview (image left) and the greenhouse, trees and *Plein Air* (image right)

The context and interaction with specific trees

The exhibition is defined by the context and condition of woodlands in Scotland. The landscape in Scotland has been cultivated for a long time even though many people consider it to be open and wild.

Actual woodland coverage is only 17 percent of the total land area[71] (it is only 12 percent in the UK). These are the least forested areas in Europe. In history trees and woodlands of Scotland have been important to kings, lords and the government (Appendix A5). The scope of woodland coverage has been influenced by a demand for wood during wars followed by cheap available timber in Europe. Forests have been treated as an agricultural crop, a utilitarian material. On the other hand throughout Aberdeen ancient standing stones remind us that it was once a forested Celtic landscape. The standing stones are pre-historical land-marks that use an early Ogham alphabet with letters described by the names of trees. This suggests a forested past. The standing stones often define lost pathways and places. The stones are believed to have been erected and marked in the first century AD or earlier. The symbolic relationship between the tree alphabet and its link with the Celtic landscape is largely lost today.

I developed two maps (Appendix C, p.165) of Aberdeen City. One is a view of the city from the Don River, and the other provides a view from the Dee River. An imaginary trail of trees connects the rivers, city and parks. I chose seven public or semi-public places[vi] in relation to the trees for work leading to this exhibition: Robert Gordon University Garthdee Campus, The Deeside Way, Duthie Park, Union Terrace Gardens, Denburn, St. Nicholas Kirk and Seaton Park. *Plein Air* was used to observe specific trees in these places. In the installation the photographic documentation (Appendix C) and sound documentation (Appendix B: Sound sample Peacock Gallery Exhibition) were presented.

Plein Air was brought to various places. First Collins and I tried to find a trees in the right spot for the experiment. We wanted to have the river views at RGU and Seaton Park. We chose the most visible trees at The Deeside Way and Union Terrace Gardens. We chose visible spots at Duthie park and St. Nicholas Kirk. Along the Denburn we chose a spot that was most exposed to the sun. We chose sunny mornings in order to experience active trees. We brought a portable battery that could power the computer and sensor equipment for two hours. The real-time system translated the CO2 data directly to piano sound and we could hear the numerical change as pitch (Appendix B: Sound sample Peacock Gallery Exhibition).

In the gallery installation we used wooden studio painting easels to hold the documentation of each *Plein Air* experiment. The easels were placed along a wall facing the greenhouse. Each photographic image (941 mm x 594 mm) consisted of the tree, the environment and *Plein Air*. We also placed an MP3 player with headphones on each easel that would allow people to listen to the sound of the tree.

---

[71] Semi-natural woodland cover is only 4 percent. *The Potential for native woodland in Scotland* [online]. Natural Heritage [cited 1 December, 2010]. <http://www.snh.org.uk/publications/on-line/heritagemanagement/nativewoodland>

A tree is a living thing

A Tree is a Living Thing[72] (Goto and Collins, 2010) was a ten-minute time-lapse animation that focused on a very large tree set against the Aberdeen City skyline as it reacted to changes that occurred over a day. The video opened with a view of sunrise through the spires of Aberdeen. The day went from quiet and grey to sunny, then cloudy and windy. The tree went through an amazing set of changes in relation to both the light and wind. The sky became more and more animated until the piece closed with the sunset reflected in the western clouds.

Collins initiated the idea and collaborative production[73]. We developed the narratives together (text in Appendix C) and exchanged the script for the recording. In a call-and-response I took the position of a tree; Collins rehearsed my writing about empathy by reading my text over and over until each word began to sound natural to all of us. We all noticed how Collins and I paid more careful attention to the tone of voice, intonation of some words and intervals between scripts.

The greenhouse

The greenhouse (6' x 6' x 6' tall) was set in the corner of the gallery near the installation entry (Figure 13). A large grow light was placed above the greenhouse on the gallery ceiling to keep the trees healthy and active. *Plein Air* was set in the greenhouse to demonstrate how the real-time sound system worked with the trees. Collins and I had a similar greenhouse in our apartment's garden in Stonehaven. We were testing potted native species: alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*), aspen (*Populus tremula*), Downy birch (*betula pubescens*), English oak (*Quercus robur*), field maple (*Acer campestre*), hazel (*corylus avellana*), holly (*Ilex acquifolium*), Sessile oak (*Quercus petraea*) and Scots pine (*Pinus sylvestris*).

Plein Air was set up by the gallery staff for the exhibition. Collins and I maintained the trees by switching different trees in and out of the greenhouse every week. Collins and I went to the gallery almost every day to check and care for the trees. The ash, aspen, hazel and holly were doing all right for two weeks while the oak, alder, birch and Scots pine started showing stress after a week. We replaced them with other trees. Once the stressed trees were returned to our garden they recovered quickly.

Although I thought the material experiments had drawn to a close, more learning emerged during and after taking the installation down. During de-installing the exhibition I found some insect frass (excrement) on the floor of the greenhouse. On closer inspection at home I found eight hawk moth

---

[72] Goto, R and Collins, T. (2010) *A Tree is a Living Thing* [online] Eden 3 [cited 21 November, 2011]. <http://eden3.net/exhibitions/peacock/video/index.htm>

[73] Technical support including animation and voice-over were done by Adam Proctor, digital coordinator at Peacock Visual Arts.

caterpillars on the aspen leaves that had been displayed for six weeks at the gallery. It was an indigenous U.K. moth called poplar hawk (*Laothoe popili*). I kept them in my small greenhouse in Stonehaven where Collins and I lived. Originally the tree came from a nursery in Kintore near the Don River in Aberdeenshire. I went back there to obtain more aspen trees. I found one more caterpillar on one of the trees. About two weeks later they pupated in the greenhouse. I wanted to know where the trees normally grow and how prolific they are in Scotland. There was some ecological information about aspen and its propagation in Scotland on the Internet. According to the article aspen was a pioneer species in woodland succession and grew with birch, juniper, hazel, bird cherry and rowan in Scotland. When I looked at a map that showed the location of aspen in Scotland, I noticed there was a dotted pattern between the Cairngorm Mountains and the City of Aberdeen. The dots seemed to follow the Dee River. There was an empty area between Maryculter and Kincardine O'Neil. I started thinking about a continuous dotted line, an aspen community that had existed along the river and streams, between the mountains and the sea. I also imagined a popular hawk moth that had always been living with these trees so quietly, throughout the duration of the exhibition. The greenhouse was metaphor of not only holding trees but also nurturing the small creatures for six weeks. This sideline of *Plein Air* continues to grow and influence the project because both aspen and moth are related to environmental issues and culture in Scotland.

In next section I present fragments of conversations from three presentations and public dialogues in and around the exhibition. One is about the relationship between woodlands and public places. The second is about understanding trees with different approaches such as perception, scientific knowledge and empathy. The third is about a juxta-possition between a person's insightful comment and a response from a tree through *Plein Air.* Through these dialogues and different ways to contextualise the issues I extend the way I view the trees and their environment.

Public dialogues

Three public presentations and discussions were organised in and around the exhibition.

- Discussion Around the Research Table (DART) II[74] that was funded by IDEAS Research Institute and hosted by the team at On the Edge Research, Gray's School of Art, Robert Gordon University, May 19, 2010

- Artists' Talk at Peacock Visual Arts, August 7, 2010

[74] Discussion Around the Research Table (DART) II, organised by Reiko Goto, funded by IDEAS Research Institute and hosted by the team at On the Edge Research Gray's School of Art, Robert Gordon University. Seminar Topic: Empathic Relationship with Ecological Art, Wednesday, May 19, 2010 14:00-17:00, Room SB 01 at Scott Sutherland Building, Robert Gordon University.

- *Climate change: Seeing the invisible and hearing silence* at Institute for Advanced Study (IASH) in the Humanities, the University of Edinburgh, September 24, 2010[75].

DART II, the first public dialogue intended to invite Helen Mayer Harrison and Newton Harrison for their special public lecture entitled as "Patch Thinking and the Force Majeure". Their lecture was cancelled due to the eruption of the Eyjafjallajokull volcano in Iceland. Instead, I gave a presentation[76] about ecology and environmental art in public places in relation to the exhibition. Steve Brown, Woodland Officer at Grampian conservancy, was invited as a special speaker. He presented the brief history, current condition and future of woodlands in Scotland.

During the conversation Brown said, "We are bound by landscape character assessments as we are in this area. The whole of Deeside has been character-assessed[77], so it gives you an idea of what it should look like – it is a natural idea, if you like. It is not that flexible, or the perception is that it can't be that flexible. It has to be Scots Pine [by virtue, they say]. That's the only thing [they do there], but I'm not sure if that is correct." (Brown in Goto, 2010, pp.17-8[78]).

His pause made me wonder what would be the best way to learn about the native land and its vegetation and their communities in the past, present and future. In my previous research projects, *Nine Mile Run* and *3 Rivers 2nd Nature*, it was important scientists, artists and college students who worked together finding the vegetation and mapping and documenting them. In U.K. the National Vegetation Classification (NVC) seemed to be an important estimate for ecological restoration if it would leave some room for other kinds of arguments such as cultural landscape and community forests.

Brown also said, "Ownership of land is very important. People should, I suppose, own land, or communities should own land, so that they can identify that area of land" (DART II, 2010, p.18). His comment reminded me of an area near Stonehaven where there was a mixture of farmland, moor, standing stone and Roman campsites. It was not clear which areas were publicly or privately owned. If some were public land, I could not imagine who would go there. Steve Gray, environmental planner for Aberdeen council, said, "The cultural connection with the community woodland has to be re-established. You have to support it as not just a place of beauty or a place for recreation, but a place of shared resources whether it is timber; whether it is game; etcetera" (DART II, 2010, p.19). Collins

---

[75] < http://eden3.net/dialogue/2010/IASH25sep10.pdf>

[76] <http://eden3.net/dialogue/2010/reiko-seminar.pdf>

[77] This is informed by The National Vegetation Classification (NVC, 1998). NVC was plant community schemes that have been developed by Prof. Rodwell and other scientists. NVC is related to soil, water, low land and high land. This U.K. vegetation protocol was intended to help ecological restoration.

[78] Brown *in* Goto, R. (2010), Discussion Around the Research Table (DART) II. [online]. [cited 22 Octorber, 2011] . <http://eden3.net/dialogue/2010/reiko-seminar.pdf>

asked, “Do I understand correctly that the community woodland requires utilitarian values in the intent, rather than intrinsic values or the aesthetic values of having a woodland and does that indicate a lack of thoughtfulness in the economic models that inform this community woodlands?” (DART II, 2010, p.19). Gray said “yes”, while Brown said, “no” (DART II, 2010, p.19).

Brown’s response of “yes” reminded me of when I visited the Trossachs National Park with Brown and the Native Woodlands Discussion Group in spring 2010. The sheep had been removed from the area since the place was claimed as a national park. Thousands of small birch trees were growing in the bracken area. Ruth Anderson, the organisation’s tour manager pushed aside the thick bracken with her hands to show me the base of a tree trunk. It was thick and looked like an old bonsai tree. She told me these birch trees had started growing long before the sheep were gone. They were small because the saplings had been eaten by sheep over and over again. It was almost miracle they could re-grow.

If people wanted to learn about forest ecology in Scotland, seeing these milions of small birch trees might be an important step to see the change between the land and trees. The relationship between artist, society and culture could be found in some tasks such as introducing the symbolic relationship between these trees and the cultural landscape; providing a context to understand the past and present of the tiny old trees; and expanding our imagination in shared experience to talk about the future of woodlands.

The second presentation and public dialogue[79] occurred during the exhibition at Peacock Visual Arts. I did not record the audience’s names, but about fifteen people participated in the event. Collins and I invited Duncan McGregor, an arboriculture specialist and Tree Officer on Aberdeen City Council and Julia Roberts, an environmental educator and the director of Creative STAR Learning. The presentations addressed the question, “What would help us understanding trees on a deeper level?” The dialogue began with knowing the names of trees. A person talked about his colleague who taught about birds by listening and identifying the sounds of birds in the environment. It would be a perceptual way to understand the other. Another person said naming would be recognition. He also said, “*Plein Air* is just telling me that it’s alive.” I was interested in how I would recognise a living tree. He asked how the tree in the gallery greenhouse in the middle of Aberdeen responded to different CO2 levels from passing cars (Dialogue at Peacock, pp.18-19). Another person said, “You can tell it’s alive just by looking at it; but you can’t tell what’s going on …” (Dialogue at Peacock, p.19). Then he said, “Yes, but you won’t be able to relate that in any kind of context. All you can hear is that noise.” Collins and I agreed the *Plein Air* setting in the gallery did not give a point of reference – but more importantly, his comment anticipated the next step. In this conversation cognitive mental activity seemed to be driving our imaginations.

[79] <http://eden3.net/dialogue/2010/plein-air.pdf>

Another person said, "I've always regarded trees as something that were 'other', and somehow separate from me even though my being here depends upon them. So there is that connection and yet it seems important to me to regard them as 'other' because I find that when I go too close to trees, my behaviour changes. I walk differently; I listen in a different way; I look in a different way. Although you're talking about developing empathy with trees as existing beings or 'other', I still think it's important that I don't develop that empathy to such an extent that I feel we're the same. We might be part of the same things, but the concept of something very different from me is very important to me because it makes me more define my behaviour, and I don't understand whether that's good or bad or what it is. I just think I've got something to learn from it." (Dialogue at Peacock, p.12). This person's quote resonated with Stein's "empathy as the perceiving of foreign subjects and their experience" (Stein, 2002, p.1).

The third presentation and public dialogue occurred in the autumn of 2010. My collaborator Tim Collins spoke at IASH, a mixture of philosophers and artists participating in a presentation that was entitled *Climate change: Seeing the invisible and hearing silence*[80]. I worked with a small oak tree while he spoke. *Plein Air* was set up next to a large window that reflected the grey skylight. In the small room with 16 people the CO2 levels moved from 340 ppm to 800 ppm. If the window was open the amount of CO2 would have been lower. During Collins' presentation the real-time sound system was making a monotonous and repetitive piano sound. I was worried it might give the audience a headache. Collins started showing the time-lapse video work (Goto and Collins, 2010). I pulled the curtain on the window. Soon, but not abruptly, the sound from the system was reduced and became quiet. I noticed the tree was asleep. In this case the word 'asleep' is a metaphor for a non-active being. After the video ended I opened the curtain again. The tree woke up and the sound started again. Some people seemed to have noticed the significance of this incident while others remained unaware of it. There was an insightful critique from the audience.

> It seems that, when you talk about the tree, or the aesthetics of this event, your conversation stops at a certain point which seems to be the tree. I'm not sure where the tree stops – maybe the leaf, or something like that. But of course, what we're hearing – this comes back to the last question – and what we're responding to is actually this assemblage that's been put together – it's not the tree, it's also the wires, the computers in the box and anything else that's on the go. I guess the question is, if this is [an event] – an aesthetic engagement with nature – then, aren't we editing out the socio-technical possibility of this aesthetic engagement that you've actually put together – that, actually, what we're [studying] is aesthetic engagement, it's not nature – but this kind of wonderful, complex assemblage that allows us to hear a tree breathe; that allows us to hear the [logarithms] it describes – the differential of carbon dioxide that constitutes a tree breathing in. In one sense, it measures the tree breathing in. And so, yes, I'm just wondering how one incorporates this entire

[80] Goto, R. and Collins, T. (2010) *Climate change: Seeing the invisible and hearing silence* [online]. Eden 3, [cited 22 October, 2011]. < http://eden3.net/dialogue/2010/IASH25sep10.pdf>

> assemblage into our ethical appreciation of nature because it seems to be invisible from the work you're doing.
>
> (A comment from the audience during the discussion)

His argument begins with questioning what we are observing through *Plein Air*. Are we observing wires and the computers in the box instead of a tree? Is our aesthetic engagement with nature actually an engagement with technological devices? Certainly I am depending on a plant physiological system, computer monitors, data and sound systems that allow me to observe a tree's reaction to the atmospheric changes.

The breath of the tree involves carbon dioxide that is invisible and odourless. We understand the substance intellectually or as an idea that can be confirmed but not understood by experience alone. Photosynthesis data has a semiotic code relationship that can illustrate how the tree reacts to light and CO2. Transpiration data has a semiotic code relationship to the tree's reaction to temperature and humidity even in the real-time sound system.

The response of the oak tree at the IASH was another epiphany. The tree was placed next to the window but it was a grey day. I did not expect the curtain would make any difference to the tree. I was paying attention to the presentation and the sound quality. All of a sudden the silence of the tree made me (and members of the audience) aware that the tree was a living being. This kind of experience could make us notice a sense of lived connectedness with the tree and the environment.

Reflections on *Plein Air*

In the phase one analysis I have focused on how the conceptual framework reflects plant physiology data, the sound enquiry and my experiences such as Duke Forest, *Druid Circle of Oak*, the story of Zen shakuhachi player, and meeting two Japanese men who visited a sacred tree. The analysis in phase two focused on how the conceptual framework reflected on the relationship between trees, people and their context with or without *Plein Air*.

I. Empathy

EMPATHY IS AN ACT OF PERCEIVING IN WHICH WE REACH OUT TO THE OTHER TO GRASP HIS/HER STATE OR CONDITION. IT CONSISTS OF ONE'S EMOTIONAL AND PHYSICAL EXPERIENCES. EMPATHETIC EXPERIENCE IS DETECTED TOWARDS SOMETHING FOREGN RATHER THAN SOMETHING FAMILIAR

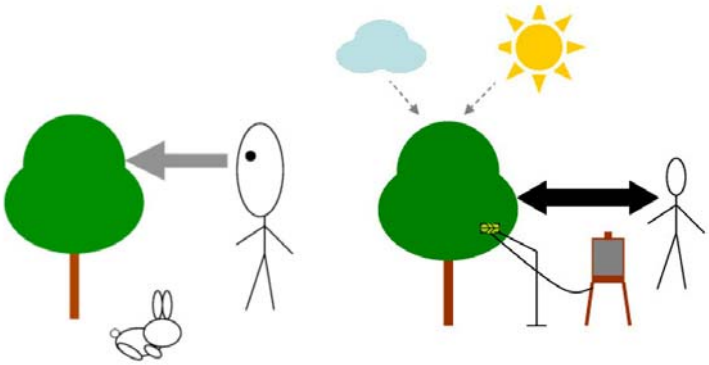


Figure 14

Figure 14 left shows a person who perceives a tree mainly through visual perception. The experience can be interpreted like Dewey's dictum[81]; it is quite possible to appreciate a tree for its form and texture without knowing anything about trees theoretically. How does a person understand a tree as a living being? The question has been addressed in Allen Carlson's natural scientific model in chapter two. I have discussed his methodology that asserts claims to arrive at 'truth' (epistemological and ontological).

Figure 14 right shows the *Plein Air* being used as a scientific instrument to extend a person's physical body and perceptual ability. *Plein Air* is intended to make us notice the tree's physiological responses to atmospheric changes such as light, temperature, moisture and CO2 that are invisible to our sense of sight, odourless to our sense of smell, and silent to our sense of hearing.

RECOGNITION OF EMPATHIC SYMBOLS (THIS FEELS) VERSUS SYMPATHETIC SIGNS (THIS MEANS)

Sign relationship and symbolic relationship can be interpreted in figure 14 right. This idea has been reflected on in the real-time sound translation system in the previous phase (p.109).

STEIN'S PHENOMENOLOGICAL CONCEPT "PHENOMENA OF LIFE" IS A SENSE OF LIVED CONNECTEDNESS THAT IS AN AWARENESS OF THE RELATIONSHIP BETWEEN BODY, MIND AND ENVIRONMENT

> Phenomena of life or a sense of lived connectedness is a phenomenological experience and awareness between body, mind and its environment.

Figure 14 right also illustrates "phenomena of life" – a sense of lived connectedness. I have described the moment when I felt the "phenomena of life" – a sense of lived connectedness as epiphany in the experience of Duke Forest with a scientist with plant physiology equipment (phase one, p. 91). In

[81] It is quite possible to enjoy flowers in their coloured form and delicate fragrance without knowing anything about plant theoretically (Dewey, 1934, p.4).

phase two this lived connectedness is recognised during the presentation in IASH with *Plein Air* (p. 118).

II. Metaphor

METAPHORICAL PROJECTION OF AN IMAGE OF OURSELVES AS ANOTHER

> Lakoff and Johnson's idea about empathic projection is a type of metaphor that helps us to imagine ourselves as if the other is looking and judging our behaviour. This rationalisation comes from the relationship between what is perceived and what is presented.

The experience of *Plein Air* can be interpreted through empathic projection such as "active tree" (the Headlands aspen data, pp.101-2), "weariness of the tree" (the Headlands oak, August 2, 2008, afternoon, pp.96-7), or "asleep" (the IASH oak, p. 118).

The participatory relationship is an important feature in *Plein Air*. The plant physiology system in *Plein Air* reveals complex relationships between a tree and atmospheric changes. However, not every moment of the tree's response is comprehensible to us. If I integrate myself within the *Plein Air* system, my understanding of the tree's responses influences the sound translation as well as the audience.

AWARENESS OF METAPHORICAL FOREGROUND/BACKGROUND RELATIONSHIPS

> Schön's idea of generative metaphor/creative metaphor is used to both generate and rationalise a complex reality in a new way that in turn shapes how we respond to, or interact with, that setting. It does not directly solve the problem but suggests a new situation. It enables a new perception and supports transformation.

Plein Air is a metaphor that has a relationship with trees and the environment (the background). The original *Plein Air* was a portable easel that allowed artists to move outdoors and immerse themselves in the experience of nature. For instance, trees are observed as light, shadow, colours and textures in relation to the picture frame. This *Plein Air* is an interactive device that allows users and audience to see and hear how trees are doing in relation to human interaction and atmospheric change. The experience in the Duke Forest (p. 80) was the tree's response to my body's actions. Trees respond to the amount of CO2 that can be produced by humans. Through Plein Air the artists seek the possibility of an empathic understanding from people to trees.

III. Aesthetics

EMPATHY AS A CRITICAL VALUE, A CONDITION OF AESTHETIC DISCOURSE IN DIALOGUE

> Kester's theory of dialogical aesthetics is in the conversational domain. It is recognised as the quality of speech acts and process of dialogue, the quality of inter-subjective exchange, and indication of an empathic relationship.

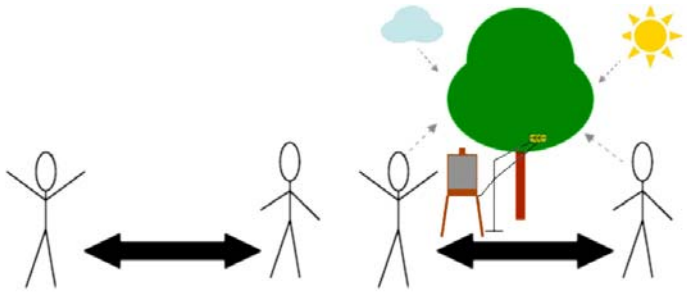


Figure 15

The figure 15 left illustrates a basic dialogical approach. Trees do not have their own voice, but people can be interlocutors for the trees. Empathic relationships can be possible between two people. Each of them has different interests in trees and woodlands. If this is a group of people, this type of dialogue can be understood as diverse interests. It can be influenced by the number of people who share the same kind of interest or have political power.

In figure 15 right *Plein Air* – metaphor of empathic relationship with living beings is privileged in the context of dialogue. Inter-subjective exchange makes information-rich background that includes eco-system relationships, past and present conditions, cause and effect, and action plans.

AESTHETICS THAT EMBRACE AN INTEGRATION OF SOMATIC PERCEPTION AND INTELLECTUAL KNOWLEDGE THROUGH IMAGINATION

> The integrated approach frames the dynamic environment to set our mental power into harmonious free-play – perceptual quality and the natural science model (a knowledge-based approach) remain discrete in the integrated approach. The power of imagination draws these things together in aesthetic experience.

Figure 15 right illustrates the integration of different relationships: empathic relationship with trees are informed by inner and outer perceptions, *Plein Air* takes a symbolic relationship between body, mind and environment; a metaphor that consists of a background-foreground relationship, participatory relationship and empathic relationship in dialogue between people. The aesthetic experience is informed by being aware of all the tensions between these relationships and reconfigures a story (or narrative) through one's imagination.

I. Empathy

EMPATHY IS AN ACT OF PERCEIVING IN WHICH WE REACH OUT TO THE OTHER TO GRASP HIS/HER STATE OR CONDITION

> Lived body-empathised experience is the unique nature of empathy. Through our memories we re-experience certain perception in the present.

Figure 16 is similar to Figure 14 left. This is the new cycle of the enquiry. The *Plein Air*'s figure is no longer placed in the diagram. The person has experience of being aware of the relationship, not only between a tree and the person, but also the sunlight, clouds and other living things. The experience of *Plein Air* has been stored as memories and contextualised understanding.

When the person looks at another tree in a different environment, he/she will rely on the memories and knowledge that consist of the quality of the light, temperature and the appearance of the tree, and other small incidents that are similar to the tree in front of him/her. We may describe vigour and sluggishness in plants as we describe them in people and animals.

The person may remember vigorous energy from the previous tree. This tree may be similar to the other tree from the past, but the environment may be very different. Empathy always looks for something unfamiliar or unknown in a new relationship. This is the focal point of my artistic intervention.

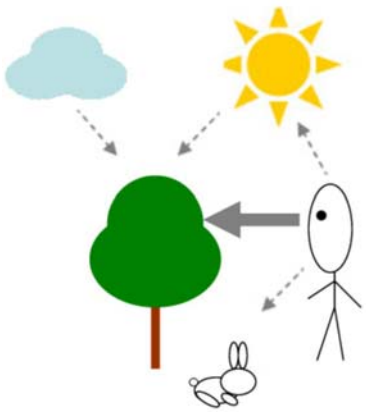


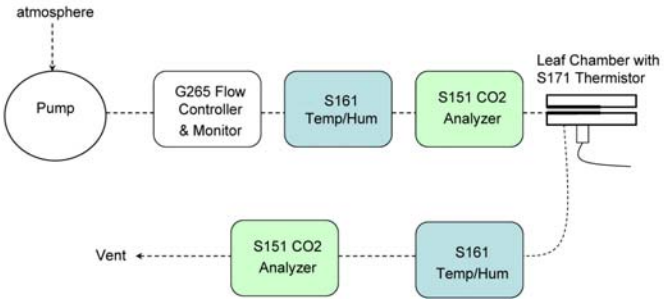
Figure 16

[i] The chlorophyll is shown in the dark areas of the leaves (Figure 17 left) below. Two kinds of stomata when they are open and closed (image right). The process of photosynthesis begins with a leaf of the tree that is surrounded by atmospheric turbulence. On a leaf there are

thousands of small pores called stomata (Figure 17 right). When the stomata open they take in carbon dioxide. The stomata also control transpiration. Water from the soil is drawn through the root and up the stem, passing into and through the green leaves. Transpiration maintains the leaf temperature while stomata control and prevent dehydration. Inside the leaf the green substance in plants called chlorophyll processes the sunlight, carbon dioxide and water to create a type of sugar that builds the plant body, fruits and seeds. Leaves reduce the CO2 level and produce oxygen during the daytime and reverse the activity during the night. Some plants reduce the CO2 level more than others.

(Figure 17): Image of leaves and stomata

ii The diagram of the plant physiology system. A gas controller which just measures how fast the air is moving through the system. One CO2 analyser samples the leaf in the leaf chamber, and the other analyser references CO2 analyser which samples the atmosphere – the air outside. Two sets of Lab-pro units take data in from the CO2 analysers. There are also the light sensors, humidity sensors and temperature sensors.



(Figure 18): The diagram of the plant physiology system

iii Calculating Photosynthetic Rate (umol $CO2/m^2/s$)

Equation:
(CO2 Reference – CO2 Sample) * [(G265 FLOW)/(4.431301 * (273.15 + (AIR TEMP)]

The first term in this equation shows the concentration of CO2 in the gas which has changed. The second term is the "molecular flow" which describes how many moles of gas flow past the leaf per unit area time. This molecular flow measures the entire composition of gas and doesn't discriminate; it simply measures the total amount of gas. When you multiply this by the ppm (it's really %) CO2 then you get a measure of the CO2 that is flowing in the gas. In this way, the equation above measures ONLY the CO2 that is in the gas stream being altered by the plant for photosynthesis. The same general equation applies to the transpiration calculation but is much more complex because we have to consider relative humidity, temperature, saturated water vapour pressure and atmospheric pressure.

Calculating Transpiration Rate (umol $H_2O/m^2/s$):

Equation 1: (Esamp –Eref)/ (1013.25-Esamp) * [(G265 FLOW)/(4.4313 * (273.15 + (AIR TEMP)) * 1000000

Where: Esamp = Sample Humidity
Eref = Reference Humidity
1013.25 = Atmospheric Pressure in mbar (may change from day to day)

Equation 2: Esamp = (Sample RH) * (Saturated Water Vapour Pressure @ Temp (mbar))/100

Equation 3: Saturated Water Vapour Pressure @ Temp (view EXCEL Spreadsheet for details)
$(0.000672*(LEAF\ TEMP^3))+(0.0019069*(LEAF\ TEMP^2))+(0.557686*(LEAF\ TEMP))+(6.01482)$

Equation 4: Eref = (Reference RH) * (Saturated Water Vapour Pressure @ Temp (mbar))/100

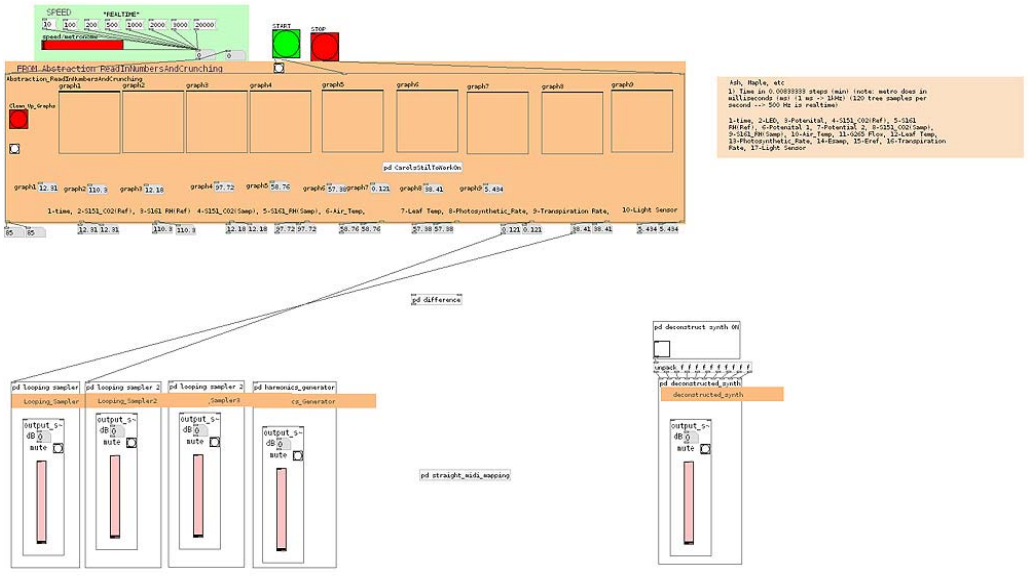
Equation 5: Saturated Water Vapour Pressure @ Temp (view EXCEL Spreadsheet for details)
$(0.000672*(\text{AIR TEMP}^3))+(0.0019069*(\text{AIR TEMP}^2))+(0.557686*(\text{AIR TEMP}))+(6.01482)$

[iv] Plant physiology data. The Logger Pro 3.6.0. is a software program that organises all the data from the Qbit system. The data sheet consists 11 columns: time (column left), amount of the atmospheric CO2, atmospheric humidity, leaf CO2, leaf humidity, atmospheric temperature, air flow from the pump, leaf temperature, photosynthesis (green), transpiration (blue) and light intensity.

Time	S151 CO2 (REF)	S161 RH (REF)	S151 CO2 (SA	S161 RH (SAM	Air Temp	G265 Flow	Leaf Temp	Photosynthetic I	Transpiration Rat	Light Sensor
t	Conc 1	RH 1	Conc 2	RH 2	Temp	Flow	Leaf Temp	PS Rate	Trans Rate	Light
min	ppm	%	ppm	%	°C	mL/min	°C	µmol CO_2/m²/s	µmol H_2O/m²/s	µmol quanta/m²/s
0	369.6494631	63.61984071	368.8759986	59.08848391	17.6284848	4.048901938	17.27522469	0.002430436	-3.671078789	8.121203881
0.008333333	369.6494631	63.61984071	368.8759986	59.08848391	17.6284848	5.03495862	17.25990969	0.003022336	-4.608305238	8.121203881
0.016666667	370.2400419	63.61984071	368.8759986	59.04754437	17.6284848	4.048901938	17.24460557	0.004286195	-3.765674755	8.121203881
0.025	369.6494631	63.66078025	368.2831176	59.08848391	17.6284848	4.048901938	17.24460557	0.004293429	-3.766314933	8.121203881
0.033333333	369.6494631	63.61984071	368.8759986	59.04754437	17.6284848	4.048901938	17.25990969	0.002430436	-3.731030194	8.121203881
0.041666667	369.6494631	63.70171979	368.8759986	59.04754437	17.6284848	4.048901938	17.25990969	0.002430436	-3.782711466	8.121203881
0.05	370.2400419	63.61984071	368.8759986	59.04754437	17.6284848	4.048901938	17.24460557	0.004286195	-3.765674755	8.121203881
0.058333333	369.6494631	63.61984071	368.8759986	59.08848391	17.6284848	4.048901938	17.24460557	0.002430436	-3.740474374	8.121203881
0.066666667	370.2400419	63.66078025	368.8759986	59.08848391	17.6284848	4.048901938	17.24460557	0.004286195	-3.766314933	8.121203881
0.075	369.6494631	63.66078025	368.8759986	59.04754437	17.6284848	4.048901938	17.24460557	0.002430436	-3.791515106	8.121203881
0.083333333	370.2400419	63.61984071	368.8759986	59.04754437	17.6284848	4.048901938	17.25990969	0.004286195	-3.731030194	8.121203881
0.091666667	369.6494631	63.57890117	368.8759986	59.08848391	17.6284848	4.048901938	17.24460557	0.002430436	-3.714633816	8.121203881
0.1	370.2400419	63.61984071	368.8759986	59.08848391	17.6284848	4.048901938	17.24460557	0.004286195	-3.740474374	8.121203881
0.108333333	369.6494631	63.61984071	368.8759986	59.08848391	17.6284848	4.048901938	17.24460557	0.002430436	-3.740474374	8.121203881
0.116666667	370.2400419	63.61984071	368.8759986	59.08848391	17.6284848	4.048901938	17.24460557	0.004286195	-3.740474374	8.121203881
0.125	369.6494631	63.61984071	368.8759986	59.08848391	17.6284848	4.048901938	17.22931232	0.002430436	-3.775086363	8.121203881
0.133333333	370.2400419	63.61984071	368.8759986	59.08848391	17.6284848	4.048901938	17.22931232	0.004286195	-3.775086363	8.121203881
0.141666667	370.2400419	63.61984071	369.4688795	59.04754437	17.6284848	4.048901938	17.22931232	0.002423202	-3.800262208	8.121203881
0.15	370.2400419	63.61984071	368.8759986	59.04754437	17.6284848	5.03495862	17.22931232	0.005330041	-4.725765961	8.121203881
0.158333333	370.2400419	63.57890117	369.4688795	59.04754437	17.6284848	4.048901938	17.22931232	0.002423202	-3.774422141	8.121203881
0.166666667	370.2400419	63.61984071	368.8759986	59.08848391	17.6284848	4.048901938	17.22931232	0.004286195	-3.775086363	8.121203881
0.175	370.2400419	63.57890117	368.8759986	59.08848391	17.6284848	4.048901938	17.22931232	0.004286195	-3.749246089	8.121203881
0.183333333	370.8306207	63.61984071	368.8759986	59.04754437	17.6284848	4.048901938	17.22931232	0.006141954	-3.800262208	8.121203881
0.191666667	370.8306207	63.53762606	368.8759986	59.04754437	17.6284848	4.048901938	17.2140299	0.006141954	-3.782901343	8.121203881
0.2	370.2400419	63.57890117	368.8759986	59.08848391	17.6284848	4.048901938	17.22931232	0.004286195	-3.749246089	8.121203881
0.208333333	370.2400419	63.53762606	368.8759986	59.04754437	17.6284848	4.048901938	17.22931232	0.004286195	-3.748370271	8.121203881
0.216666667	370.2400419	63.53762606	368.8759986	59.04754437	17.6284848	4.048901938	17.2140299	0.004286195	-3.782901343	8.121203881
0.225	370.2400419	63.49668652	368.8759986	59.08848391	17.6284848	4.048901938	17.2140299	0.004286195	-3.731909588	8.121203881
0.233333333	370.2400419	63.53762606	368.8759986	59.04754437	17.6284848	4.048901938	17.22931232	0.004286195	-3.748370271	8.121203881
0.241666667	370.8306207	63.49668652	368.8759986	59.08848391	17.6284848	5.03495862	17.22931232	0.007637746	-4.597795488	8.121203881
0.25	370.2400419	63.45574698	368.8759986	59.04754437	17.6284848	5.03495862	17.2140299	0.005330041	-4.639911646	8.121203881
0.258333333	370.8306207	63.45574698	368.8759986	59.08848391	17.6284848	10.906349	17.22931232	0.016544311	-9.889794266	8.152082983
0.266666667	370.2400419	63.49668652	368.8759986	59.08848391	17.6284848	14.78624737	17.22931232	0.015652821	-13.50242308	8.152082983
0.275	370.2400419	63.45574698	368.8759986	59.08848391	17.6284848	41.91434317	17.2140299	0.044370806	-38.36533346	8.121203881

(Figure 19): Plant physiology data

[v] Perfect Data is connected to the data Logger Pro 3.6.0. This module is designed by Dr. Carola Boehm 2008. The pd looping samplers are in the bottom right.



(Figure 20): Perfect data

[vi] Plein Air between the two rivers:

Robert Gordon University (RGU), the trail and an elm tree

RGU Garthdee Campus was founded in1885. It is located next to the Dee River. The campus open spaces are managed for the school, neighbourhood and visitors. A trail on the campus provides a right of way for the public. There are riparian rights from 10m to 150m back from the river bank. These areas are left for faunas: river otters, foxes, rabbits, Roe deer, Sika deer, squirrels, birds and insects. Collins and I chose a native elm tree on the edge of the river cliff.

The Deeside Way and a silver birch tree

The Old Deeside Railway Line between *King George VI Bridge* and *Peterculter* has been opened as a trail called *the Deeside Way* since 2006. It is part of the City's Green Transport Network and provides a greenway to the city for walking and cycling. Naturally established vegetation includes both exotic and native species. Downy birch (*Betula pubescens*) and silver birch (*Betula pendula*) are fast-growing pioneer trees. These indigenous trees contribute significant aesthetic elements and structures on the trail that goes through residential areas and large open farm land.

Duthie Park and a lime tree

Duthie Park was a gift from Lady Elizabeth Duthie of Ruthrieston in 1881. It comprises 44 acres (180,000 m^2) of land. It is located on the lower North bank of the Dee River. It is also the entrance of the Deeside Way. The mild elevation of the park, wide open lawn and the noted Winter Gardens offer diverse recreational activities for families and other visitors. The Victorian stand provides an elegant character in the large open grass area. "Lime became widely planted in Scotland from the early eighteen century…Avenues of lime quickly became de rigueur for the discerning landowner, especially during the Victorian era" (Rodger, Stokes and Ogilvie, 2003, p.84.)

Union Terrace Gardens and an elm tree

Union Terrace Gardens are a hectare of wooded park located in the very heart of the city. Its original name was *Corby Heugh*. *Corby* means crow and *Heugh* means low-lying meadow. It is a part of the lower Denburn catchments basin. It has been open as a public park since 1879. A part of the burn is in a culvert under the railway next to the park. There are two hundred year old native elm trees that survived Dutch elm disease. Previously three development plans have been presented. The most recent scheme, initiated by Sir Ian Woods, proposes to enclose the valley as a rooftop garden to promote commercial economy (2009 - present); the second scheme was initiated by Peacock Visual Arts to build a new arts centre (1998 - 2008); and the third scheme was originally submitted by the city architects in 1997 to double the size of the gardens by decking over the road and railway line.

Denburn and a cherry tree

Denburn is a little stream that flows from the lower Kingswell, the Woodend Hospital area, Rubislaw and Queens Terrace Gardens, Gilcomoston and next to the Union Terrace Gardens. It has been channelized since 1648. Following the stream from the lower steam to upper stream is quite interesting. Some places are open and wooded and other places are in a culvert. The sound of water creates a tranquil quality in the area. Stonefly larvae, a clean water indicator, inhabit the stream. A cherry tree next to the burn is located between the end of Albert Lane and Osborn Place.

St. Nicholas Kirk and an elm

The history of St. Nicholas Kirk was been established since the early 12th century. The church has gone through many changes. The current building, built between the 18th and 19th century, stands on the 15th century building structure. This historical landmark is one of the few places that hold old trees including elm trees in the middle of the city. This kind of landmark, a built and natural environment can be important for tracing how people related to the natural environment in the past.

Seaton Park and maple

Seaton Park was established in 1947. The park is connected to the communities of the University of Aberdeen, old Aberdeen, Tillydrone, Woodaide and Middlefield. The maple we have chosen for *Plein Air* is located right next to the slow-flowing Don River that contains silt and dissolved minerals (Marren 1982, pp. 75-84). The water quality has been affected by a paper mill and upper agricultural land. There is a trail along the river that leads to the mouth of the Don estuary where many seals often stay, both in the river and on the island.

Chapter 5: Conclusions

My research started with a question: Is it possible to create change if we interpret and understand life is interdependent and interrelated with nature in our environment? In relation to this question I started thinking about the role of artists in a field associated with science (for example, ecology) and policy. I chose trees as a subject matter of my art project.

Why trees? Our relationship with trees is embedded in human history. I identified three lines of enquiry: 1) trees as utilitarian material, 2) trees as aesthetic objects, and 3) trees as living beings. My study goal was to develop, apply and evaluate the concept and importance of empathy based upon Stein's phenomenological approach as well as Schön, Lakoff and Johnson's metaphorical concepts, Brady's rational imagination in relation to environmental aesthetics and Kester's dialogical approach to aesthetics. In this way, a conceptual critical framework was built up and applied first to two contemporary artistic case studies and then to my own artistic practice. I have argued that artists engaged with the interpretation of the natural environment utilise such critical framework to better understand, interpret and mediate their own practice. I also argued that this approach offers an original insight into the aesthetic of artistic practice in this field.

This approach was first applied to two major case studies. Interpreting them revealed and confirmed central ideas like empathy and connectedness in artistic practice. I examined two artworks that focused on trees as a subject matter. In *7000 Oaks* Beuys began with sympathy for the debacle between romanticised nature and the actual conditions of the forests that had been influenced by industrialisation and the World Wars. How did the artist shift from sympathy to empathy through the creative act? A symbolic relationship between trees and culture was the dominant concept in *7000 Oaks*. The concept of metaphor, a foreground-background relationship and a sense of lived connectedness were recognised in Beuys' new symbolic meaning in the context of German mythology, culture and metaphor. The experience of the war seemed to influence how Beuys would view the world for the rest of his life. His mixed media work with organic materials such as wax, felt and honey can be understood as the idea of empathic projection and sense of lived connectedness between body, mind and the environment. "Everyone is an artist", Beuys' manifesto, was embedded in his vision of a new mythology within *7000 Oaks.* It took on a collective narrative process in a shared environment.

The Harrisons' *Serpentine Lattice* also began with a sympathy-based ethical position for the dying coastal rain forest between Northern California and Southern Alaska. The *Serpentine Lattice* was a magnificent and imaginative work of art which, through creative metaphors such as "field of play",

relied on natural boundaries and “metaphorical flips” to transform the dying forest into a new ecological equilibrium in a cultural landscape. Empathic projection was used when interpreting the long strip of coastal highlands as a mythical creature – a serpentine. Diverse voices were assembled as poetic narratives using empathic projection to take the other’s position through face to face dialogue, eye contact, tone of voice, and body gestures. In this way the validity of the critical framework, as a central reflective dimension of creative practice, was confirmed.

The critical framework was then applied to my own artistic practice in the *Plein Air* project. The project started with the assumption that, although trees do not have feelings, emotions and mobility the same way we do, they do have senses that respond to light, temperature, humidity and carbon dioxide. *Plein Air* thus became an investigation into how and whether technology could become an extension of our senses, allowing us to notice a tree’s response to atmospheric changes, how this can be achieved in practice, and how we could better understand the aesthetics of it depending on how we understood the quality of lived connectedness.

In the trees’ response at the Duke Forest I experienced an epiphany that had a symbolic relationship between a tree, the sunlight, clouds and my interaction through plant physiology equipment. I concluded that it would be possible to recreate an empathic experience through technological intervention. This highlighted how an understanding of trees could depend as much of empathic truth as on plant physiology. Tree responses are not always comprehensible, but the moment I notice a response from a tree it appeals to an empathic truth rather than a fact of plant physiology. Prof Hocking showed me good examples of data that implied clear tree responses. If we found a tree that responded well to us, that tree could be the one to use in building an empathic relationship. It was crucial to develop this and, in doing so, to capture the distinctive role of the creative artist: empathic projection, through imagining ourselves as the other, was the key component of *Plein Air* that could extend my physical ability to sense the invisible trees’ responses to atmospheric changes.

The use of the critical framework and its key ideas and insights enabled me not only to understand my artistic practice better, but also to build it into a more deliberate and conscious approach than ever before. In this critical framework each idea became a method in my practice.

One question was how I looked at trees. If I looked at trees in a self-interested manner, how could I shift my energy toward an empathic way of looking? I asked which position *Plein Air* could take – for example, in the plant physiology data small numbers were translated to low pitches and large numbers were translated to high pitches. Sign relationship is found in this kind of sound translation. Shifting from sign relationship to a symbolic one requires an interpretation of the tension between the environmental conditions and the tree’s responses.

The Duke Forest experience was an epiphany and a sense of lived connectedness. It was an awareness of the relationship between body, mind and environment. This reminded me of what Stein had said, "Just as solidifying wax is first liquid and then hard but still wax, so the same material body remains" (chapter 2, p.25). I applied this metaphor in *Plein Air* as a sense of lived connectedness. I recognised the experience of the Duke Forest tree responses as solid wax, and listening to Prof Hacking's aspen's vigorous response as liquid wax to build upon.

Schön and the Harrison's creative metaphor also taught me how to look at a complex situation as a foreground/background relationship. This was different from Stein's example of a sad countenance as background with sadness as the foreground. Stein's example was about a bodily expression while a creative metaphor is about imagination that can be attached to cognitive mental activities although metaphor can be physical because it is like a container of actual experiences.

It would be possible and desirable to generalise from these insights into my own practice by suggesting that the critical framework and its reflexive methods could (and even should) be used by creative artists in their work with the natural environment and that we could better understand artistic practice itself, and its related analysis of aesthetic, by using this approach.

In ecological and environmental art practice, trees cannot be separated from the environment. It takes integration of empathy, cognitive mental activities and rational imagination to understand the complex relationship. Creativity, the core of art, takes an important role in this integration of mental activities.

I recognised two kinds of important qualities in dialogue: one is a convivial approach that informs an information-rich environment; and the other one is a more intimate shared experience that develops over time. The creation of a new story seems to consist of diverse interests and values that privileges trees and ecosystems in the cultural landscape and the public realm.

In my previous projects *Nine Mile Run* and *3 Rivers 2nd Nature*, my ethical position was recovery of nature in a post-industrial public place. My small contribution to knowledge was new ethical and aesthetic positions that had been recognised in the process of *Plein Air*. It was based on a non self-interested relationship with trees and their environment. This relationship was also based on trees as living beings that respond to our interactions.

The argument that this approach, and the understanding and insights it claims to offer, can be extended even further. The future implications of this research are modest:

- For artists who are involved in socially and environmentally-engaged practices, empathy may provide a new direction when they cannot find a solution to a problem.

- Empathic projection is based on deep observation. For ecological and environmental artists it can be an important means to communicate with a wider audience about the other without falling into the trap of anthropomorphizing nature.

- For artists who have opportunities to deal with public places and planning a sense of lived connectedness is another important awareness and practice. Shared experience over time can make a relationship with a place unique and strong, but it also opens the practice to critical engagement or dialogue with others.

- Enquiry-based teaching and learning can rely on empathy to perceive foreign subjects and their environments. It is quite possible to appreciate a tree in form and texture without knowing anything about trees. How does the person understand a tree as a living being? The question can be pursued in aesthetic enquiry as well as in the interest of a scientific one.

- Shifting energy from sympathy to empathy through imagination and creative acts can help us reconsider the way we live, and how this impacted on climate change.

Bibliography

Aberdeen City Voice (2005) [online]. Aberdeen City's Community Planning [cited 1 December, 2010]. <http://www.communityplanningaberdeen.org.uk/nmsruntime/saveasdialog asp?lID=2630&sID=536>

The Angel That Stands by Me - Minnie Evans' paintings. (1983) VHS videotape. A film by Allie Light and Irving Saraf, San Francisco, California: Light-Saraf Films.

Banks *in* Goto R. (eds.) (2007b) *Interview with Geoff Banks* [online]. Eden 3, [cited 1 December, 2010]. < http://eden3.net/dialogue/2007/geoff-banks.pdf >

Brady, E. (2004) Imagination and the Aesthetic Appreciation of Nature. *in* Carlson, A. and Berleant, A. (eds.) (2004) *The aesthetics of Natural Environments*. Canada: Broadview Press, pp. 156-69.

Brady, E. (2003), *Aesthetics of the Natural Environment.* The University of Alabama Press, Tuscaloosa.

Brown *in* Goto, R. (2010), Discussion Around the Research Table (DART) II. [online]. [cited 22 Octorber, 2011] . <http://eden3.net/dialogue/2010/reiko-seminar.pdf>

Budd, M. (2002) *The Aesthetic Appreciation of Nature*. Oxford: Oxford University Press.

Chin, M. (1995) Mel Chin. *in* Oakes, B. (eds.) *Sculpting with the Environment*. New York: Van Nostrand Reinhold, pp.174-77.

Demarco, R. (2005) Beuys in Scotland: *Cencrastus*, (80).

Deukmejanm G. et al. (1990) *A Review of Redwood Harvesting Another Look* [online]. State of California The Resources Agency Department of Forestry and Fire Protection [cited 28 October 2011].
< http://www.fire.ca.gov/resource_mgt/downloads/forestry/RedwoodHarvesting1990.pdf>

Dewey, J. (1934). *Art as Experience*. New York: Perigee Book.

Dogane in Goto, R. and Collins, T. (2009) *Interview with Yuji Dogane* [online]. Eden 3 [cited 22 November, 2011]. <http://eden3.net/dialogue/2009-Hocking/dogane.pdf>

Frazer, J. (1994), *The Golden Bough*. New York: Oxford University Press. (Original work published 1890)

Freire, P. (1998) *Pedagogy of the oppressed*. New York: The Continuum Publishing Company. (Original work published 1972)

Goto, R. and Collins, T. (2010) *Eden 3* [online]. [cited 1 December, 2010]. < http://eden3.net>

Goto, R. and Collins, T. (2010) *Climate change: Seeing the invisible and hearing silence* [online]. Eden 3, [cited 22 October, 2011]. < http://eden3.net/dialogue/2010/IASH25sep10.pdf>

Goto, R. and Collins, T. (2010) *A Tree is a LIVING Things* [online]. Eden 3[cited 1 December, 2010]. < http://eden3.net/exhibitions/video/index.html >

Goto, R. and Collins, T. (2008a) *Interview with Helen Mayer Harrison and Newton Harrison,* [online]. Eden 3 [cited 1 December, 2010]. < http://eden3.net/dialogue/2008/harrisons.pdf >

Goto, R. and Collins, T. (2008b) *Ethics ecological art practice, 2008,* [online]. Eden 3 [cited 21 November, 2011]. < http://eden3.net/dialogue/2008/headlands/ethics-ecological-art-practice.pdf >

Goto, R. and Collins, T. (2008d) *Ethics in Ecological Art Practices – A Conversation and Dinner* [online]. Eden 3 [cited 1 December, 2010].
< http://eden3.net/dialogue/2008/headlands/ethics-ecological-art-practice.pdf>

Goto, R., *The Journey* (2007), in Douglas, A and Fremantle, C. (eds), *research papers / Leading through practice,* funded by AHRC (Creativity) Networking award (2007). an magazine, March.

Goto and Collins et al, (2005) *The Hillside Project* [online]. 3 Rivers 2nd Nature [cited 1 December, 2010]. < http://www.alleghenylandtrust.org/special_projects/hillsides/index.html>

Goto and Collins et al, (2005) *The River Dialogue - Watertrail* [online]. 3 Rivers 2nd Nature [cited 1 December, 2010]. < http://3r2n.collinsandgoto.com/revalued/water-trails/index.htm>

Goto and Collins et al, (2005) *The County Wide Design Plan* [online]. 3 Rivers 2nd Nature [cited 1 December, 2010]. < http://3r2n.collinsandgoto.com/revalued/ecology-recovery-allegheny-county/index.htm>

Goto, R. and Albert, J. (2004) *Urban Watersheds*: *Water Quality in Allegheny County, Pennsylvania* [online]. 3 Rivers 2nd Nature, [cited 15 November, 2011].
<http://3r2n.collinsandgoto.com/revalued/water-quality-allegheny-county/index.htm>

Goto and Collins et al. The Monongahela Conference I, (2003) [online]. Green Museum [cited 22 November, 2011]. <http://monconf.greenmuseum.org>

Goto, R., Lucas, V. and Pantazidou, M. (1999) *Urban Watersheds and Brownfields* [online]. 3 Rivers 2nd Nature, [cited 15 November, 2011]. < http://3r2n.collinsandgoto.com/revalued/urban-watersheds-brownfields/index.htm>

Goto and Collins, R (1992) *Aqua Pura*. California: the San Francisco Art Commission and the Water Department.

Harrison, H.M. and Harrison, N. (2008) *Public Culture and Sustainable Practices: Peninsula Europe from an ecodiversity perspective, posing questions to Complexity Scientists* [online]. Structure and Dynamics: eJournal of Anthropological and Related Sciences [cited 28 October 2011]. < http://escholarship.org/uc/item/9hj3s753>

Harrison, H, and Harrison N. (1995). *in* Oakes, B. (eds.) *Sculpting with the Environment*. New York: Van Nostrand Reinhold, pp.198-207.

Harrison, H.M. and Harrison, N. (1993) *The Serpentine Lattice*. Portland, Oregon: The Douglas M. Cooley Memorial Gallery.

Hearn, L. (1892) *In a Japanese Garden* [online]. In the Atlantic Monthly, July Volume 70, Issue 417, New York: Cornell University's Making of American website. [cited 19 November 2011].
<http://www.trussel.com/hearn/jgarden.htm>

Hocking *in* Goto, R. and Collins. T. (2008e) *Discussion of the scientific data from California with Professor Trevor Hocking* [online]. Eden 3 [cited 1 December, 2010]. < http://eden3.net/dialogue/2008/hocking/index.html>

House, S and Dingwall, C. (2003) A Nation of Planters: Introducing the new Trees, 1650 – 1900. in Smout, T.C. (eds.) *People and Woods in Scotland: A History*. Edinburgh: Edinburgh University Press.

Jacobs, J. (1992), *Systems of Survival*. New York: Vintage Books, A division of Random House, Inc.

Johnston *in* Goto R. (eds.) (2008b) *Interview with Eilidh Johnston – Greenspace Scotland* [online]. Eden 3, [cited 1 December 2010]. < http://eden3.net/dialogue/2008/Eilidh-johnston-kita.pdf>

Jordan III, W. (2003) *Sunflower Forest: Ecological Restoration and the New Communion with Nature.* Berkeley, Los Angeles, London: University of California Press.

Jordan III, W. (2000) Sunflower Forest. in Throop, W. (eds.) Environmental Restoration: Ethics, Theory and Practice. Amherst, NY: Humanity Books, an imprint of Prometheus Books, pp.205-20.

Julius Caesar, G. (1869) *Commentaries on the Gallic War*. (W.A. McDevitte and W.S. Bohn, trans.) New York: Harper & Brothers [on line] Corpus Scriptorum Latinorum [cited 1 December 2010]. < http://www.forumromanum.org/literature/caesar/gallic_e6.html#25>

Kester, G. (eds.) (2005) *Groundworks: Environmental Collaboration in Contemporary Art.* Pittsburgh, Pennsylvania: the Regina Gouger Miller Gallery, Carnegie Mellon University.

Kester, G. (2004), *Conversation Pieces: Community + Communication in Modern Art.* Berkeley and Los Angeles, California: University of California Press.

Kuoni, C., (1990) *Joseph Beuys in America.* New York: Four Walls Eight Windows.

Lakoff, G. and Johnson, M. (1999) *Philosophy in the flesh*. New York, Basic Books.

Lakoff, G. and Johnson, M. (1980) *Metaphors We Live By*. Chicago and London: The University of Chicago Press.

Laing, R. (2005) Use of Green Space. *Greenspace* Final Report, Zurich, Green space.

Leopold, A. (1949) *A Sand County Almanac and Sketches Here and There*. London, Oxford, NewYork: Oxford university Press.

Leopold, L. (1997) *Water, Rivers and Creeks*. California: University Science Books.

Lippard, L. (1983) *Overlay*. New York: Pantheon Books.

Marren, P. (1982), *A Natural History of Aberdeen.* Aberdeen, Scotland: Aberdeen People's Press.

McGregor *in* Goto R. (eds.) (2007a) *Interview with Duncan McGregor* [online]. Eden 3, [cited 1 December, 2010]. < http://eden3.net/dialogue/2007/duncan-mcgregor.pdf>

"Metaphor." *Merriam-Webster.com*. 2011. http://www.merriam-webster.com (29 November 2011)

Museum of Learning (no date) *Donar Oak* [online]. [cited 23November 2011]. <http://www.museumstuff.com/learn/topics/Donar_Oak>

Plein Air Public Dialogue at Peacock Visual Arts (2010) [cited 1 December 2010]. <http://eden3.net/dialogue/2010/plein-air.pdf>

Rodger, D., Stokes, J. and Ogilvie, J. (2003) *Heritage Tree of Scotland*. London: The Tree Council.

Royal Commission on the Ancient and Historical Monuments of Scotland and the National Archives of Scotland (no date) [online]. Scotlands Places[cited 1 December 2010]. <http://www.scotlandsplaces.gov.uk/search_item/index.php?service=RCAHMS&id=37143>

Scottish Natural Heritage (no date) *The potential for native woodland in Scotland* [online]. [cited 14 December 2010]. <http://www.snh.org.uk/publications/on-line/heritagemanagement/nativewoodland>

Schama, S. (2004) *Landscape & Memory*. London: Harper Perennial.

Smout, T.C. (eds.) (2003) *People and Woods in Scotland: A History*. Edinburgh: Edinburgh University Press.

Sonfist, A. (2004) *Nature The End of Art*. Florence, Italy: Gli Ori.

Sonfist, A., (2007) Public Monuments in *Artful Ecology*, Research Art, Nature and Environment (RANE), University College Falmouth [online]. [cited 20 November, 2008] <http://rane.falmouth.ac.uk/pdfs/artful_ecologies_papers.pdf>

Sonfist, A., (1978) *Alan Sonfist / Trees*. Washington, D.C: the Smithsonian Institution Press.

Sonfist, A. (1995) Alan Sonfist. *in* Oakes, B. (eds.) *Sculpting with the Environment*. New York: Van Nostrand Reinhold, pp.158-165.

Schön, D., (2002) Generative Metaphor: A perspective on problem-setting in social policy. *in* Ortony, A. (eds.) *Metaphor and Thought*. Cambridge, The Press Syndicate of the University of Cambridge. (Original work published in 1979.)

Spaid, S. and Lipton, A. (2002) *Ecovention: Current Art to Transform Ecologies*. The Cincinnati Art Center, Ecoartspace, and the Greenmuseum.org.

Stachelhaus, H. (1974) *Joseph Beuys*. New York, London, Paris: Abbeville Press Publishers.

Stanford Encyclopaedia of Philosophy (2008) *Empathy:* [online]. [cited 15 November 2011]. <http://plato.stanford.edu/entries/empathy>

Stein, E. (2002) *On the Problem of Empathy*. (W. Stein, trans.). Washington D.C.: ICS Publications. (Original work published 1917)

Stewart, M. (2003) Using the Woods, 1600 – 1850. *in* Smout, T.C. (eds.) *People and Woods in Scotland*. Edinburgh: Edinburgh University Press, pp.82-104.

Taki, K. (1997) *The Smile of Sisyphus*. Tokyo: Iwanami.

The Potential for native woodland in Scotland [online]. Natural Heritage [cited 1 December, 2010]. <http://www.snh.org.uk/publications/on-line/heritagemanagement/nativewoodland>

The Scottish Parliament, Forestry in Scotland (1999) [online]. [cited 11th September 2010]. < http://www.scottish.parliament.uk/business/research/pdf_subj_maps/smda-19.pdf>

Thoreau, H. (1960) *Walden*. Paul, S. (eds.). Cambridge, Massachusetts: Houghton Mifflin Company Riverside Editions. (Original work published1854)

Throop, W. (eds.) (2000*) Environmental Restoration: Ethics, Theory and Practice*. Humanity Books, Amherst, NY: an imprint of Prometheus Books.

Vallega-Neu, D. (2005), *The Bodily Dimension in Thinking*. New York: State University of New York Press.

Wikipedia (no date), Pacific Lumber Company [online]. [cited 14th December, 2010]. < http://en.wikipedia.org/wiki/Pacific_Lumber_Company>

Willisch, S. and Heimberg, B. (eds.) (2007) *Joseph Beuys The End of the 20th Century*. München: Dorner Institute.

Worrel, R. and Mackenzie, N. (2003) The Ecological Impact of Using the Woods. *in* Smout, T.C. (eds.) *People and Woods in Scotland*. Edinburgh: Edinburgh University Press, pp.195-213.

Appendix A 1: Previous work 1996 - 2005

Nine Mile Run

Nine Mile Run[82] was named after the last open stream in Pittsburgh. Its watershed/catchment basin covers five separate municipalities. The water ran through Frick Park, a wooded city park and drained into the Monongahela River, one of three rivers in Pittsburgh. There were sewage problems for the last hundred years.

Nine Mile Run was also the name of 240 acres of slag heaps next to the mouth of the river. The floodplain was dominated by 20 million tons of steel mill slag. Slag was a by-product of steel-making – very porous and highly alkaline. In 1993 the Pittsburgh City Planning proposed building over one thousand houses next to Squirrelhill, one of the richest neighbourhoods in the city, and burying the stream in a culvert in order to create a greenway.

In 1996 Collins and I met with John Stephen, a lawyer and environmental activist who introduced the stream of Nine Mile Run. Collins and I attended a city public presentation about the development. The discussions between the communities and city were about safety issues of the slag, questions about traffic increases, property values, and returning wildlife in the area. Shortly after the meeting Collins and I asked Robert Bingham, sculptor and professor at CMU to look at the stream that would be buried for constructing a greenway. Collins organised a meeting with John Rahaim, assistant director of the Pittsburgh City Planning Department and two future advisors: David Lewis, a noted architect and professor at CMU and Dr. Joel Tarr, environmental historian at CMU. The meeting opened up a new relationship between the city and University. In 1997 the research project was formed at the STUDIO for Creative Inquiry, Carnegie Mellon University, a research facility in the fine arts department. The team members became: Bingham, Stephen, Collins and Goto.

Three arguments were researched. First, burying the stream would not solve the water quality problem. Environmental restoration was happening in different parts of the U.S. and other countries. Would this be an opportunity to introduce new methods? Second, it could be another opportunity to explore sustainable ways of treating derelict land. The place had been abandoned for over forty years after the steel industry had moved to other places. People called the place a ‘dump’ that had no value. Even though there was a sense of recovery of nature and returning wildlife, nobody knew what kind of ecological value the place had. Third, if the communities were exposed to the environmental science and engineering experts’ knowledge about the stream and soil, how would the public discussion change?

The first year, Bingham obtained a trailer from CMU to create an onsite classroom. Every weekend the team spent time at the site talking to visitors or working on the displays such as roof top wheat garden and slag remediation. I started working with the Pittsburgh Children’s Museum, Valerie Lucas, an art teacher at the Homewood Montessori School and Dr. Marina Pantazidou, assistant professor of Civil Engineering to develop an education programme. It was also funded by the Pennsylvania Department of Education Office of Environment and Ecology. *Urban Watersheds and Brownfields* (Albert and Goto, 2004) was published as an education resource for 7th grade teachers and their students. It focused on learning about a local watershed, human impact, stream environment and soil remediation with plants. Lucas emphasised art to learn about our environment. We used artistic observation techniques such as painting and drawing to look at the natural elements closely.

[82] *Nine Mile Run* (1996-2000) Research project with Tim Collins, Bob Bingham, John Stephen, at STUDIO for Creative Inquiry, Carnegie Mellon University, Pittsburgh, Pennsylvania, U.S.A.

Collins and Stephen organised four community dialogues. The first focused on history and policy with J. Glenn Eugster, office of the administrator at Environmental Protection Agency. The second was about stream remediation with Dr. Ann Riley, director of the Waterway Restoration Institute and Western Regional Director of the California to Restore Urban Waters. The third dealt with soil remediation with John Oyler, of the Zink Corporation of America. The fourth was about sustainability with Dr. Jack Ahem, University of Massachusetts. Each event consisted of a site tour, presentations by national and local experts on the subject and a roundtable discussion. The document *Ample Opportunity: A Community Dialogue*, was published the following year.

The second year the team worked with scientists from the Carnegie Natural History Museum: Dr. Sue Thompson, botanist, and Dr. John Rawlins, entomologist. We also worked with Dr. David Dzomback, associate professor at the Department of Civil and Environment Engineering, CMU and Dr. Ken Tamminga, landscape architect, University of Pennsylvania. The project focused on finding the current ecological condition of the stream and slug area. It was funded by the Commonwealth of Pennsylvania Department of Conservation and Natural Resource, River Conservation Plan. The documentation was published as *Nine Mile Run Watershed and River Conservation Plan*. The team also worked with the Rocky Mountain Institute to organise a design charette. We chose the culvert opening at the Nine Mile Run stream and three upper watershed sites to explore the restoration possibilities with artists, engineers, landscape architects, architects, policy makers and community members. The documentation was titled *Re-Evaluating Stormwater: The Nine Mile Run Model for Restorative Redevelopment.* In the same year the project presented *The Nine Mile Run Project,* an installation in a group exhibition *Art and Nature*, curated by Tricia Watts, at the RICO Gallery, Santa Monica, California. The Nine Mile Run Greenway project received the Three Rivers Environmental Awards.

The third year, a set of conceptual plans was developed as the result of the community dialogues. *Nine Mile Run,* the *Final Dialogue,* an art exhibition at the Wood Street Gallery in Pittsburgh (1999) provided the setting for the final concept-design discussion with advisors and the community members. *Conversations in the Rust-Belt,* was another exhibition at the Miller Galleries, Carnegie Mellon University Pittsburgh, Pennsylvania (2000). While at the artist studio in Southside Pittsburgh I managed a series of experimental slag-soil remediation works with John Buck, soil scientist, Civil & Environmental Consultants. This experiment was funded by the Pennsylvania Environmental Protection Agency. Collins and I used the protocol to build *Nine Mile Run and Slag Garden,* for *Ecovention*, a group exhibition curated by Sue Spaid and Amy Lipton, Contemporary Art Center, Cincinnati, Ohio (2002).

Finally, the three years of effort achieved fruition. The stream was not only saved from being put in a culvert, but our work also became the first environmental restoration project in the city. The fabrication of the concept plan was forwarded to the U.S. Army Corps of Engineers, who began a $6.2 million stream restoration brokered by Joan Blaustein at the City of Pittsburgh Office of City Planning (Collins, 2007, p.101). The final protocol of the slag remediation experiment was used for greening the slag heap. In 2001, the Nine Mile Run Watershed Association was established for sustaining the activities and reaching further out to the upper watershed communities.

3 Rivers 2nd Nature

We realized that Pittsburgh suffered from panoramic myopia. By this we meant there were spectacular views of 125 high hills and bridges, yet no one is really able to see what is really there. We see what we remember, and we assume that nothing is good along these rivers.

Collins, 2000

Pittsburgh is located at the confluence of the Allegheny Rivers and the Monongahela River that unite to form the Ohio River. In the late 1800s Andrew Carnegie started building large steel mills. Steel production reached its productivity climax in 1926. During that era, the air, the water and the earth were polluted by mills and city waste. Trees with broad leaves could not survive in the air pollution. The sky was dark even during the daytime; fish and waterfowl were missing from the rivers. This environmental and ecological destruction involved a tremendous amount of violence to all living beings. By the late 80s the steel industry declined and many large mills were closed. Coal was replaced by natural gas for household heating systems. Since then the environmental quality has become much better and wildlife has been coming back, but there are still many derelict land and acid mine drainage sites left in this region.

3 Rivers 2nd Nature (3R2N) focused on the recovery of the ecological system in Allegheny, Pennsylvania. The three rivers, streams, and 53 watersheds in the post-industrial public places were the subject of the 3R2N project. The funding from the Heinz Endowment supported our intent: 1) research current condition of the ecological systems, 2) create opportunities for communities to experience and understand the recovery nature and 3) open up the dialogue about the future relationship with the natural environment in the post industrial public places.

We also received funding from the Warhol Foundation, Pennsylvania Council on the Arts and Commonwealth of Pennsylvania. Between the 3rd year and final year we organised three art activities called the Monongahela Conferences. The conferences sought to understand the methods of the artists who had been working on environmental issues in relation to the ecological, social and political context.

The team members were: Collins - director, Goto - creative director, Noel Hefele, 3R2N Research Associate, who started as an art student six years earlier. This interdisciplinary project[83] was

---

83 The core team: Tim Collins- project director, Reiko Goto - creative director, Noel Hefele- Production Coordinator, Priya Krishna - Mapping Coordinator, Jonathan Kline - Planning Coordinator, Lena Andrews - GIS Consultant, Jessica Dunn - Botanist assistant, Cy Fox - Attorney, Land Use Policy, Susan Kalisz - Botanist, P.H.D., Kathy Knauer - 3RWW Project Manager, Mike Koryak – Limnologist, Roman Kyshakevuc - Geologist, P.H.D., Bill Luneburg - Attorney, Water Policy, Cliff McGill – Photographer, John Oduroe - Planning assistant, Henry Prellwitz - Geologist, P.H.D., Rose Riley - US Army Corps Engineers, Linda Stafford – Biologist, Joel Tarr - Historian Oversight, Kostoula Valliano - Conservation Planner, Landscape Ecology.

Institutional partners oversight committee: John Schombert - 3RWW Director, Jan Oliver - 3RWWW Deputy Dir., ALCOSAN Wet Weather Program Mgr, Wilder Bancroft - Chief of Water Quality, Allegheny County Health Department, Luis Rico Gutierrez - Chair Studio Steering Committee

Technical project advisors: John Arway - Pennsylvania Fish and Boat Commission, Don Berman - Municipal Consultant, James Davidson - County Public Health Lab Manager, David Dzombak - CMU, Dept of Civil and Environmental Engineering, Mary Kostalos - Chatham College, Dept. of Biology, Mike Lambert - Director of Three Rivers Rowing, Edward Muller - Univ. of Pitt, Dept of History, Beth O'Toole - Director of Pittsburgh Voyager, Tom Proach - DEP Water Management, Dan Sentz - Pittsburgh City Planning, Steve Tonsor - Univ. of Pittsburgh, Dept of Biology, Lisa Schroeder - River Life Task Force, Davitt Woodwell - Pennsylvania Environmental Council

Previous team members: Clover Bachman - 3r2n Editor, P.H.D. student, Maria Barron - GIS, Botany/Bank Data, Karen Brean and Associates - Public Outreach, Lauren Darby - Graphic Designer, Mike Leonard - Data Research Assistant, Ben Ledewitz - Web Developer, Beth McCartney - GIS Coordination, Lauren McEwen - Public Outreach, Suzy Meyer - Landscape Info-Architect, Shera Moxley – Historian, Ayat Osman - Environmental Research, Corey Owens - Research Assistant, Richard Pinkham - Rocky Mountain Institute Associate, Annette Romain - Research Assistant, René Serrano - GIS, Environmental Data, Hsi Shen - Research Assistant, John Stephen - Friends of the Riverfront, Sue Thompson - Botanist, P.H.D., Jon Toonkel - Watershed GIS, Anna Vtuloschkina - 3r2n Research Assistant, Gary Yakub - Microbiologist ALCOSAN

Project supporters: Jennifer Brodt – STUDIO for Creative Inquiry, Harry Geis - Environmental Health Tech, Matt Graham - Landbase Systems, Cindy Hasenjager - 3RWW Administration, Valerie Lucas - Art Teacher, Kristen Kurland - GIS Research Consultant, Ken Orie – Engineer, Tim Prevost - ALCOSAN Engineer, Camp Dresser Mckee, Kimball and Associates -Technical Oversight.

Exhibition advisors: Jeanne Pearlman - The Pittsburgh Foundation, Terry Smith - University of Pittsburgh, Kirk Savage - University of Pittsburgh, TomSokolowski - Director of the Warhol Museum.

Outreach advisors: Christine Brill - Ground Zero, Jen Novak - PA Environmental Council, Joan Barlow - Sustainable Pittsburgh, Sean Brady - Venture Outdoors, Marilyn Crouch Kraitchman - Vintage Environmentally Active Senior Initiative, Ron Gaydos - Allegheny County Economic Development, Roy Kraynyk - Allegheny Land Trust, Pat McElligot - Mon Valley Trail Council, Water Sadauskas – Citizen, Heather Sage - Penn Future, Cheryl Sears - McKeesport Neighborhood Initiative, Karl Thomas - Friends of the Riverfront, Jim Taylor - IKM Architects, Dennis Tubbs - Pa Fish and Boat Commission, Peter Wray - Sierra Club, Laura Zinski - Mon Valley Initiative.

comprised of artists, architects and historians from Carnegie Mellon University, as well as scientists and landscape architects from private practice. Scientists and engineers from 3 Rivers Wet Weather Inc, ALCOSAN, and the Allegheny County Health Department rounded out the team.

The research mainly consisted of aquatic studies, terrestrial studies and a mapping study using Geographical Information System (GIS). The project had a 16 foot jet motorboat for field work. Every summer for four years data was collected. Collins and Hefele initiated an aquatic study that consisted of chemical and biological water testing with Kathy Knauer, chemist, Michael Koryak, chief limnologist and Linda J. Stafford, Biologist, U.S. Army Corps of Engineers, Pittsburgh District. I initiated a terrestrial study with botanists, Dr. Susan Kalisz and Jessica Dunn, observing riparian plants; and geologists Dr. Henry Prellwitz and Dr. Roman Kyshakevuc observing bank conditions. I also spent time working with the scientists to organise the data with Access data base software. These data were then provided to GIS experts, Beth McCartney, Priya Krishna and Lena Andrews with the means to create maps that revealed ecological impacts in the region. The annual reports were written by the experts, mapped by the GIS experts, edited by Collins and proved by the advisors.

Year 1 focused on setting up the project, including the GIS and field study protocol. The field work was done in the Pittsburgh pool. Year 2 focused on the upper Monongahela River. We started working with two local environmental organisations: Friends of the Riverfront and Pennsylvania Environmental Council to hold community events called *River Dialogues*. Every event consisted of a boat tour, expert presentations and a discussion of the place.

Year 3 focused on the upper Allegheny River. Collins and I started planning the *Monongahela Conference*, which consisted of three art events. The first, Monongahela Conference, occurred in October 2003. We assembled 24 important artists and theorists[84] to talk about their methods: how they worked with environmental, social, political and economical issues with communities. The conference consisted of two public lectures and two community meetings that included a site tour in the Monongahela Valley over the three day period. This documentation was presented at the Greenmuseum website. The Monongahela Conference I was in the fall 2003.

Year 4 focused on the lower Ohio River. I also started working with JoAnn Albert, educator at Pittsburgh Voyager[85] developing an educational guide with curriculum materials[86] for 7-12th grade teachers and students. It focused on watersheds, water quality parameters and monitoring the watersheds. During the summer the Monongahela Conference II was held. This was a month-long art and design residency programme with 12 artists[87] in three communities in the Monongahela Valley. Seven artists who lived outside Pennsylvania were brought into the region to work alongside five artists living in the greater Pittsburgh region. This program would insert regional and national artists into challenging post-industrial communities. The project was described in the following terms, “The Monongahela Conference is based on the belief that art and creative vision have the power to affect traditional political procedures by welcoming the ideas and participation of every citizen.” Each project was occupied in a library, a storefront and a municipal office five days a week. The artists worked with the 3R2N research assistants consisted of college students who devoted their computer design and mapping skills, organising and helping the community events and the dialogue. On every Friday there was a project dinner followed by a public lecture and discussion about the issues the

---

[84] Artists: Jackie Brookner, Angelo Ciotti, Stacy Levy, Helen and Newton Harrison, Mark Dannenhauer, Erica Fielder, Tom and Connie Merriman, Ground Zero Action Network, A. Laurie Palmer, Stephanie Flom, PLATFORM of London, Ann Rosenthal, and Temporary Services. Theorists: Suzi Gablik, Nicola Kirkham, Grant Kester, Malcom Miles.

[85] Pittsburgh Voyager, currently named River Quest is an environmental education organization in Pittsburgh Pennsylvania. Their mission is giving hands on experience of the rivers to grade school students by setting boats as class rooms and lab.

[86] < http://3r2n.collinsandgoto.com/revalued/water-quality-allegheny-county/index.htm>

[87] Ala Plastica, Navjot Altaf, S.Lacy, S.L.Steinman and Y.Kobayashi, Park Fiction, Platform, Wochenklausur, Jackie Brookner, Ground Zero, H. and N. Harrison, W.Hood and A.DuSolier, T. and C. Merriman, A.Laurie Palmer, The Persephone Project, Ann Rosenthal, 3 Rivers 2nd Nature.

artists had become involved in. Municipal officials and citizens were always invited (and did attend) these events. The questions from many in these communities concerned how much time the artists would spend, and how serious their commitments would be. The artists from out of town created excitement, and the artists within the region gave the local citizens and leader confidence in the commitment that was brought to the work.

Year 5 intended to finalise the research and present the studies to the local environmental organisations. *The Hillside Project* (Goto and Collins et al., 2005.) has resulted in changes to the City of Pittsburgh Zoning code, and was the basis for the development of a new city park in relation to the green spaces and geological facts. *The River Dialogue - Watertrail* (Goto and Collins et al., 2005.) is a documentation of all the community events. It became a tool for nonprofit advocacies that would carry on the missions of protecting nature and enhancing outdoor recreations for citizens. Friends of the Riverfront and Pennsylvania Environmental Council intended to curry the documents to develop projects from the concept plans. *The County Wide Design Plan* (Goto and Collins et al., 2005.) was a study that was intended to define nature and post-industrial public space. It was a planning and policy-oriented dialogue at the end of the 3R2N project. The project produced 23 different reports all together that were being applied by others to produce change in the region.

The *Groundworks* [88] exhibition finalized 3R2N as an art project. It was built upon two events: the Monongahela Conferences I and the Monongahela Conference II. It had local, social, environmental relevance and, in our eyes, international consequence. For the *Groundworks* exhibition 3R2N decided to use a sand mandala, the Tibetan Buddhist monks' teaching form. It was the image of the three rivers and recovering ecosystem in the area. This mandala supported a final meditation about place, history, community and the relationship between nature and culture. Each colour of the sand represented rivers, streams, flood-plains, watersheds and forests along the rivers. The audience asked the meaning of the colours and told us where they lived and what they understood about the place. I talk about the exhibition further in the section of Grant Kester.

[88] *Groundworks*, (2005) curated by Grant Kester, the final exhibition and conference of 3 Rivers 2nd Nature, Miller Gallery, Carnegie Mellon, Pennsylvania.

Appendix A 2: Journey

Next article is a memory of *Nine Mile Run* project that was edited by Professor Anne Douglas and Chris Fremantle, and published as *Research papers / Leading through practice,* on an magazine, in March, 2007.

Journey

A leader is best
When people barely know that he(she) exists,
Not so good when people obey and acclaim him (her).
'Fail to honor people, They fail to honor you';
But of a good leader, who talks little,
When his (her) work is done, his (her) aim fulfilled,
They will all say, "We did this ourselves."

Lao Tzu Quoted in J. Jacobs[89], 1992, p.125.

I can't really talk about leadership, I can talk about change. I can talk about what it means to do things ourselves. My partner and I lived in Pittsburgh Pennsylvania between 1994 and 2005. We focused on art, ecology and environmental projects as artists and researchers at Carnegie Mellon University. Nearby there was a stream called Nine Mile Run that had been suffering from human impact for over one hundred years. It runs through a major natural park in the City. Residents had been complaining about leaking sewers, horrible smells and posted warning signs that indicated the water was unsafe for recreational use. City officials made a plan to put that stream in a pipe and bury it. When I went to see the stream for the first time, I did not see the fish in the water. But I did see a newly emerged Tiger Swallowtail butterfly flying along the stream, and my partner saw deer tracks in the wet mud. We saw wild ducks in a pool. If that stream were buried it would be hard to bring it back to any sort of original condition. I asked myself how artists might help change this.

We met many people who had worked on the stream in the past. Dr. Mary Kostalos taught us about water chemistry and its relationship to the life in the stream. She introduced us to her mentor, Dr. Jan Sykora, who in turn introduced us to Michael Koryak. These scientists guided us to understand that water was not only for human beings but also other creatures as well. That stream had a human family that had cared for it and studied it for years. Yet that stream was to be buried.

One snowy morning Dr. Sykora, who was a biology professor at the University of Pittsburgh, took us to a natural park. There was a small clean spring in the park that fed into Nine Mile Run. He showed us how to flip rocks in the shallow water, and examine them for life. We found small translucent shrimp like creatures, wiggling under the rocks. He explained to us they were gammerus (*Hyalella azteca*), crustaceans, small creatures that lived on the bottom of shallow streams and ponds. They swim on their sides with seven pairs of legs. We flipped another rock, and found one of these small creatures holding the other's curved back. Another group of them seemed to be snuggling together in the cold water. Dr. Sykora said that they mate during winter. We asked what they would eat. He told us that gammerus ate dead leaves, twigs, and other organic matter. In the stream he picked up

[89] Jacobs, J. (1992), *Systems of Survival*. New York: Vintage Books, A division of Random House, Inc.

something and put it in my hand. It seemed to be a dead leaf. I spread out the leaf on my hand. I found it was not an ordinary leaf, but an example of the finest natural lace, it had been made by these bottom dwellers. None of the veins were broken. Dr. Sykora replaced the creatures we had collected very carefully back into the water. He told us these small creatures were not only an indicator of good water quality, but that they keep their living environment healthy.

Gammerus is a small part of the chain of organisms that make up stream ecology. It is easy to say we are all connected. But it is hard to feel how we are connected. I became connected to that place through my friends and their relationships with small creatures. It is naive to say that I wanted to save them and their stream. I could not stop imagining the scenes of the little creatures cleaning up their living place, creating beautiful objects, and then being lost downstream in the rushing waters of Nine Mile Run during storm events. If I collected those lacy leaves, framed and presented them in a gallery, some people might see them as an art object. It was not the object that was important. What struck me was the way the object represented the story of its makers and their homes. But to access that story you would need to have had the experience that I had with my friends and the little creatures; of water, air, light, trees, shrubs, rocks, mud, fish, salamanders, birds, deer, and raccoons. There was a spectrum of topography, life forms, sounds and seasonal changes. These were all elements of that environment. The aesthetic was embedded in the experience that my partner and I had on the snowy morning with the scientist. The story of the gammerus would end if the relationship between the springs and a healthy stream was permanently lost. I wondered if a new story was possible; how people might intervene in that environment.

Change is never certain. People are not comfortable when they do something new. Even when there is a successful example in front of them, people often say, "Yes, but this region is different. We don't do things that way here." Creating change is like going through an unknown forest with a blindfold on. People are afraid of getting lost, or falling and being hurt, or maybe they fear being left behind.

I am in a forest with many people. We are moving in a consistent direction, led by someone but there is no way for me to see the trail in front of us. I feel the warmness of someone's hand in my own hand and the kindness of someone's voice who occasionally guides us. I hear the sounds of the forest and the breathing and talking of people I care about. These guides are like my friends in Pittsburgh; each of them showed me more and more of that place where the little creatures lived. After the experience even though I am not an expert, my values have changed, I care deeply. I am amongst others who have also learned; we can share this with other people who come later. We are all moving through the world, and on some level we are all blind. At the end of the exploration can we tell who the leader was? Is it important? Once people reach the end of the forest, some people go into another new forest, and others might stay to tell the story of what we have all accomplished together.

APPENDIX A3

The Serpentine Lattice
by Helen Mayer Harrison and Newton Harrison

FROM SOUTHERN ALASKA
TO NORTHERN CALIFORNIA
NORTH AMERICA'S LAST GREAT TEMPERATE RAIN
FOREST IS DYING
EVERYBODY KNOWS THERE'S LESS THAN 10%
OF THE OLD GROWTH LEFT
BETWEEN SAN FRANCISCO AND VANCOUVER ISLAND
PERHAPS 40% IN BRITISH COLUMBIA
AND NOBODY CAN ARGUE ABOUT ALASKA

BY NOW
EVERYBODY KNOWS THAT A TEE FARM IS NOT A FOREST
THAT IS
EVERYBODY KNOWS
WHO THINKS ABOUT SUCH THINGS

AND EVERYBODY KNOWS
THAT THE DUGLAS FIR
CANNOT GROW IN ITS OWN SHADE
ALTHOUGH IT MAY LIVE A THOUSAND YEARS
AND EXIST THREE TO FOUR HUNDRED MORE
AS A SNAG OR A NURSE LOG
AND EVERYBODY KNOWS THAT
THE WESTERN RED CEDAR IS AS STOUT
THOUGH NOT AS TALL
RESISTING DECAY
SOME SPECIMENS
LIVING MORE THAN TWELVE HUNDRED YEARS

AND THE WESTERN HEMLOCK
AS UNDERSTORY
COMPLETES ONE OF THE ARBOREAL TRIADS
FROM WHICH
THROUGH WHICH
IN AND ABOUT WHICH
UNDER WHICH
A WHOLE ECO-SYSTEM RESIDES
AND ONCE FLOURISHED

NOW THERE IS ENOUGH NEW INFORMATION ABOUT
AND ENOUGH OLD WISDOM AROUND
FOR ANYBODY WHO THINKS ABOUT THESE THINGS
TO KNOW THAT THE DEATH OF A GREAT FOREST
IS A GLOBAL TRAGEDY

THINKING ABOUT THIS FOREST
STRETCHING ALONG THE COAST
FROM THE WESTERN HEMLOCK OF SOUTHERN ALASKA
DOWNWARD THROUGH SITKA SPRUCE
WESTERN REDCEDAR
AND DOUGLAS FIR
TO NORTHERN CLIFORNIA
WHERE THE COAST REDWOOD CARRY ON
KNOWING THAT EMBEDDED
IN THIS TERRAIN
THIS ONCE GREAT

PACIFIC COASTAL FOG FOREST
IS THE WHOLE NORTH AMERICAN
RAIN FOREST
THEN
WHO CAN SERIOUSLY VALUE
ITS TOTAL DESTRUCTION

WE
BEING GRATEFUL
FOR THE OPPORTUNITY TO JOIN THE PERILOUS
CONVERSATION
WHERE SOMEBODY SAID
HOW WILL YOU CROSS STATE BORDERS
WHEN THE LAWS ARE DIFFERENT
AND NATIONAL BORDERS
WHERE THEY ARE EVEN MORE DIVERSE

AND SOMEBODY SAID
IN PARTS OF CANADA THE CLEAR CUTTING IS FAR WORTH
AND SOMEBODY SAID
IT'S TOO LATE ANYWAY
THERE'S NOT ENOUGH LEFT
AND SOMEBODY SAID
WHAT WILL YOU DO ABOUT THE CASH FLOW FROM JAPAN
AND WHAT WILL YOU DO ABOUT JOBS

AND SOMEBODY SAID
SURELY YOU WILL CONSIDER ALL POINTS OF VIEW
AND SOMEBODY SAID
IN ONE WAY OR ANOTHER
YOU CAN'T DO THIS BECAUSE OF THAT
OR THAT BECAUSE OF THIS

WE
BEING GRATEFUL
FOR THE INVITATION TO JOIN THIS PERILOUS
CONVERSATION
BEGAN TO IMAGINE AN ACT OF RESTITUTION
YOU SEEING A SERPENTINE
I SEEING A LATTICE
WE BEGINNING TO IMAGINE NORTH/SOUTH CONTINUITIES
FROM YUKUTA BAY
TO SAN FRANCISCO
CONTINUITIES THAT WOULD BESPEAK
THE ECO-POETICS OF THE WHOLE

ONCE INTERRUPTIONS IN THE FOREST CANOPY
WERE ANOMALIES
NOW SUCH INTERRUPTIONS
AS CLEAR CUTS
AND TREE FARMS
AND ROADS
AND OTHER ARTIFACT CANOPIES OF OLD GROWTH
HAVE BECOME THE ANOMALIES
WITHIN THE MANAGED FOREST
AN UNFORTUNATE REVERSAL OF GROUND

NOW LOOKING AT OLD GROWTH REMAINING
LOOKING AT OLD GROWTH REMAINING
WONDERING ABOUT A MATRIX
IN WHICH TO INSERT A NEW VISION
SUDDENLY
YOU SAID A LATTICE
AND I SAID A SERPENTINE
AND YOU SAID NETWORKING THE WATERSHEDS
AND I
I SAID A GAME OF GO

IMAGINE THE SERPENTINE FORM
OF THE CREST OF THE COASTAL MOUNTAINS
IMAGINE THE SERPENTINE FORM OF THE PACIFIC COAST
IMAGINE SOME OF THE RIVERS
REALLY WATERSHED ENSEMBLES
EXTENDING THE SERPENTINES
AS NEARLY LEAF SHAPED RUNGS
OR CROSS MEMBERS OF THE LATTICE

THEN
WITHIN THIS LATTICE COULD BEGIN
THE RESTORATION OF THE MORE PRISTINE
ENVIRONMENTS
BY LEAVING THEM ALONE
BY ENGAGING IN MORE ACTIVE RESTORATION
ONLY
WHERE CLEAR CUTTING HAD BEEN MOST SEVERE
BY CLOSING OFF ENTRY ROADS
WHEN FINISHED

A WILLFUL GETTING OUT OF THE WAY
A FELICITOUS WITHDRAWAL

THEN
WITHIN THIS LATTICE
THE OPENING UP OF DENSE MONOCULTURE
COULD BEGIN
BY ASSISTING THE MIGRATION
OF SPECIES THAT ONCE FLOURISHED
AND REINTRODUCING SPECIES
THAT ARE NO LONGER PRESENT

THEN
WITHIN THIS LATTICE
SILVICULTURE
AS WELL AS CITIES
AND FARMS
AND ROADS
AND OTHER AMENITIES
COULD EXIST
IN THE AREAS BETWEEN THE RESTORED CROSS
MEMBERS

THEN
WITHIN THESE CROSS MEMBERS
A MINIMALLY MITIGATED ENVIRONMENT
MOVING TOWARDS THE PRISTINE
WOULD EXIST AND COULD FLOURISH
AND EXPAND

THEN
A NEW REVERSAL OF GROUND COMES INTO BEING
WHERE HUMAN ACTIVITY BECOMES A FIGURE
WITHIN AND ECOLOGICAL FIELD
AS SIMULTANEOUSLY THE ECOLOGY CEASES BEING
AN EVER SHRINKING FIGURE
WITHIN THE FIELD OF HUMAN ACTIVITY

WE
BEING GRATEFUL
FOR THE INVITATION TO JOIN THIS PERILOUS
CONVERSATION
CONTINUE
THINKING ABOUT A NEW HISTORY
FOR THIS ONCE CONTINUOUS
ALTHOUGH CHANGING
REMAINDER
ON THE
NORTH AMERICA
COASTAL TEMPERATE RAIN FOREST

FOR INSTANCE
WHO WILL PAY THE LONG TERM COSTS
OF CHANGING WEATHER PATTERNS
AS THE MOISTURE RETAINING PROPERTIES
ON THE LARGER TREES
DISAPPEAR
AND THE CARBON SEQUESTERED BY THE GIANTS
IS RELEASED INTO THE ATMOSPHERE
AND THE OXYGEN REPLENISHING PROPERTIES
OF THE QUADRILLIONS OF LIVING NEEDLES
ARE SUBTRACTED
AND THE GRANDEUR
OF THE ANCIENT
FOREST SYSTEM OF THE GIANTS
DISAPPEARS

WHO WILL PAY THE COSTS
OF THE LOSS OF PLANTS AND HERBS
WHOSE MEDICAL VALUES
ARE AS YET UNKNOWN
AND THE PRICE
WHEN THE SEQUESTERING OF CARBON
BY
SUCCESSION ECOLOGIES
DIMINISHING
AND WHO WILL PAY THE COSTS
OF APPARENTLY UNSUPERVISED
AGGRESSIVE CLEAR CUTTING OF PRIVATE LANDS

AFTER ALL
THIS LONG TERM ENERGY DEBIT
COMES DUE
IN THE NEXT GENERATION

WITH THE TURNING OF TENS OF THOUSANDS OF SQUARE
MILES
OF BIOLOGICALLY PRODUCTIVE LANDS
INTO FUNCTIONAL DESERTS
AND THE ELIMINATION
OF PRODUCTIVE ECOSYSTEMS
FROM OVER ONE HUNDRED THOUSAND MILES
OF RIVER-STREAM HABITAT
AND THE WATER PURIFYING PROPERTIES
OF THE WETLANDS
DISAPPEAR

WHO WILL PAY THIS ECO-DEBIT
AND WHERE WILL WE FIND ECO-CREDITS
TO PUT AGAINST IT
AS ECOSYSTEMS SIMPLY
AND BECOME MINIMALLY PRODUCTIVE
AND THEREFORE
MINIMALLY SUPPORTIVE OF HUMAN
EXISTENCE

FOR INSTANCE
IF THE GROSS NATIONAL PRODUCT
IS 5.7 TRILLION DOLLARS
AND
PRODUCING THE GROSS NATIONAL PRODUCT
IS THE OUTCOME OF EXPLOITING
THE GROSS NATIONAL ECOSYSTEM
AND
THE GROSS NATIONAL ECOSYSTEM
IS NOT INFINITELY RENEWABLE
THEN
IT IS NOT DIFFICULT
TO IMAGINE THE GROSS NATIONAL PRODUCT
SHRINKING
IN CONCERT WITH AN OVEREXPLOITED
LESS PRODUCTIVE
GROSS NATIONAL ECOSYSTEM

HOWEVER
IF
AS A FORM OF RECYCLING
WE TAKE 1%
OF OUR GROSS NATIONAL PRODUCT
AND ESTABLISH
AND ECO-SECURITY SYSTEM
THEN
ROUGHLY 57 BILLION DOLLARS
BECOME AVAILABLE YEARLY
FOR RESTORATION/RECLAMATION

NOW
IF
10% OF THE PROPOSED ECO-SECURITY SYSTEM FUNDING
OR 5.7 BILLION DOLLARS YEARLY
COULD BE PUT AT THE DISPOSAL OF
\THE RAIN FOREST OF THE PACIFIC NORTHWEST
FOR A 25 YEAR PERIOD
THEN PERHAPS 140 BILLION DOLLARS
COULD BE MADE AVAILABLE
FOR THE REGENERATION OF
THESE FORESTS
RIVERS
WETLANDS
CREATING JOB OPPORTUNITIES
FAR IN EXCESS

OF THOSE THAT WOULD BE LOST
BY LIMITING LUMBERING

THEN
GROUND WOULD BE REVERSED
SO THAT
THE ECOSYSTEM
BECOMES THE FIELD
AND HUMAN USE
THE FIGURE WITHIN IT
THEN
THE GROSS NATIONAL ECOSYSTEM
WOULD TALE ITS PLACE
PRIVILEGED
APPROPRIATELY
AS THE FIELD WITHIN WHICH
THE POLITICAL SYSTEMS
SOCIAL SYSTEMS
AND
BUSINESS SYSTEMS
THAT COMPRISE
OUR ECO-CULTURAL ENTITY
CAN EXIST

"Somebody said…"

HE WAS AN ECOLOGIST
HE DEVISED A PLAN
BASED ON THE UTTER URGENCY
OF THE MOMENT
HE SAID
(ALTHOUGH NOT IN THIS WAY)
LET ALL THE LAST REMAINING
PRISTINE AREAS BE PRESERVED
LET ALL THE REMAINING
PRISTINE AREAS BE SURROUNDED
BY MANAGED BUTS STILL ECOLOGICALLY
DIVERSE FORESTS
AS TRANSITION
BEFORE THE MORE URBAN ACTIVITIES
TAKE OVER
HE SAID
(ALTHOUGH NOT IN THIS WAY)
THAT THE PACIFIC COASTAL RAIN FOREST
MIGHT NOT SURVIVAL AT ALL
UNLESS AT LEAST A QUARTER OF THE HABITAT
WERE MADE ECOLOGICALLY VIABLE
AND TREE FARMING PRACTICES WERE
CHANGED DRASTICALLY

HE WAS A FORESTER
PARTICULARLY INTERESTED
IN OLDER STANDS OF MONOCULTURE
AND THE POSSIBILITY OF SYLVA CULTURE
HE SAID THAT IT WAS POSSIBLE
AND CERTAINLY VALUABLE
TO ESTABLISH ECOLOGICAL DIVERSITY
IN PLANTED FORESTS
THAT NOW
CONSISTED OF ONLY A SINGLE SPECIES
HE SAID
HE BELIEVED THAT MONOCULTURE AREAS
COULD BE BROUGHT
INTO A STATE OF GREATER DIVERSITY
BY OPENING THE GROUND TO THE SKY
THINNING PARTICULARLY DENSE GROWTH
AND
RE-INTRODUCING MISSING SPECIES
HE SAID
THIS MIGHT TAKE SOME YEARS
I SAID WE TOO WERE INTERESTED
IN SIMILAR THINGS
WE CALL THIS BEHAVIOUR
ASSESSING THE MIGRATION
WE AGREED TO MEET AGAIN

HE WAS A GEOGRAPHER
HE SAID
DIFFERENT FEATURES OF THE LANDSCAPE
SHOULD BE MAPPED AT DIFFERENT SCALES
HE SAID
EVERY PLACE HAS ITS OWN SET OF RULES
THEREFORE
THERE IS NO HIERARCHICAL RULE SET
THAT GOVERNS ALL TOPOLOGY
HE SAID
HE AND HIS COLLEAGUES
WERE RE-MAPPING
CONTINENTAL NORTH AMERICA
HE SAID
SOMETIMES MAPS OF THIS KIND
REVEAL ECOLOGICAL ZONES
THAT
HAVE LITTLE TO DO
WITH WATERSHEDS
AND MORE TO DO WITH SOIL FORMATION
AND WHILE SOME BOUNDARIES ARE SHARP
SOME ARE BROAD AND FUZZY
I SAID I WAS INTERESTED
IN BOUNDARY RELATIONSHIPS
WE AGREED
TO CONTINUE THE CONVERSATION

HE WAS A SCIENTIST
HE HAD MADE A PHOTOGRAPHIC ARCHIVE OF MUCH OF THE PACIFIC
NORTH WEST
OBVIOUSLY INFORMED
BY A DEEP UNDERSTANDING
OF THE ECOLOGICAL PROCESS AT WORK
IN THE COASTAL RAIN FOREST
AT ALL SCALES
HE WAS ALSO
OBVIOUSLY INFORMED ABOUT THE EFFECT
LUMBERING WAS HAVING
ON THE OVERALL COASTAL ECOSYSTEM
HE SHOWED US ARRAY AFTER ARRAY
OF CLEAR CUTS
THEN PRISTINE FOREST
I SAID
THIS ARCHIVE HAS A VOICE OF ITS OWN
YOU SAID
THIS WORK HAS POLITICAL IMPLICATIONS
I SAID
THIS IS A NARRATIVE
WITH THE RECENT ECO POLITICAL HISTORY
OF THE PACIFIC NORTH WEST
EMBEDDED WITHIN IT
WE BEGAN WORKING TOGETHER IMMEDIATELY

HE HAD BEEN A LUMBER MAN ALL HIS LIFE
THEN
HE BEGAN TO WORK TO SAVE THE FOREST
EXCEPT
HE SAID
THERE WERE NO REAL FORESTS ANYMORE
HE SHOWED US TREES SO LARGE
THAT ONLY ONE
COULD FIT ON A RAILROAD CAR
HE SAID
THIEVES HAD STOLEN
ALL OF OUR FORESTS
AND SHOWED US
HISTORICAL RESEARCH
DOCUMENTING THIS THIEVING
HE SAID
WHAT THEY WERE CUTTING TODAY
WAS JUST LITTLE PECKER POLES
I SAID
WOODPECKER POLES
HE LAUGHED
WE SAID WE WERE STRANGERS
BUT THAT IT APPEARED TO US
THAT THE RAIN FOREST WAS DYING
HE ALLOWED THAT
IT WAS DEAD ALREADY

SHE WAS AN ECOLOGIST
WHO BEGAN TO WORK WITH US
SETTING UP THE LARGE MAP
AND RESEARCHING
A LARGE ENSEMBLE OF INFORMATION
I SAID
WE WISHED TO WORK
WITH WATERSHED RECLAMATION
YOU SAID
YES NETWORKING THE WATERSHED
FROM NORTHERN CALIFORNIA
TO SOUTHERN ALASKA
SHE SAID
HOW WILL YOU KNOW
WHICH ONES TO RESTORE
AND HOW WILL YOU PROPOSE
TO CONNECT THEN
SHE SAID
DO YOU UNDERSTAND THE FOREST TYPE
FOR ALTHOUGH THE TOTAL CANOPY
WAS ONCE CONSTANT
THE FOREST VARIED FROM
REDWOOD IN THE SOUTH
THROUGH HEMLOCK AND DOUGLAS FIR
RED CEDAR AND THEN SITAKA SPRUCE
TO HEMLOCK AND SILVER FIR
UP NORTH
AND
DO YOU KNOW WHO IS THINKING
ABOUT BIO-DIVERSITY
AND HAVE YOU READ THE NEW WORK ON ECOLOGICAL HOTSPOTS
AND DO YOU WISH TO PAY ATTENTION
TO PEOPLE WHO ARE ATTEMPTING
TO ESTABLISH DIVERSITY IN FOREST MONOCULTURE
AND
ARE YOU INTERESTED
IN NEW NON-HIERARCHICAL FORMS OF MAPPING
I SAID
YES

IN ALL CASES
BUT HOW MANY SQUARE MILES ARE THERE
IN THE COSTAL RAIN FOREST
AND
YOU SAID
HOW MANY RIVERS
AND HOW MANY MILES OF RIVERS
AND ISLAND
HOW MUCH IS THE OLD GROWTH WORTH
IN THE MARKET PLACE
SO WE BEGAN A LONG CONVERSATION
ABOUT THIS AND THAT

THEY WERE FROM AN ORGANIZATION
THAT WORKED WITH CONSERVATION
HE SAID
HE FOUND OUR IDEAS INTERESTING
BUT WHY DID WE STOP AT VANCOUVER ISLAND
HIS COLLEAGUE SAID
WE ARE ACTUALLY WORKING
WITH PRISTINE AND NEAR PRISTINE WATERSHEDS
IN BRITISH COLUMBIA
THEY GAVE US THEIR LITERATURE
AND WE GAVE THEM SOME OF OURS
I SAID
WHY NOT EXTEND
OUR MAP FROM VANCOUVER ISLAND
TO SOUTHERN ALASKA
YOU SAID
WHY NOT EXTEND
OUR MAP
BELOW THE BAY OF SAN FRANCISCO
TO AT LEAST SALINAS
AND
ISLAND
LET'S DO THE FORMER
BUT NOT THE LATTER

"It is known/It is not known…"

IT IS KNOWN
THAT A TREE FARM IS NOT A FOREST.

IT IS KNOWN
THAT THE ONLY ANIMALS THAT CHOOSE TO LIVE IN
BOARD FEET
ARE HUMANS
AND TERMITES.

IT IS NOT KNOWN
HOW MANY BOARD FEET COULD BE MILED
FROM THE TRUNKS
OF THE COASTAL TEMPERATE RAINFOREST.

IT IS NOT KNOWN
HOW MANY DOLLARS THESE BOARD FEET COULD BE TRADED FOR.

IT IS KNOWN
THAT SOME RAINFOREST SPECIES NEED LARGE
FOREST AREAS
TO LIVE IN.

IT IS KNOWN
THAT OTHER RAINFOREST SPECIES NEED PARTICULAR
FORESTS
AT PARTICULAR STAGES OF DEVELOPMENT
OR PARTICULAR PLACES WITHIN A FOREST

IT IS KNOWN
THAT SMALL FOREST FRAGMENTS
LOSE THEIR VIABILITY AND BEHAVE AS FOREST EDGES
EVEN WHEN THEY ARE IN THE MIDDLE

IT IS NOT KNOWN
HOW MUCH REINFOREST MUST SURVIVE
OR WHAT SUCCESSIONAL STAGES IT MUST HOLD OR WHAT
WATERSHEDS MUST HOLD IT FOR THERE TO BE COASTAL
TEMPERATE RAINFOREST
AT ALL.

IT IS KNOWN
THAT PARTS OF THE COASTAL TEMPERATE
RAINFOREST
HAVE BEEN CONVERTED TO
TREE FARMS
CROP FARMS
PASTURE LANDS
AND PAVEMENT.

IT IS KNOWN
HOW MUCH OF THE COASTAL TEMPERATE
RAINFOREST
IS IN SOME STAGE OF NATURAL SUCCESSION.

IT IS NOT KNOWN
HOW MUCH THE ORIGINAL COASTAL TEMPERATE
RAINFOREST
IS NOW A TREE FARM.

IT IS NOT KNOWN
HOW MANY OF THE
ORGANICAL WATER WAYS
THROUGH THE FOREST STILL EXIST.

IT IS NOT KNOWN
HOW MANY OF THESE WATER WAYS HAVE BEEN CONTROLLED.

IT IS KNOWN THT
MANY OF THE ANCIENT WATER WAYS HAVE BEEN
DIVERTED
CHANNELIZED
AND DRIED UP.

IT IS KNOWN THAT
FIR THE LAST HUNDRED YEATS
WOODY DEBRIS
AN ESSENTIAL STRUCTURE FOR THE EOSYSTEM
HAS BEEN SYSTEMATICALLY REMOVED FROM THE RIVERS
TO IMPROVE NAVIGATION, FLOOD CONTROL AND DRAINAGE.

IT IS NOT KNOWN
WHAT ACTION MUST BE TAKEN
TO RESTORE POPULATIONS OF WILD FISH.

IT IS NOT KNOWN
WHAT ACTION MUST BE TAKEN
TO RESTORE POPULATIONS OF WILD BIRDS.

IT IS NOT KNOWN WHICH OF THE THOUSAND RIVERS ARE RESTOREABLE.

BUT
IT IS NOT EASY TO ASK WHICH
BECAUSE IT IS NOT KNOWN
WHAT RESTORABLE MEANS.

IT IS KNOWN
THAT WATHERSHEDS OF EVERY CONDITION
EXIST IN THE NORTH ANERICAN COSTAL TEMPERATE
RAINFOREST.

IT IS KNOWN THAT THE MOST PRISTINE WATEDES ARE IN THE FAR NORTH.

WE NO LONGER KNOW
THE NAME OD EVERY WATERSHED THAT HAS BEEN LOGGED
OR DAMMED
OR POLLUTED.

WE NO LONGER KNOW
THE NAMES OF THE WATERSHEDS THAT ARE STILL PRISTINE
OR UNINHABITED

IT IS KNOWN
THE SOME ACTION MUST BE TAKEN IN THE PLACE THAT WILD BIRDS AND WILD FISH LOVE FOR THEM TO SURVIVE.

IT ISKNOWN THAT
OFTENTIMES THE NECESSARY ACTION IS SIMPLY
NO ACTION AT ALL

IT IS KNOWN THAT
A TREE FARM IS NOT A FOREST.

IT IS KNOWN THAT
FALLEN TREES RETAIN MOISTURE FOR THE FOREST
DURING THE DRY SUMMER
MODERATING THE CLIMATE
AND NURSING THE CLIMATE
AND NURSING THE YOUNG TREE SHOOTS
THAT OTHERWISE WOULD DRY OUT.
THEY HOUSE THE FUNGI THAT TRANSLOCATE ELEMENTS
FROM THE FOREST FLOOR.

IT IS KNOWN THAT FALLEN TREES, IN EACH OF THE VARIOUS
STATE OF DICAY
THAT THEY UNDERGO
BEFORE THEY BECOME PNE WITH THE SOIL
HAVE MUCH TO CONTRIBUTE FOREST LIFE.
AT EACH STAGE THEY HOUSE A DIFFERENT GROUP OF
VERTEBRATES
AND INVERTEBRATE AND MICROSCOPIC LIFE.

IT IS KNOWN THAT
THE NORTHWEST CONIFER FORESTS
ARE MARVELOUSLY ADAPTED TO MILD WINTERS
AND DRY SUMMERS.
THE LONG CONUCAL SHAPED CROWNS OF THE TREES

MAXIMIZE THE ABSORPTION
OF OBLIQUE REFLECTED WINTER LIGHT.

IT IS KNOWN
THAT UNLIKE DECIDUOUS TREES
WHICH GO DORMANT OVER THE WINTER
THE EVERGREEN CONIEFERS MAY ACHIEVE
HALF OF THEIR GROWTH OVER THE WINTER.

IT IS KNOWN THAT
SOME FUNGI
ATTACH THEMESELVES TO DOUGLAS FAIR TREE ROOT
FINAMENTS
IN A SYMBIOTIC PROCESS
WHEREBY THE PROVIDE
NUTRIENTS ANDVITAMINS AND GROWTH REGULATORS TO THE
TREE.
THE TREE
IN TURN
SUPPLIES THE FUNGI WITH THE PRODUCTS OF
PHOTOSYNTHESIS.

IT IS KNOWN THAT
THE NORTHWEST COASTAL TEMPERATE RAINFOREST
WAS COMPOSED OF CONIFERS THAT
WERE THE LARGEST TREES ON THE EARTH.

IT IS KNOWN THAT
THE TRUNKS, BRANCHES AND FOLLAGE
OF COAST REDWOODS
WEIGH UP TO 1800 TONS PER ACRE
AND IN THE COAST RANGE
A MATURE FOREST WEIGHTS
FROM 330 TO 790 TONS PER ACRE
WHITE EASTERN TEMPERATE FORESTS
AND EVEN TROPICAL RAIN FORESTS
RARELY WEIGH MORE THAN 300 TOMS PER ACRE.

IT IS KNOWN THAT
SOME OF THESE CONIFERS CAN GROW AS HIGH
AS A FORTY STORY BUILDING
YET SEVERAL FROM SEEDS SO TINY
THAT SEVERAL HUNDRED
WEIGH LESS THAN AN OUNCE.

IT IS KNOWN THAT
CONVERSION OF FORESTS FROM VIRGIN TO NANAGED STATUS
REFUCES ROTATION AGES CENTURIES TO DECADES
AND CONSEQUENTLY BOTH THE AVERAGE SISZE AND WOOD
QUALITY
OF THE FORST IS REDUCED.

IT IS CLEAR THAT
IF
ECOSYSTEMS WERE PRIVILEGED EQUALLY
TO BUSINESS SYSTEMS
AND POLITICAL SYSTEMS
THEN MONEY WOULD BE MADE AVAILABLE
AND RESEARCH FUNDING WOULD BE MADE
AVAILABLE
IN THE MANNER
THAT SOCIETY ALWAYS RESERVES
FOR THE ENTITIES THAT IT VALUES.

IT IS KNOWN THAT
A TREE FARM IS NOT A FOREST.

APPENDIX A4

HELEN MAYER HARRISON AND NEWTON HARRISON
INTERVIEWED BY REIKO GOTO
8 MARCH 2008
NOVOTEL HOTEL, BRISTOL, ROOM 228, 4:00 PM TO 6:00 PM
Transcription by Uppercase Transcriptions

Part 1

Present: Helen Mayer Harrison
Newton Harrison
Reiko Goto

Reiko Goto: Helen and Newton, thank you very much for being with me today.

I have been thinking about your work in relation to my research question.

> *Is it possible to create change if people understand life as interdependent and interrelated with nature in our environments?*

My first question is:

> *What is most important in your work and art practice?*

Newton Harrison: There is nothing that is important in my work. Everything is equally important. I do not do 'most important'; rather, the work is designed in such a way that, first, one thing will assert itself, and then another, and then another, and then another – and that way layers come forth and therefore, at any given moment, something *else* may be important.

The problem with asking that question at all is that it is a bottom-line question. It is, "What is the bottom line?" and I tell you, we have none.

Helen Harrison: I am going [to answer] somewhat differently. What I think is important about our work …

Newton Harrison: Wait – she did not say "important". She said, "What is the most important?".

Helen Harrison: All right. The most important thing about our work is that it should resonate in the mind which is the thing that any good work of art does; and the importance of it is, you ask, "What makes a difference; can you change earlier?"

You cannot change people when you give them information. Information goes in the head and it stays there. Freud said you can only change behaviour when you have the 'a-hah!' sensation of something that has really struck you emotionally. The basic thing about our art is that it reaches people at a level deeper than just words passing through or images passing through. They are images and words that will resonate in the mind.

[11:24]

Newton Harrison: Moreover, we never try to convince anybody of anything. Why would we do that? Either the work has a [way of] us being part of the work, or it does not. I do not want to talk

anybody into anything. If you look at our work carefully, you would find that mostly it is a rumination – either Helen and I talk to each other or it is 'he said', 'she said'; or it is, as a group, we went to the Pennines and discussed, 'we saw this' and 'we saw that'.

We are not trying to change anybody from that – why would one want to do that? I think changing minds is a bad idea.

All through our experience with DEFRA (putting on this Greenhouse Britain exhibition), they wanted to know how many people's minds we changed; they wanted to know who our target audience was; they wanted to know what the key issue was. I find that an awful lot of thought in this country plays with that stuff. Our work is not about that at all.

You know that – what our work is about is like the Serpentine Lattice. It is, "Can it be we let the forest die like this? Who is looking after the rest?" "Ok, we will look after the rest."

Do you follow what I mean? It is nothing about changing minds; that is about statistics. That is the economists' way of justifying what they do. I am not into the justification business. The only time our work actually works on the ground is when it touches a moment of urgency in the culture itself and then we join that urgency, and we cannot tell what is going to happen in advance.

Helen Harrison: Something else happened in our work, and that is that a great deal of it did not happen immediately; it happens within ten years, or fifteen years – and that has to do with the work resonating in the mind. People hear it; it stays with them and, gradually, it begins to assume its own forms. In other words, they did not do *precisely* what we said, but they got the results we have asked for.

[14:13]

Newton Harrison: Let me tell you an outcome from this work. If you look at the major ecology magazines that come out, you will see a variation of this Serpentine Lattice. This is the icon of the Pacific Northwest. We invented this icon; nobody ever saw it before and now this has embedded in it the meaning of the Pacific Northwest and it is used all over. And they vary – for instance, up here they make it a little bigger because it is in Canada. They changed the icon to suit themselves. We were way ahead of ourselves for the Serpentine Lattice, but this became the warning signal for all. When was the last time you saw an icon work? We had not either. And it is from this icon that we began to invent the Dutch icon and this Peninsular Europe icon.

Reiko Goto:

> *How did you find the giant snake; and what did the snake tell you? [How did you find the Serpentine?]*

Newton Harrison: *[surprised]* The giant snake?

Reiko Goto: Serpentine.

Newton Harrison: Oh, this guy – how we found it?

Reiko Goto: *[laughing]* Yes, how did you find the giant serpentine; what does the serpentine tell you – something you had never experienced before?

[15:50]

Newton Harrison: But that is all in the work. It is all in the description, here. It is all in the Baile Oakes' book[90]. It is about seeing and scanning. Visual artists see and scan. When we look at the map, we said, "What is it we are seeing?" We are seeing a serpentine form. "What else are we seeing?" We are seeing the Serpentine re-mirror itself in the mountain ranges and in the ocean edge. "What connects the Serpentine?" The rivers.

Helen Harrison: They are the cross branches; they are like the steps in a ladder.

Newton Harrison: So the Serpentine Lattice comes from that observation. It is about …

Helen Harrison: …the mountains, the coast and then the rivers.

Newton Harrison: This is about seeing.

Helen Harrison: And the river valley.

Newton Harrison: And then this gives a voice to a form. There is a certain poetic redundancy that we work with; *all* artists work with – go and look at Michaelangelo; look at the grouping and clustering and the minute you have run out of one group, another group asserts itself. We learn from those people; that is why we work with this level of complexity; and that is why we say there is no 'bottom line'. What is the bottom line to Donatello's 'Magdalen'? There is no 'bottom line'! What is the most important thing about the 'Magdalen'? There is no most important thing! There is only about forty or fifty important things embedded in the layering and they jump out at you one after another as you see and experience it.

Reiko Goto: Ok.

How do you explain your work as art?

Newton Harrison: I don't! And I won't!

Helen Harrison: How what?

Newton Harrison: She wants to know how we explain our work as art. We don't. we take for granted that the work is art and that it speaks itself. No-one will ever get me to get up and say, 'My work is art because …".

I am willing to discuss with somebody the nature of art, but I am not willing to justify my own work. I mean, "Why are you a person, or why am I a person …" "Because …"

[18:27]

Reiko Goto:

What do you think about a recent socialist activity; Professor Wangari Maathai planted three million trees in Kenya? She received the Nobel Prize.

Newton Harrison: Yes, wasn't that marvellous?

Reiko Goto:

What I am asking is why your work is art and her work is something else?

[90] Oaks, B. (ed.) (1995) Sculpting with the Environment. Van Nostrand Reinhold, New York.

Helen Harrison: What she did, was make an image of all those trees that really resonated in the mind. That is why I would say that.

Newton Harrison: But she does not claim it is art; neither do we.

Helen Harrison: No. We do not claim it is art.

Newton Harrison: Now, why don't we make that claim? Why isn't it art?

[Silence.]

Reiko Goto: Because … she wanted to plant trees and then that changed the economy, people's lives in Africa. That was her intention. She never intended to make art. But you are making art.

Newton Harrison: That is correct. We are story-tellers, and she is not. If you look at our work, we are part of a ten-thousand-year tradition of narration; of story-telling; and of metaphor-creation. Out of that comes art. In that case, we call for fifty thousand miles of trees to be replanted – if you look at the Serpentine Lattice.

She does not make that claim. Why should she? That is not what she was doing. I mean, look: two or three different wood companies cut down fifty thousand miles of trees – that is a heroic act. Why isn't that art? It is a real big act! You know, a lot of the development world thinks it is a marvellous thing they did. It is a great story!

Helen Harrison: No, they don't.

Newton Harrison: Yes, they do. But you see what I am saying?

Helen Harrison: It is good business – not a great story.

Newton Harrison: Yes, it is good business, it is marvellous, it is terrific, it is good for the economy – never mind that eighty thousand miles of streams are screwed up – but, what the hell. Do you see what I am saying?

Reiko Goto: I think I understand.

Newton Harrison: Somebody has got you worried about how you define art. I want to tell you one story about how you define art. It is 1978; I take a class at UCST of very bright students – they are in their third year. We are going to spend ten weeks trying to define art. We spend the ten weeks and we cannot define it. End of story. I stopped. I can do what I cannot define.

Helen Harrison: For a long time people said, "Why is this art?" and we could never explain it satisfactorily earlier on, "why was this art; why was this art?"

Newton Harrison: "Why was the Fish Farm art? Why was all those works we did – why was the Lagoon Cycle …" Nobody had trouble with the Lagoon Cycle. Maybe they could figure out that was art.

Helen Harrison: Yes. By the time of the Lagoon Cycle people began to stop questioning. Now, they still do sometimes. We do not bother. We are not justifying what we do. What we do justifies itself, and if it does not – then it does not. It is a question of a real indifference there. Either they can get it or they cannot.

Newton Harrison: We are not obliged to be self-explainers. There is something about what goes on in the culture that, as an artist, you somehow got to be a self-explainer. I assure you, you do not.

Reiko Goto: In this poem,

> *"Surely you will consider all points of view" and then somebody said, "In one way or another, you can't do this because of that; or that because of this." How do you divert an endless and pointless question like this?*

Newton Harrison: We ignore it, and we do an act of creativity that annihilates the questions.

Helen Harrison: You see – by saying it ourselves, right there, somebody said, "How can you do this?" People look at it and it looks awfully silly.

Newton Harrison: It is ironic

Helen Harrison: It is silly and it looks ironic, and people [touch] it!

[25:15]

Newton Harrison: Because you do not want to take it out of context. Look at the next few sentences. Go ahead, read the next few sentences.

Reiko Goto: WE BEING GREATFUL, FOR THE INVITATION TO JOIN THIS PERILOUS CONVERSATION BEGAN TO IMAGINE AND ACT OF RESTITUTION…

Newton Harrison: "So, you see, we answered it afterwards. We ignore it and do an act of creativity. Art is about acts of creativity. It is not about justifications. We take all that stuff; take a look at it; and dump it! And we dump it by a creative act – the poems.

[26:06]

Reiko Goto: How does the metaphor of the Serpentine Lattice work?

Helen Harrison: We believe that our art works a great deal through *[metaphor]* – that all work is based in metaphor.

Newton Harrison: All design is based on metaphor. What you do is, you take a look at the belief that drives a metaphor, and then you can take a look at the metaphor that designs cultural artefacts.

Helen Harrison: Our cultural behaviour, and then you see if there is some way that you can reverse it. When people see the flip, and the reverse, they understand.

Newton Harrison: Let me give you an example. Flood control is the destruction of rivers. That is a metaphor. Now, what is flood control? Generally speaking, flood control is dykes that hold the river from wrecking a town. Supposing you flip the metaphor – now watch: [flood control is the structure of rivers [telling] you how to design] *[flood control […] tells you how to design]*. You have to have dykes; the dykes are twice as wide as they are high; they are compacted earth; they need clay in them; and all kinds of stuff. You cannot have big trees on them because the roots will make [leaves] – and so on.

Helen Harrison: Flood control is also the destruction of flood plains. The doing away of flood plains because the flood plains are meant to be flooding.

Newton Harrison: And the destruction of riverine life – a lot of destruction in that metaphor. If you flip the metaphor, flood control is the spreading of waters – then you give me the twenty million dollars that you were going to put in the dykes; I will go and buy land above; and a whole load of design will happen which we call ecological design.

Helen Harrison: We will return the flood plain to the river. We will have removed …

Newton Harrison: She is not understanding how one got to begin at the beginning again.

Reiko Goto: Dykes are no metaphor – they are real structures!

Newton Harrison: Yes, they are a metaphor. I will tell you why. Metaphors become physical. It is *physical*. A car has a metaphor of transportation built in it. The metaphors force the design. The design of the dyke begins with a metaphor. The metaphor says, "The river is destroying the town. I will make the dyke."

Helen Harrison: "I will control the river." "I will make the dyke to control the river."

Newton Harrison: All those metaphors go into under 'live design'. If we say, "We take that metaphor and yank it apart and put it together differently", the metaphor is formed; it is a mental form. Therefore we say, "Give us the money you would spend on dykes, and we will spend the money spreading the water." If we spread the water, we make a new flood plain; if we spread the water, we make a new eco-system; if we spread the water we benefit the town, the flood plain, and the river.

Helen Harrison: In other words, we have prevented a flood simply by replacing the reason for a flood. The reason for a flood is that water is going in its natural path.

Newton Harrison: The metaphor is not a literary device.

Helen Harrison: A metaphor *is* a literary device; a metaphor, *also*, is a very real thing.

Newton Harrison: By that I mean, if you read George Lakoff's[91] work (he is a dear friend of ours) – he proves that you cannot think in the absence of metaphor; you cannot form a complex thought. Metaphorical thinking, although denied (especially *[by]* the Post-Modernists – they hated metaphor; they do not like allegory either; at least some of the ones I knew), they saw things as literary; we see them as material and mentally physical. They are *real*, and they shape the reality. They shape the cultural landscape; they are part of the story of the shaping of the cultural landscape. You can take the story of the forming of the cultural landscape and veer it another direction. That is what the Serpentine Lattice tries to do. It does not succeed.

Helen Harrison: Yes. That is one of the works that became very well-known and continues, still, to be in demand.

Newton Harrison: We may have succeeded because, in the beginning, people were not working with watersheds. After the Serpentine Lattice, they started to work in the Pacific Northwest with watersheds. Then, about five years after that, they started to group watersheds. I think that we influenced the discourse. It is not possible to tell how much. And what do we care?

The issue is engagement with the formation of the cultural landscape; being self-empowered, sufficiently, to act; then taking action; and then expecting consequences.

Helen Harrison: Bust.

Reiko Goto: Small question …

Newton Harrison: Good.

---

[91] Lakoff, G., sociolinguist, a professor of cognitive linguistics at the University of California Berkeley.

[32:37]

Reiko Goto:

> *I have noticed that you worked with over fifty people in this project – the Serpentine Lattice – maybe more, probably. Who are the most influential person or people; and why? If I need to ask about the experience of the project, who would be the best person to talk to?*

Newton Harrison: Susan Fillin-Yeh, the author. You will find her on the web.

Helen Harrison: She is the woman who was the director of the museum, and she was the woman who asked us to come, and she is the woman who wrote up a whole essay on our work in general in the article there. Also, she was the one who really encouraged the work.

Newton Harrison: When we said, "Look, we are going to take on all these thousands of square miles", we expected to have to talk her into something. She said, "Go for it."

Helen Harrison: Yes. She was very helpful and a pleasure to work with.

Newton Harrison: Every time we needed a forester; or we needed a this; or we needed a that – she would go and hunt them down.

Helen Harrison: Yes, or she would find someone who would do it. She had an assistant.

[33:59]

Reiko Goto: How did you feel about these fifty people? Yesterday during the opening [at the Knowle West Media Centre in Bristol], I felt it was very welcoming and they are looking forward to seeing something very new. How did you feel about people? Do you remember?

Newton Harrison: How did I feel about that? Look. What happens is that, when you have a big vision like that … Lots of folk are really distressed by the terrible stuff that went on up there. So, to see a couple of folk like us come in and engage, is encouraging. We were helped as much as they could help us, as people, and we all had a good time together.

Helen Harrison: We shared common concerns. We would not have shared their concerns had we not been in the neighbourhood and spent time there and understood them – even though it was a short time.

Newton Harrison: You mean 'here'.

Helen Harrison: Yes, here. It was enough. How come? We were told by Tom Trevor of the Arnolfini that we should go to this place, and meet these people, and we should do our work with them.

Newton Harrison: And see what we could do with them. Tom happened to be right. Not everybody is right, you know.

Helen Harrison: We started talking. We told them something about what we did, and they told us something about what they were doing. Interestingly enough, there were only two men there. One was an elderly man who financed a great deal of things (including the Arnolfini), and the other was a young artist who was working with him. The rest were women. The whole thing about this place is, it is primarily women.

Newton Harrison: Yes, there were about thirty or forty powerful women (or twenty – whatever) and the whole community sit on their shoulders. It was very touching. It is very engaging.

Helen Harrison: We got along very well.

Newton Harrison: We really liked them. You cannot work unless you really like folk.

Helen Harrison: We cannot work with a place unless we can identify with it; unless we can feel for it; unless it affects us, emotionally. If it does not, then we do not do a work.

Newton Harrison: Maybe we should let you go back to your questions.

[36:53]

Reiko Goto:

What do you think about Joseph Beuys's '7000 Oaks'?

Helen Harrison: We were in Documenta when he did it.

Newton Harrison: When he initiated it.

Helen Harrison: Or just after – when they were putting it up.

Newton Harrison: I have to tell you one Documenta story. Our assistant went out and found one of the oaks that died, and we put it in our exhibition – in our Documenta piece. Reverence is not the name of this game.

Reiko Goto: Beside the theories, I am working on four case studies: your work – Serpentine Lattice; the other one is Alan Sonfist's 'Time Landscape'; and then Joseph Beuys, '7000 Oaks'; and then the fourth one is my own project, called 'Biogenic Interface for Cities'. I am focusing on trees and woodlands in Aberdeen.

Helen Harrison: I would say – about Beuys – at first we used to say, "What is all the fuss about planting oak trees[92] in beech forest? When we found out that he was dealing with a lot of old folk-tales, customs, and beliefs in what he was doing and these were the implications that we, as strangers and as non-German and alien to the neighbourhood, did not understand. His work had a great deal of meaning to people because they knew the references that the trees made which, as I say, does not carry over, necessarily, if you do not know that. It is attractive to make seven thousand oaks, and it is interesting to make such a large thing – but it was the connotations that the work brought with it that made it so interesting.

Newton Harrison: We called that 'the text in the culture'.

Helen Harrison: Yes – and that is the importance of language too. It is that words denote something very specific; but words also have connotations which are not specific but, like atmospheric things, drag along with them. It is the connotations in poetry that make it so rich; and it is the connotations in certain kinds of work when you touch on a cultural icon or a cultural history or something, that people react to – and that is what he did with '7000 Oaks'.

Newton Harrison: See, I thought that work was ridiculous because, there were the seven thousand oaks running through a beech forest! That whole area was a beech forest! I thought, "This guy does not know anything about forest architecture – so why is he using oaks? There are lots of other things

---

[92] The reasoning behind the Oak: Beuys said, "I think the tree is an element of regeneration which in itself is a concept of time. The oak is especially so because it is a slow growing tree with a kind of really solid hardwood. It has always been a form of sculpture, a symbol for this planet ever since the Druids*, who are called after the Oak. Druid means oak. They used their oaks to define their holy places." Demarco, R., (1982) 7000 Oaks: Joseph Beuys interviewed by Richard Demarco. *Cencrastus Magazine,* 80, p.19.
* In Celtic polytheism, a druid was a member of the priestly and learned class in the pre-Christian, ancient Celtic societies. Available from World Wide Web Wikipedia, the free encyclopedia: <http://en.wikipedia.org/wiki/Druid>.

that you could use." Then, after I understood the connotations (actually Helen brought them up) – I was still intolerant, but less intolerant. See, I thought he was making an ecological grab inappropriately. However, Beuys was mystic – pretty much; and he was …

Helen Harrison: … a shaman.

Newton Harrison: He did the shaman thing – so, within the context of his work, this was a fine work – independent of my, "What are you doing with oaks in a beech forest?"

[42:24]

Again, it is about having eyes. We [scanned], "Beech forest! Oaks!"

Helen Harrison: We did [scan] the legend or the story.

Newton Harrison: Yes, so once you scanned the text and the culture, that again changes your opinion of the work.

Helen Harrison: Yes.

Reiko Goto: But your work also works that way?

Newton Harrison: Absolutely. In fact, many of our works do not have a text and a culture and our poetry set out to generate the text and the culture. Since there are so many problems in the culture, when we tell a new story, we have to do that. That is why, lots of times, our work take ten, fifteen, years to resonate.

[43:17]

Newton Harrison: Joseph Beuys wanted to create magic.

Helen Harrison: He wanted to make new things and he made myths. His effect, also, was on his students who came and carried the ideas of …

Newton Harrison: Look at Shelley Sacks. There are tons of students who owe Beuys; who came up together.

Helen Harrison: It was very interesting because when, in 1974 when we had our first show at Feldmans, he also took on Joseph Beuys.

Newton Harrison: And he took on Bucky Fuller. Feldman really had an eye. We saw Beuys's Coyote piece which I thought was (aside from his entry in an ambulance) ironic.

Helen Harrison: No – that was a different one: "I love America and America loves me" and his coming in the covered ambulance was ridiculous.

Newton Harrison: It was silly, but once he got in with the Coyote – holy mackerel!

Helen Harrison: I thought, "How can this be so important?", and then you looked at this little coyote that did not look very happy and was kind of rat-eaten etcetera – and you looked at him – but what he did to make himself a symbol, was the stick and the cloak … He did it.

Newton Harrison: Well, there is a reason why he … He related to the coyote. He mirror-imaged the coyote's movements. At a certain moment, they were in one space psychologically, together. This was a masterwork. This was a masterpiece of seeing; of knowing; of being in touch.

Helen Harrison: [But he shepherds custom; he shepherds things.] The image that he made of himself, was part of the shaman thing that he did. It was very effective.

Newton Harrison: It was interesting, because Helen and I chose to do the opposite. We chose to behave and look as normal every day as we possibly could, while taking on impossible tasks – as normal. We chose the norm, whereas Joseph chose the extreme. We both did separate things, of course, but Joseph, for instance (Beuys, I should say) really worked with the text that existed in the culture; helping them along. We chose to generate text that did not pre-exist [in our culture].

Helen Harrison: He also worked with the culture; he worked with the educational systems in the culture; he founded the Green Party – or one section of the Green Party.

Newton Harrison: There are a lot of founders of that who do not think he founded it.

Helen Harrison: Yes – but he was one of them. He did a lot of things that had not to do …

Newton Harrison: I mean, social sculpture is fair enough for him. I do not like the term much, but it is fair enough. I see it as fair. So.

Helen Harrison: Yes, and the other thing he did – he was memorable – that was his [?_____]. He took a taxi all across Germany [?_____].

[49:22]

Newton Harrison: Helen, may I tell that story? At Documenta, they take us into a room; they show us where they are going to take the desks out and disempower a bunch of students. The kid calls up Beuys who one of his teachers and Beuys takes a taxi from Cologne to Kassel (that is a four-hour taxi, or something) and he goes and he sits on the table; if they were going to take out the table, they are going to take out Joseph Beuys. This is a deeply inventive human being.

[50:30]

Reiko Goto: Listening to your memories of Beuys – especially the Coyote piece – it is really vivid and it gives us almost the real experience. I was thinking about, John Dewy's Art as Experience. This is going back to your work – the experience *[of your work]* – because I was very lucky to experience *[it]* [(often, and over a long period of time),] listening to your discourse and being on [the real site]. Your work does not only exist in galleries – your work exists in talking to people and going to places. It is much wider.

Newton Harrison: Well, every artist – like Beuys – had a strategy. It came actually a bit out of Rudolf Steiner. You know, [it is like the difference in our perspectives], we run into a great artist as opposed to one we considered to be a self-promoting mediocrity.

[51:48]

Helen Harrison: Well, I would give him a little more credit than that.

Newton Harrison: Helen is more generous (and he is better than that). What we have done, again and again, is – the gallery for us, and the museum for us, is a meeting hall. It is a meeting hall for text, for ideas and for images. The strategy we use – have you seen our Santa Fe work? 'Lessons from the Genius of Place.' That has been done. It is in the City plan. The river has been restored; 87 gardens were planted; it is to leap off the walls of the gallery and land in the real world. We see the gallery as staging ground; as a metaphor for a much larger field of play.

Helen Harrison: The gallery is a meeting place. I think this is very important. It is a place where people come in and because it is a gallery, and it is an art gallery, the political aspects of things disappear and people look at them differently. It is very useful to do that. We have also exhibited in libraries, city halls …

Newton Harrison: … a barn where they just drove the cows out – the flies were still there.

Helen Harrison: The places have been public, [which] will attract the public – and that is the important thing, that people meet in them.

Newton Harrison: So what you want to do … Let me suggest that you, after reading something else of ours, ask us three other questions:

1. What is a metaphorical flip?
2. What is an ecological narrative?
3. What is a field of play?

But later. Another time. We will give you something else to read.

Reiko Goto: Ok – thank you very much!

Part 2

Present: Helen Mayer Harrison
Newton Harrison
Reiko Goto
Anne Douglas
Tim Collins

Tim Collins: Our art reaches deeper than words and images.

Newton Harrison: Right. I have no objection to Helen's thing. I am just different. See – Helen's thing for me is *a* important thing. Not *the* important thing.

Helen Harrison: I would say that the work has an effect on people – the 'ah-hah' effect, which means suddenly they see the world somewhat differently as a result. It resonates in the mind and it takes a while for that to make a difference to somebody and they realise they are seeing the world differently.

Newton Harrison: It might be that we are having a trivial difference of opinion. It is a difference of opinion that does not affect our process, our meaning, or our outcomes.

Helen Harrison: Yes.

Anne Douglas: It is interesting, because it depends also on being able to get very close to your work, either to be (I suppose) in there, as one of the fifty people working with you, or to be able to revisit it through the books; through the project; the way the story is told.

Newton Harrison: Well, truth to say, this is really neat because we have not given the Serpentine Lattice a *think* – in ten years. It is really useful.

Helen Harrison: And suddenly I am realising that you did a very good essay. I remember thinking it at the time – but I just looked at it again, and I suddenly thought, "Yes!".

Newton Harrison: And like when you read, "Well, you can't do this because of that" – it was useful for you to lift it out, but it was useful for not the reasons you thought because, what we did was, we did a creative act that we thought pre-cancelled that. Otherwise we would have to answer those questions, and if you answered those questions, we would have stopped, then and there. So why should we let somebody else determine our agenda by their questions.

Helen Harrison: Him and I have a slightly different approach.

Newton Harrison: I know we do – and that is what makes the work.

Helen Harrison: It comes from the fact that you have been an artist first and foremost your whole life; I have been other things.

Newton Harrison: That's right. Since I have been eleven.

Helen Harrison: I have been other things, first and foremost, until I became an artist and discovered … No, I became an artist when I realised that, as an artist, I could express many things that I could not express in other ways. It is much more effective.

Newton Harrison: Helen is much more compassionate, and I am much more aggressive.

Helen Harrison: You are. I have been a literary scholar, a teacher, a psychologist. I spent some time with education and philosophy and psychology; I trained teachers – I did a number of things –

and all of that feeds into the art and into the way I look at the world and things that I care about and consider. I discovered that, as an artist, I can really deal with these issues in ways that make a difference to people.

Newton Harrison: Without being edited by others.

Helen Harrison: Yes.

Newton Harrison: You see, if you take a look at collectivity – the downside of collectivity is that everybody is editing each other all the time, so certain kinds of creativity cannot bubble up in the collective format.

Anne Douglas: And where do you see collectivity manifesting itself? I mean, how do you calculate it?

Newton Harrison: [In the Old West] It is a wonderful their collectives. They all talk to each other; they edit each other; they help each other. The outcome of their collectivity is transformative. But, collectivity also has this other side. We, as artists, move in and out of it.

[5:07]

Reiko Goto: Is art related to knowledge? If it was related, which knowledge and how much knowledge would be necessary to understand your work? For example, without knowing about a watershed how does audience understand Serpentine Lattice?

Newton Harrison: Any moment, in some of our work, that so-called 'knowledge', becomes poetic and it becomes a poem; and therefore it becomes an aesthetic experience. At any given moment there is, for us, an oscillation between knowledge and aesthetics. They go back and forth. They feed each other; they are not 'either or'. I do not know how you can do this 'either/or' thing.

It is like when you said to me, "What is more important, ethics or aesthetics" and I began to laugh. Ethics is my left eye; aesthetics is my right eye. Which would you have me prefer?

Helen Harrison: Well said.

Anne Douglas: That is very well said, actually.

Newton Harrison: I think this leads to something intellectually very important. Suppose I were to tell you that I think the worst thing that has been invented intellectually in the last century or so is dialectical thinking where you do 'either/or'; where you pose opposites; where you [hope] for synthesis.

Supposing I were to argue that synthesis is a natural condition of the mind and dialectics is generally an unnecessary complication.

But anyway – that is why I tease you with my left eye and my right eye, but I mean it. Every time you ask me an 'either/or' question, I sneak around and hit it one. Do you see where I am coming from? It is pretty interesting to think about this.

Sometimes, in my own behaviour, I do not know what I am doing until after I did it. Every artist is like that. Amen. I find that when I pose these 'either/or' things which I regard mostly as straw men (you know, things you knock down), I just duck it, and then I look for the synthesis before I am willing to make the argument.

I think we create syntheses in our minds automatically and often to our benefit. Sometimes we rush to synthesis too quickly and we should examine how the synthesis is formed, but the dialectical properties of formation, for me, get in the way because sometimes they are quadratic, sometimes they are seven-pointed; sometimes they are two-pointed.

[12:04]

To go back to your question, let us see if we can dump the question, but find the meaning. You keep going back to your question – it is going really back to Kantian. There is the pure experience, and there is knowledge. I do not believe that is true. I do not believe that knowledge is separate from experience of that kind; I do not think that pure experience is separated from knowledge. Why? Because I see the psyche as unity, and the separation as an artificial construct that helps critical theory, but I do not think it helps existence.

Helen Harrison: Bucky Fuller[93] had a very important statement to make. He said, "I don't start out to make a beautiful thing, but if what I make is not beautiful, I know I have been unsuccessful in my work."

Newton Harrison: Yes, that is a good one, yes. Helen, you are really right on.

Do you see why I am not going to do that? Do you see why, whenever you give me one of those things, I'm just not going to do it. Let me put it this way: it is not *in* me to do it; I cannot do it; my whole psyche does not want to do that. Now, I do not ask you to do things you do not want to do.

Anne Douglas: Can I turn it slightly on its head? Given where Reiko is, in trying to deal with both the development of the practice and …

Newton Harrison: I know we're a hard nut.

Anne Douglas: No, no. This is a serious question, it is not a criticism of what you are saying. Given that a lot of the theoretical work that she is encountering, particularly in relationship to aesthetics is based on dialectics. Where would you advise her to go?

Newton Harrison: Now *that* is the right question! Thank you. First, I think dialectical thinking needs to be examined critically to see what the outcomes from it are. For instance, let us take your polarity: knowledge and pure aesthetics. What is the outcome from believing such a thing? The outcome is schizophrenia. You have separated two parts of the mind that are really unified. Then the next question is, if that is schizophrenia, what is not schizophrenia? I do not mean schizophrenia like really sick – I just use it as a metaphor. (I am not talking about deep disturbance and you are crazy and stuff like that. If I had a better word, I would use it.)

[15:17]

Then, what is not it? Let us look at those feelings, those things. The core issue is, when I am thinking, I am feeling; when I am feeling, I am thinking. The kind of thinking I am doing when I am feeling is different from the kind of feeling I am doing when I am thinking.

I would start to find that out and find out how you can see into such a construct at which point you will have a really interesting document and, in my opinion, it would be post-critical. It would be really about how the mind works; really about how scanning works. I would go and begin to investigate the work of the cognitive scientists; I would read [Lakewell's] sub-consciousness thing that he did with [Johnson] a couple of years ago.

---

[93] Richard Buckminster "Bucky" Fuller, 1895 - 1983, American architect, author, designer, futurist, inventor, poet and visionary.

Look at Guattari again, for a minute. I do not agree with him for many reasons. This does not mean there is not interesting stuff in what he writes because he is an ethical being trying to do good – so it is never going to be uninteresting because he is a first-rate mind. But look at the problem he faces when he comes out of Freudianism. Freud held that there were three parts – the Id which carries this, the Ego and the Super Ego. Guess what? It is Jesus, Mary and Joseph. There are threes all over the place.

Helen Harrison: The Father, the Son and the Holy Ghost.

Newton Harrison: All over the Western culture we have got these threes. Supposing that is not true. If you look at the cognitive scientists from another perspective – and that is why I believe you really have to get out of the world of criticism into the world of thinking (I do not mean that critics do not think, but I do think they do not think a whole lot), you will find that you ask what their description of the unconscious is. The cognitive scientists hold that the unconscious is *vast* – way bigger than Freud thought – and we have less access to it than Freud thought.

Go and find out about that. Let that infuse how you see present critics making these polarities because, you know, when you present this polarity to me – you do not behave that way. When you and I are talking like human beings, you are doing both at once. The aesthetic is running in your mind; the story is running in your mind; you are worried about the beauty of something; and you are oscillating back and forth – your mind does not yank it apart – no wonder you have trouble with it. Don't do what your mind does not want to do. Does that make sense?

[18:43]

Reiko Goto: Yes.

Anne Douglas: Yes, absolutely. Thanks.

Reiko Goto: Knowledge and experience…

Newton Harrison: Knowledge is the experience that people have.

Reiko Goto: It helped me to think about our projects in Pittsburgh. We spent eight years to work with scientists. We got a little bit lost in our minds in what we tried to prove. Were we creating information/knowledge?

Newton Harrison: In Pittsburgh?

Reiko Goto: Yes.

Newton Harrison: I thought so too. But you know, I thought it was a really noble effort. The reason why I was on your side so much was that, you do not have to succeed. Especially when you are not exactly sure what success is!

[19:36]

Reiko Goto: I agree with you. It did not matter whether it was art or not. I could not convince people especially from art communities why our projects (Nine Mile Run Greenway and 3 Rivers 2nd Nature) were art. I want to discuss with people more intelligently though.

Newton Harrison: I know what you want. Sometimes, what you want, you don't get. So many things we have wanted, we did not get. If you take a more Buddhist attitude towards it, you are non-[possessive]; you open your hand, and you just did not get that.

I have a feeling that, where your and Tim's work are concerned – just keep doing the next work, and in a little while, nobody will bring up the issue of, 'is it art' at all. So I would dump the argument because it takes up your mind space, and it takes *[you]* away from the act of creativity. It does not help you to find a way to explain it. What helps you is the act of creativity that makes the work – and you do it again, and again, and at a certain moment it is self-evident. In that you have to trust not your mind – which is the smallest part of your meditation – but your whole psyche.

[21:13]

Helen Harrison: I think it is important to have knowledge about the right plants, say, for a particular thing; or the right subject. You get it, and then you start ruminating on it and pretty soon it will be an aesthetic experience rather than an intellectual one.

Newton Harrison: Well, you see, for me it is a false dichotomy again. If you are finding out something that you know will help you – does it make you happy?

Reiko Goto: Yes.

Newton Harrison: What do you think that happiness is? When I am finding out stuff that I know is going to go into a piece, I am just so happy I can practically jump up and down.

Reiko Goto: Yes, because I am thinking about it and I see the evidence that something existed.

[22:38]

Newton Harrison: Yes, yes. I consider that part of me the so-called aesthetic experience.

Reiko Goto: It is a body of experience – not just thinking.

Newton Harrison: Yes. Then it crystallises into a work of art in due course – so why should you *[not]* have the pleasure along a whole spectrum instead of just this little piece of art you make?

Anne Douglas: I think it is probably pretty challenging at the moment. It was so interesting of what you were saying about Joseph Beuys and the mythology that underpinned the meaning of Beuys and enriched it. I think moving from the States to Europe is a big challenge because there is so much to contend with in those terms.

Newton Harrison: Yes, there is.

Anne Douglas: So the crystallisation is slower and, I think, sometimes it feels …

[23:51]

Newton Harrison: Also the stuff you are dumb to! I was totally dumb to Beuys's mysticism. He looked fraudulent to me for a while until I picked up on the text. The Oaks looked insane! I thought it was partly a Dada act – he is running these oak ribbons through a beech forest. At the beginning I thought I am looking at eco-Dada here – until I realised this other stuff. Information is really important. Context is important.

I discovered this in the oddest way. I was giving a talk in 1968 or something to a whole bunch of kids on a foundation course and I am holding up this little Greek female figure with a jar and I am saying how beautiful it is; and how wonderful it is; and the rhyming inside; and the way this is invented; and it is all done five inches four – that is some piece of craftsmanship. Well, what do I find out later? It is a slave – then what do I think about it? This is a slave who has been forced to carry water and she

cannot be happy about it. On top of that, this is an artist who is making an aesthetic statement about somebody else's pain. So all that is there too. But until I knew it is a slave, I did not know that.

Anne Douglas: Research is a little bit like putting yourself in this amazing studio of other artists and other experiences to learn from. That is, in a sense, the point of the case studies – although we might revisit those in the light of this conversation. I think it is extremely challenging currently to actually know very clearly where you are because there are, in a sense, so many options and there are also so many fragmented ideas of what perhaps another artist is doing.

Newton Harrison: There is a marked difference between, say, us and Beuys and that is, what do we do? We take on a whole system. What do we do? We are not afraid to take it on. We don't take it on – we do it, and we get questions just like the ones you saw. What we do is dump the question and stay with the system. We ask ourselves again and again, "what is the best thing for this whole place", and the most important thing for us, at first, is to define the field of play. How big is the whole place. It turned out to be 55,000 square miles. Who could believe it? In '92 we were worrying about 55,000 square miles of which 50,000 is wrecked – *and* on top of that, there are 100,000 miles of river there of which 70,000 running miles are kind of affected, 20,000 badly. Holy shit. There we are looking at this, but to be undaunted is important – to say, "Well, ok – we took it on, so we are going to take it on. What is the best thing that can happen here?"

If you look at Beuys you see him as 'seeing' mystical systems. Working out of Steiner and stuff. We know Steiner somewhat and we have read the whole bunch and put them aside.

[27:35]

Helen Harrison: I have read most of them – not all.

Newton Harrison: If you look at Beuys, he worked through his ideas in one way. The Honey Pump is one example of his way of working. If you look at us, you would see this flow of work from us and it continues. Helen is eighty and I am seventy five and it is like we are just bopping along here.

The other thing to understand, Reiko, is you have got another forty, fifty years to get this worked out.

Tim Collins: So the name of this interview could be called, "She is eighty, I am seventy five and we are bopping along here".

Helen Harrison: I just wanted to say one thing that may be of help. One of the things we do that I think is fairly important, is in our talks. We are as human as we can be so that we do not become special people in that way. We are just like everyone else.

Newton Harrison: You could see it in our performance last night.

Helen Harrison: Yes. We go back and forth and do all kinds of things and we find that the human voice is effective – the speaking. We try sometimes – as we did with the Serpentine Lattice – to, at least, do a voice-over if we cannot be there when the work is presented. So, at least there is some touch of the …

Newton Harrison: Yes. If you want to know a real problem with our work, or *the* problem with our work, is, you can accept that there is a reasonably powerful visual statement in that gallery and that the text are lucid – but, if you add us, the whole work gets better, or stronger, or more understandable; and if you subtract us, the whole work gets less accessible. We do not seem to be able to get around it. We had forty years trying to get around this damn thing

Helen Harrison: Whenever we try with the voice-overs …

Newton Harrison: We have tried every which way and about ten years ago we decided to say, "Well, [there is] nothing to do – we will just accept it as normal for our genre."

Anne Douglas: That is interesting.

Helen Harrison: Beuys also …

Newton Harrison: Yes, he really had to be around. His work does not do a whole lot without him there. Both of us suffer from this a bit.

Reiko Goto: I did not know about metaphor, the way you use it.

[31:24]

Newton Harrison: We are interested in thinking the 'thinkingness' of work and cannot do work in the absence of metaphorical stuff unless you make assertions of certain kinds.

Helen Harrison: If you are really working with metaphor, you have great empathy for the other – whatever it may be. You have an empathic relationship to it.

Newton Harrison: Like love. When you love you are the other, but not completely the other. This is a metaphorical relationship. A metaphor is one thing understood in terms of another. The real stuff of metaphor is out of the ground and human, and then it is abstracted and invented in various different ways and finds itself …

Helen Harrison: In literature they …

Newton Harrison: … they separate it out.

Helen Harrison: Yes, and make it less than it really is.

Newton Harrison: But the pre-literates – they were in metaphorical relationship with the fish they caught. They did not want to eat its brains, so they got a little smarter – that is a real metaphorical relationship as far as I can see.

Helen Harrison: I always said that the world suffered when we lost the river gods because we behave to the river when the river gods were part of our thinking in a way that respected the river. Once we lost that kind of respect, it made a big difference in the way we treated the world.

Anne Douglas: Are you using metaphor as belief?

[33:25]

Newton Harrison: Generally speaking, metaphors generate beliefs. Sometimes you make a metaphor and you do not know the belief embedded in it until you have listened to yourself say it. For instance, somebody says, "I love you". Well, think of the entailments of that metaphor. For instance, somebody will say (Lakoff writes about this), "Marriage is a collaborative adventure". The entailments with that are common work; all kinds of stuff. Shift the metaphor: "Marriage is a stormy adventure". The entailments of that are pain, upset, highs, lows, abandonment – whatever.

The way a metaphor is shaped has beliefs embedded in it, but to understand how a metaphor works, you need to unpack it. You unpack it by looking at the consequences. The entailments are the parts of the metaphor that flow from *[it]* as you build it.

Reiko Goto: You have to live, and you have to find the metaphor in the life.

Newton Harrison: Yes. But I think you are in good shape. You do not think you are in good shape, but I think you are in good shape. The reason I think you are in good shape is that when you make a work of art, you are in a very strong, intimate, metaphorical relationship with it. You are seeing it; you are loving it; you are feeling it; you are enacting it.

[35:03]

Reiko Goto: It is interesting. Brady's natural aesthetics and Grant's dialogical aesthetics do not touch the metaphor. Emily [talks] about the imagination, and Grant [talks] about empathy.

Newton Harrison: Yes, we know that. The thing is – if you read our Sixth Lagoon – it is called, "On Metaphor and Discourse" (we wrote in '78 or '79) – that is when we started to understand this. Then Lakoff in '81 or so wrote "Metaphors we live by".

Anne Douglas: I've got that if you want to borrow it.

Newton Harrison: Now, he is the one who laid out the issue of entailments. He cites us actually when he talks of marriages as a collaborative adventure – he is talking about us – he thanks us in this thing. You read him. I almost never teach from a book, but I taught a senior seminar from his "Metaphors we live by", chapter by chapter – it was so useful. You should read it.

Helen Harrison: The best way to learn something is to teach it.

[36:38]

Newton Harrison: She should read it. See how he unpacks things. Lakoff is the most ambitious of the linguists I ever saw. Even more than Chomsky who was his teacher and they had each other. Lakoff is convinced that every single discipline is metaphorically driven. One of his more recent books is about maths and metaphor. Mathematicians think of their work as very pure and not burdened. Lakoff proves otherwise about which he will pat himself on the back and explain to you. We like him a lot – by the way.

Anne Douglas: Is systems-thinking metaphorical?

Newton Harrison: Yes. That is how working with whole systems and seeing a field of play in which systems are embedded, and then systems become patterns that emerge out of field of play, tell us how to create.

Helen Harrison: We have to find the boundaries of the field of play that we are dealing with.

[38:12]

Newton Harrison: I have a copy of that. Why don't I send it? You know the Peninsula Europe work? Doug White who works out of the Santa Fe Institute and [UC Irvine] is one of the leading complexity theorists. He is an anthropologist.

Helen Harrison: He dealt with statistical anthropology – among other things.

Newton Harrison: He asked us to rewrite Peninsula Europe in a partially other form as a critique of complexity theorists, arguing that the Peninsula Europe work was in fact a grounded complex system event and that the complexity theorists needed to get grounded – they were not. They abstracted so far, they could not get out of their own heads. He has just published it.

Helen Harrison: It is published on the internet in *'Journal of Structural Dynamics'* (The Harrisons, 2008).

Newton Harrison: Edited by Douglas White. If you go there, you can pull it down. It is Peninsula Europe Part 1, Part 2 and Part 3. We added two parts to it. In the first five pages we lay out what we mean by metaphor, field of play, and stuff like that – because he said we were not clear to his theorists, and asked us to do that.

Helen Harrison: It is on the internet and theoretically we are supposed to respond to people's questions about it, but we can't. I can't, anyway. Doug tried to show me how to get it, but he showed it to me quickly.

Anne Douglas: Statistical anthropology – is that …

Helen Harrison: Structural dynamics.

Anne Douglas: Yes, but he is a statistical anthropologist – so he is looking at the statistics of habitation?

Helen Harrison: Well, when I said he did statistical – for example, one of the things he was looking at was the physical systems of the world. He went way back to the beginning of the Christian era. There were certain predictable things that he could find, and he could predict what would happen the next time from this. When he got towards the twentieth century, it broke down. It work for the nineteenth, but when he got to the twentieth something changed drastically in the whole process.

Newton Harrison: *[returning to previous topic:]* It is a Wiki site[94].

Helen Harrison: I do not know what that means.

Anne Douglas: It means you can upload your own view and respond *[to the article]*.

Newton Harrison: We have copyrighted it, so they cannot mess with the original, but they can add their views to it. Anyway – any more questions?

Reiko Goto: Really a lot. Thank you very much.

[94] <http://repositories.cdlib.org/imbs/socdyn/sdeas/vol2/iss3/art3/>

APPENDIX A5: The context of the exhibition

For this exhibition I needed to understand how trees were related to environmental issues and culture in Scotland especially the City of Aberdeen and the surrounding areas.

There is a map called *the lower Dee side* (Figure 21) by Timothy Pont (1565 – 1614) who created the first detailed map of Scotland. Pont's survey was done by travelling on foot and talking to the local people. Robert Gordon[95] (1580 – 1661), A Scottish cartographer who owned Pont's map described the woodlands in Aberdeenshire around the time.

> When some centuries ago all this area was rough with woods, to the great hindrance of agriculture, as they were cut down or rotted through age, moss grew on top…In the lower regions as far as the sea-shore, oaks of various species, alders, willows and hazels were prevalent; among the mountains, fir, pine and spruce (which for the most part last also today) were more frequent: the birch however was common to both. But this great supply has now in the lower places, where the land is more suitable for agriculture, changed to scarcity; hence material for buildings is for the most part imported by sea from neighboring Norway, while there is enough at home for country matters. But what is left of the native woods is difficult to access as a result of trackless places and rough roads.
>
> Robert Gordon 1662, *Blaeu Atlas of Scotland*

(Figure 21): The lower Dee Side by Timothy Pont (1565 – 1614)
(Reproduced by permission of the Trustees of the National Library of Scotland)

There were two important facts about the woodland around Pont's time. First, there were some common wood pastures. People depended on the forest as a source for hunting and collecting timber

[95] Robert Gordon of Straloch, the father of Person James Gordon (1615 – 1686) and the grandfather of another Robert Gordon (1668 – 1731), the founder of Robert Gordon University owned Pont's lower Deeside map.

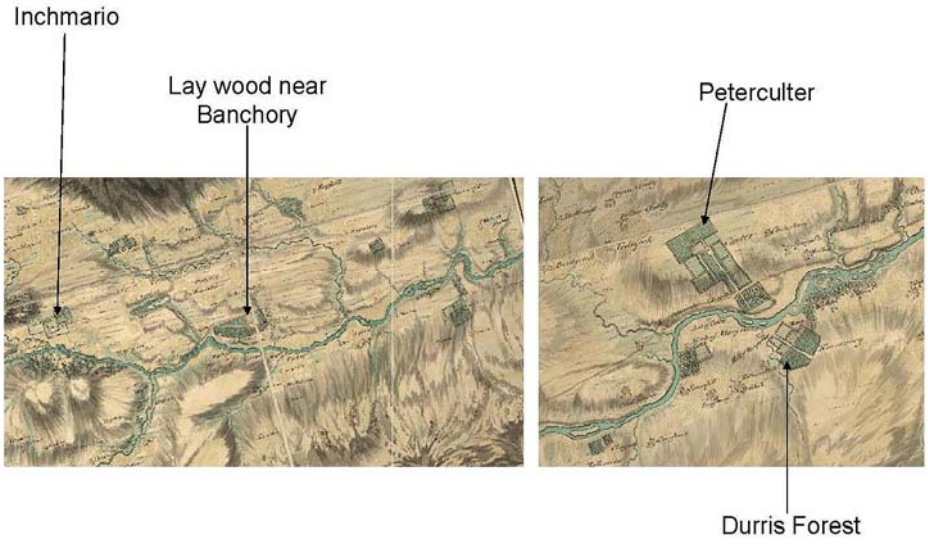
for heating and building. Even forests were denoted to belong to the King[96] (Marren, 1982, p.14). Second, Pont's map mainly consists of the Dee River, numerous streams, locks, Grampian Mountains and hills. The open areas were occupied by churches, mills and human settlements. There were only three woodlands: one was near Maryculter and Peterculter, the second one was along Water of Dye and the third one was along Burn of Canny near Kincardine O'Neil. By the 17the century the woodland in Aberdeen and Scotland were depleted (Marren, 1982, p.16).

'Woods were coppiced probably from medieval time' (Stewart, 2003, p.106). Woodland can be a renewable resource. Large managed woodlands started showing up on the first Scottish systematic map (Figure 22) by General William Roy (1726 – 1790), military engineer. During the Scottish Enlightenment millions of trees were planted and managed as plantations by Dukes and Earls. 'A census of woodlands in 1812 had indicated some 914,000 acres of woods in Scotland, of which around 45 per cent were recorded as planted' (House and Dingwall in Smout (ed), 2003, p.154). The large-scale planting consisted of both native trees such as Scots pine, ash, alder, elm, oak and birch, and introduced species such as beech, sycamore, larch and Norway spruce. However the price of the domestic timbers was more expensive than imported ones from Russia and Scandinavia.

> A further estimate of woodland cover in Scotland in 1872 suggested it had fallen to 734,500 acres as woods were felled and not replaced.
>
> House and Dingwall in Smout (ed), 2003, p.154.

The British government decided to set up a body to create a reserve of timber in case of war. The Forestry Commission was set up in 1919 to create this reserve and to manage Britain's timber in a sustainable way. Conifers such as Scots pine, Sitka spruce and Douglas fir were highly recommended for the new plantations. Logging trees required a licence, and planting new trees became an obligation after logging. The most recent surveys estimate that 17 percent of Scotland's land is forested (19 per cent, if the Northern and Western Isles are excluded). 'Of that, 2 per cent consists of semi-natural woodland and 2 per cent of planted native forest' (Worrel and Mackenzie in Smout (eds.), 2003, p. 198).

[96] "There were originally two medieval forests close to Aberdeen: the Royal Forest of Stocket, which bent away to the north west, and Nigg Forest, which belonged to the Church and lay on the far side of the Dee. There are passing references to Stocket Forest in the burgh charters and records…its existence 1313, when Robert Bruce granted custody of the forest to the burgh of Aberdeen and confirmed the grant with a charter in 1319. Bruce's famous charter which gave the burgh its 'Freedom Lands' in perpetual feu, is said to have reflected the King's gratitude for Aberdeen's loyalty during the way of liberation. The Freedom Lands included all the '*fields, moors and other portions whatsoever of the said forest out with the wood of Stcket, hard by the foresaid burgh of Aberdeen.*' But the king was careful to reserve certain royal prerogatives: '*we reserve for ourself and our heirs only, the green growth of the great trees in the foresaid wood and game likewise, should any such chance be found in the same forest*'."



(Figure 22): William Roy Survey of Scotland 1747 -55): managed woodlands in the lower Dee side: Peterculter and House of Dores (currently called the Durris Forest) in Kirkton of Maryculter, Lay wood near Banchory, and House of Inchmarley (currently called Inchmario) near Burn of Canny. (Reproduced by permission of the Trustees of the national Library of Scotland).

Current conditions

Since 1919 the Forest Commission has been protecting and expanding Britain's forests and woodlands. Their current objectives are:

- Protect Britain's forests and woodlands
- Expand Britain's forest area
- Enhance the economic value of our forest resource
- Conserve and improve the biodiversity, landscape an cultural heritage of our forests and woodlands
- Develop opportunities for woodland recreation
- Increase public understanding and community participation in forestry

Forestry in Scotland, The Scottish Parliament, 1999

In 2002 Loch Lomond and The Trossachs Glen were opened as the first National Park in Scotland, and the following year the Cairngorms was also opened. I visited the Trossachs National Park in the spring of 2010 with the Native Woodlands Discussion Group and Steve Brown, woodland officer at the Grampian conservancy. Sheep had been eliminated from the areas for eight years. Numerous small birch trees with thick roots had been growing back in the bracken area. The group was talking about re-introducing cattle to break down and prevent fern or other vegetation from growing in the rich soil. The deer population would be an unresolved question.

Currently Aberdeen's woodland cover is 10 per cent. The ownership of the woodland is: 24 per cent is owned by the Council, 48 per cent is owned by national forest estate and 27 per cent is by others[97] The city has been planning to plant 180,000 trees since spring 2010[98]. I have seen numerous small green tubes that hold saplings in St Fittick's Park, Westfield Park, Abbotswells Park (near Duthie Park) and an area near Donmouth at Seaton.

Conversations

In 2007, still in the early stages of my research on trees in relation to Aberdeen, I met Duncan McGregor, Arboricultur specialist and Tree Officer at Aberdeen City Council. During the meeting he said, "There seems to be a general lack of interest in Aberdeen with all things tree-related… apathy is the word I was looking for." (McGregor in Goto, 2007, p.11). In order to understand the current condition of trees in the city, he suggested meeting Geoff Banks, photographer and naturalist, who initiated Aberdeen's Heritage Tree Trail in Old Aberdeen area. I asked Banks how he decided to make this trail as a tree trail.

> When the City Council asked me to work on the trail, the ideal location actually was Old Aberdeen. So, I was looking basically from Mounthooly all the way down through to Seaton Park because, at the time, the City Council were wanting something to combine with the built environment, but then I realised very quickly that, as I basically knew then, there was no local history in terms of what went on with the trees apart from a couple in Seaton Park because everything else was relatively new plantings. Even the trees at the back of the Cathedral in the graveyard there – they're all turn of the last century because if you look at the George Washington photographs of the City and you look in the day, you can quickly work out what wasn't there or wasn't there at all, and you realise that so much of it is so new.
>
> Banks in Goto, 2007b[99], p.5.

I also met Ian Kaye[100], who was managing all the trees on the campus at Robert Gordon University (RGU), a large wooded area along the Dee River. He said the campus had to be managed and controlled at all times. A question was how to maintain the open parkland [like RGU] with significant trees at the same time as academic business was going on. I met Professor Richard Lang, an architect and a theme leader in the Institute for Innovation, Design and Sustainability (IDEAS) Research, Robert Gordon University. He introduced me to one of his earlier works surveying green space and its use in different cities: Aberdeen, Brighton, Barcelona, Dublin, Eindhoven and Zurich

---

[97] McGregor, D. (2010) *Tree of Aberdeen*. Goto, R and Collins. Peacock Visual Arts; *Plein Air* Exhibition – Presentations and Discussion: Living with Trees and Aesthetic Truth. Aberdeen Scotland. This information was in his Power Point.

[98] Ibid.

[99] Banks *in* Goto R. (eds.) (2007b) *Interview with Geoff Banks* [online]. Eden 3, [cited 1 December, 2010]. < http://eden3.net/dialogue/2007/geoff-banks.pdf >

[100] Kaye, I. (2008) tree management on the campus at Robert Gordon University, Garthdee, Aberdeen. Goto met with him on the 18th of March, 2008 on the Robert Gordon University, Garthdee Campus.

(Laing, 2005[101], pp. 19-26.) The specific issues from Aberdeen were: recreational issues; availability and condition of facilities; climatic concern; housing development; and concerns over traffic. Dr. Eilidh Johnston, a geographer working at Greenspace Scotland said, "… the new government has set different priorities in Scotland…the economy is to be a strong driver, but there were cross-cutting themes about things being greener and safer and healthier" (Johnston in Goto[102], 2008b, p.5).

Through my historical research I have learned how woodlands had been important to kings, lords and the government. The coverage of the woodland had been influenced by the economy, the balance of supply and demand. Trees and woodland had been treated as utilitarian materials. My research is concerned with how to create a less utilitarian relationship between people and the natural environment in Aberdeen. Many people assume that there is plenty of nature in Scotland. On the other hand it is difficult to notice the fact that the total woodland coverage is 17 percent of Scotland's land area; this is a very low rate in Europe[103], and semi-natural woodland cover is only 4 percent (Scottish Natural Heritage). Tree cover in Aberdeen is 10 percent[104]. At the heart of the city lies a wooded park in the topographical remnants of an old stream and ravine – a place that is recognised for its historic landscape design. There is a site with mature trees that is shrouded in controversy. The wooded valley maintains tranquillity in the middle of the retail outlets areas. Improving the safety is the major concern (Aberdeen City's Community Planning[105], 2005, p.45.) among the citizens even though no crime has been announced. There have been development plans. In the first ten years of the new millennium three plans were put forward which moved from subtle redesign for modern use to a redesign with a building to complete removal of the park and the last vestige of the ravine and to be filled in and replaced by an open urban mall with buildings surrounding it.

I wonder if *7000 Oaks* could happen again somewhere, for example, in a city like Aberdeen. If we consider *7000 Oaks* as a model, the symbolic relationship with trees in the Scottish cultural landscape can be explored. Richard Demarco, an artist and entrepreneur invited Beuys to Scotland in 1982. Beuys asked Demarco to consider planting a *7000 Oaks* sculpture in Scotland (Demarco, 2005, p.18). In the Aberdeen area there are some standing stones, historical landmarks that are marked with the tree Alphabet called Ogham that signifies the traces of Celtic culture (Figure A23).

---

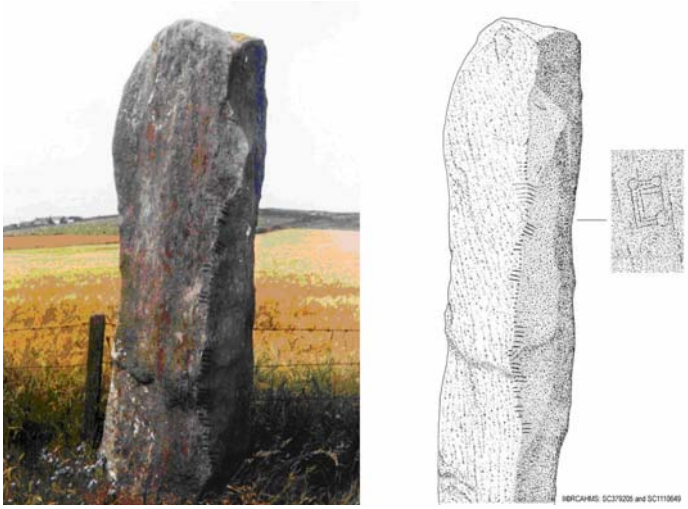
[101] Laing, R. (2005) Use of Green Space. *Greenspace* Final Report, Zurich, Green space.

[102] Johnston *in* Goto R. (eds.) (2008b) *Interview with Eilidh Johnston – Greenspace Scotland* [online]. Eden 3, [cited 1 December 2010]. < http://eden3.net/dialogue/2008/Eilidh-johnston-kita.pdf>

[103] McGregor, D. (2010) *Tree of Aberdeen*. Goto, R and Collins. Peacock Visual Arts; *Plein Air* Exhibition – Presentations and Discussion: Living with Trees and Aesthetic Truth. Aberdeen Scotland. In his Power Point: Tree and woodland cover in: Scotland 17%, UK 12%, Framce 28%, Germany 31%, Spain 36%, Finland 75 %. World 29%.

[104] McGregor, D. (2010) *Tree of Aberdeen*. Goto, R and Collins. Peacock Visual Arts; *Plein Air* Exhibition – Presentations and Discussion: Living with Trees and Aesthetic Truth. Aberdeen Scotland. This information was in his Power Point.

[105] *Aberdeen City Voice* (2005) [online]. Aberdeen City's Community Planning [cited 1 December, 2010]. <http://www.communityplanningaberdeen.org.uk/nmsruntime/saveasdialog.asp?lID=2630&sID=536>



(Figure 23):Auquhollie, Lang Stane, 8.5'x 2.5'x1.5', Ogham inscription 'VUO NO N (I) TEDOV' in Kincardineshire (Royal Commission on the Ancient and Historical Monuments of Scotland and the National Archives of Scotland)[106]

McGregor, the tree officer said some trees in Aberdeen are 200 to 250 years old. They were planted by the Victorians. Elm trees in the Union Terrace Gardens are 200 year old (McGregor in Goto, 2007a, p.3.). Banks, the naturalist, also said, "… a 250-year old tree – well, if you can imagine it had eyes and could see history changing. There's nothing else around us that can actually do that. That puts some sense… It makes us realise we're very transitory. Whereas a tree can be there for generations watching what's going on changes" (Banks in Goto, 2008, p3.)

Some old trees are historical landmarks and others can be marks that have been attached to personal memories, but trees do not last long as landmarks to compare them with standing stones. Then I used my imagination about the interdependence of the old trees and their relationship to the environment. Trees are supported by sunlight, rain, soil, and microbes. The trees that have survived the longest in a city must be healthy and supported by a healthy ecosystem. Therefore the trees can indicate the health of the ecosystem in the city. What will happen if the indicator of a healthy environment is eliminated? Eliminating a tree, or a small forest does not make a place unhealthy; it does not undermine the environment all of a sudden, but we certainly loose a physical feeling, and an experience, of health by losing the material indicator. On the other hand, if we understand this kind of indicator(s) and its relationship with others, we experience and understand other places in different ways. This awareness can be shared with other people. Artists can help others to see and experience this, and then a question might emerge among a group of people: 'If one indicator of environmental health is taken away how can we create another one?'

[106] Royal Commission on the Ancient and Historical Monuments of Scotland and the National Archives of Scotland (no date) [online]. Scotlands Places[cited 1 December 2010]. <http://www.scotlandsplaces.gov.uk/search_item/index.php?service=RCAHMS&id=37143>

I had email conversations with Newton Harrison about the interdependency of trees, people and places. He responded, “It seems to me that the issues are not all that complex. Your sense of truth, like our own, is that eco-systemic values need to be privileged and protected[107].” I wonder if the Harrisons were here what kind of moral metaphor they would create in this context. I remember what they wrote in the essay, Public Culture and Sustainable Practices: *Peninsula Europe from an ecodiversity perspective, posing questions to Complexity Scientists (*The Harrisons, 2008). They said, "...that territory we call Europe has many times rebuilt its landscape economically, politically, culturally. It has rebuilt its belief systems and rebuilt its ecosystem." The strength and the opportunity seem to exist in the culture and ecosystem.

[107] Harrison, N. (2010) *Truth*. E-mail conversations with Goto, R. May 4 and 5, 2010.

Appendix C: The exhibition handout

Plein Air

The Ethical and Aesthetic Impulse

Reiko Goto and Tim Collins

Peacock Visual Arts
Centre for Contemporary Arts
Aberdeen, Scotland
2010

Published by Peacock Visual Arts 2010

CONTENTS

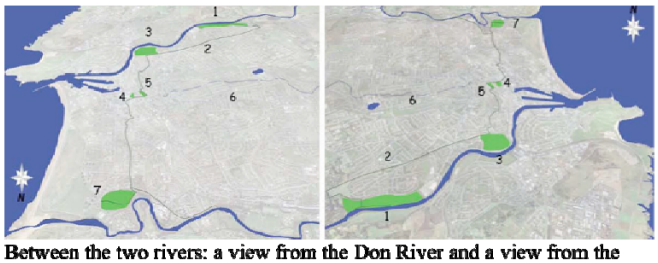
Plein Air supporting project members are:

Prof Trevor Hocking Plant Physiologist,
University of Wolverhampton

Carola Boehm Computer Musicologist,
Manchester Metropolitan University

Matthew Dalgleish Artist, Musician, PhD Candidate,
University of Wolverhampton

Noel Hefele Artist, MA Candidate,
Dartington College of Art/UC Falmouth



Between the two rivers: a view from the Don River and a view from the Dee River. Seven sites and seven trees were chosen for public experiments in Aberdeen. The experiments averaged two hours and often involved interaction and discussion with the people curious about the work.

1) Robert Gordon University, 2) The Deeside Way, 3) Duthie Park, 4) Sr. Nicholas Church, 5) Union Terrace Gardens, 6) Denburn, and 7) Seaton Park

The Dee Trail – Birch
22 June, 2010, 2:30 PM
Brisk and sunny day, windy
Piano, 13 minutes

The Dee River / Robert Gordon University – Elm
23 June, 2010, 11:45 AM
Sunny, leaf dappled light
Piano, 13 minutes

St. Nicolas Kirk – Elm
27 June, 2010, 8 AM
Bright sunny day
Piano, 23 minutes

Union Terrace Gardens – Elm
27 June, 2010, 9:40 AM
Bright sunny day
Piano, 22 minutes

Duthie Park – Lime
28 June, 2010, 9AM
Bright sunny day
Piano, 24 minutes

Den Burn – Cherry
29 June, 2010, 10:30 AM
Bright sunny day
Piano, 7 minutes

Seaton Park – Maple
1 July, 2010, 9AM
Sunny day
Piano, 15 minutes

I. Exhibition Overview

There is a long history of artists painting outdoors, 'en plein air' (in the open air) with a French box easel. In the mid 19th century there were two groups of painters, the Barbizon School committed to realism and direct inspiration from nature. The other the 'Impressionists' committed to a more open and experimental approach to painting; yet also seeking inspiration from nature in the form of light, movement and changes over time.

With *Plein Air: The Ethical Aesthetic Impulse* Goto and Collins have worked with a team of scientists, technologists and musicians to construct a box easel for the 21st Century. Like their predecessors, these artists seek an authentic experience 'in nature'. Where Millet extended the idea of landscape to peasants working in the fields and the impressionists examined the phenomenological exchange between light and material; Goto extends an interest and the intent to seek empathic exchange with the trees themselves. The work integrates aesthetics, ethics and cognition in the pursuit of a better understanding of the limitations of people/plant and culture/nature relationships. It also addresses CO2 source and concentration, by monitoring the impact upon a tree. This provides an experiential interface to an important but relatively invisible climate change issue.

In this first exhibition of the experimental work, the artists explore specific trees in different public places between the Don River and the Dee River in Aberdeen. The work results in 'true' scientific data that tells us about the respiration of trees; the work also results in a musical output which is embedded in a context of feelings and freedom but oddly connected to the life force which is at the same time the tree and me. There is a specific question driving the work:

"Is it possible to create change if we understand that life is interdependent and interrelated with nature in our environments?"

This portable system reveals details about the source and impact of CO2 in cities. This is understood as the secret life of trees; which the artists understand as an incredible sensitivity and reactivity to the constant but changing impact of humans on the atmospheric chemistry in cities. Goto references the human need to hear the breath of people and living things we care for to assure ourselves of their well being. This technology provides one way of listening to the breath of trees.

The system has been designed to be portable and flexible it allows the artists to travel to various public forests, gardens and parks to experience the life of trees. The sound system and programme by Mathew Dalgleish was designed to provide a range of musical voices and data/sound calibrations to experiment with. In this exhibition Collins and Goto have chosen the Piano for its tonal legibility. Conversations are underway to develop a dedicated, signature voice for the system in the next round of development.

Collins has begun talking to colleagues and manufacturers about a portable backpack monitor and sound system with a 'wand' that would allow a more performative/active approach to the monitoring of trees with movement and music. Discussion has occurred with Prof Hocking regarding a means to monitor a large stand of many trees in a city; an idea that would inform the development of a long-term public installation with a twice daily symphony of trees that begins just before rush hour, and ends with a CO2 crescendo at peak impact; integrating artistic content and scientific truth in what could be understood as a tragic tale of human induced climate change.

In Aberdeen we have developed two maps of the city: one is a view of the city from the Don River, the other provides a view from the Dee River. An imaginary trail of trees has been created that connects the rivers, city and parks. We chose seven places and seven trees for this exhibition. *Plein Air* was used to observe specific trees in these places. In the installation the photographs and sound are the document of each place, a photo of the easel and a tree and the sound of each tree as it responds to CO2. The green house represents our studio. This structure allows us to work daily and develop intimate relationships with various trees in different kinds of weather and seasonal changes. The video projection was developed in the core of the city. This twenty-four hour time-lapse animation, and its voice over considers ideas relevant to Collins' work on art and the role of artists in the production of aesthetic truth and the distribution of creative freedoms. Complimenting that position is Goto's evolving work on empathy which they both feel provides an interesting intentional framework for practical pursuit of the ethical-aesthetic impulse.

The work remains research based following a pattern of collaboration developed at Carnegie Mellon University as Research Fellows from 1996 through 2007. The work remains focused on issues of natural systems and the role of art in the public realm following a long standing professional focus and practice developed in San Francisco from 1983 through 1993.

Den Burn – Cherry

II. Empathy as Premise and Method for Art

We chose empathy, the perception and imaginative exchange of subjective states with foreign subjects and their environment, as the basic premise and method in this exhibition.

Empathy is an act of perceiving in which we reach out to the other to grasp their state or condition. It consists of one's emotional and physical experiences. Empathetic experience moves towards something foreign rather than something familiar, it involves memory and considered imagination.

We comprehend feeling in others by observing the other person's facial expression or bodily gesture because we too express feeling through the body. Expression can take these forms: facial expression, body languages, speech, politics, education and art. These expressions can be called actions. *Action is always the creation of what is not.* (Stein, p.56). Reading the bodies expression of feeling in others can be cultivated.

Empathy is not based on one's self interest. It is a reaching beyond self but without losing or forgetting oneself. We bridge the gap between self and other, known and unknown. We resonate with the feeling of the other and amplify it. Empathy in this sense occurs between subjects. It is inter subjective. In this way empathy helps us to enrich our own world image through interaction with different individuals.

Empathy and sympathy are different.
Sympathy is an act of assuming feeling in another based on what we know. In this sense it is founded in an intellectual understanding in which we rationalize a situation and impose a projection.

Sympathy reflects one's own experience and intellectual understanding rather than reaching beyond it. Empathic experience also involves intellectual understanding expressed as a new idea. Sympathy is based in one's self interest in the context.

Plants do not have feelings, emotions and mobility like we do. They have senses that respond to light, temperature, humidity and air. We have an ability to read their physical states such as vigour and sluggishness or comfort and discomfort.

It is possible to experience plants empathetically through careful observation, memory and imagination. We share the environment with them. But we don't perceive their instantaneous response to the environment; this is what makes them foreign. A gardener can expresses feelings through empathetic relations with plants. Preserving or creating new green spaces involves feelings, new ideas and actions through an empathetic relationship with nature. Empathy allows us to experience how we interrelate with other species and their environment. Observing plants in relation to our mind and feeling can be an important practice for understanding ecological relationships.

In environmental aesthetics there is a discussion by authors such as Emily Brady and Arnold Berleant that explore shifting ideas about the classical separation of subject and object, nature and culture. In critical theory Claire Bishop, Nicholas Bourriaud and Grant Kester have all made important contributions to a social aesthetic. Kester provides a rigorous historic framework, as well as detail on a critical approach to artwork that claims creative exchange and human inter-relationship as art process. He ascribes value through attention to inter-personal ethics and empathy that leads to transformative experience.

This is part of the critical framework the reading and theories that inform Goto and Collins artwork to date. It has provided a foundation for the real challenges Goto was faced with as she began to think through an empathic approach to her practice which is presently informed by a deep reading of "On the Problem of Empathy" by Edith Stein.

Stein, E. (1917) "On The Problem of Empathy" 1989 translation by Stein, W. Washington, D.C.: Institute of Carmelite Studies.

The Dee Trail – Birch

III. Text from the video:
"A Tree is a Living Thing"

This is a 10 minute lapsed-time animation that focuses upon one very large tree set against the Aberdeen City skyline as it reacts to changes that occur over a day. The video opens with view of the sunrise through the spires of Aberdeen. The day goes from quiet and grey to sunny, then cloudy and windy. The tree goes through an amazing set of changes in relation to both the light and the wind. The sky becomes more and more animated until the piece closes with the sunset reflected in the eastern clouds. The content below is overlaid upon the film as spoken narrative.

White on black text, before the sunrise

> ***"So long as I myself am identical with Nature, I understand what a LIVING nature is as well as I understand my own life; I apprehend how this universal life of Nature reveals itself in manifold forms, in progressive developments, in gradual approximations to freedom. As soon, however, as I separate myself... from Nature, nothing remains to me but a dead object, and I cease to comprehend how a life outside me can be possible."***
>
> F.W.J. Schelling, *the Naturphilosophie* p. 36

SPOKEN NARRATIVE

We want to talk about trees while we watch a large Elm interact with the changes that occur in a day. We will start by raising questions about scientific truth versus aesthetic truth, we then move to questions about freedom in the domain of nature, versus freedom in the domain of culture.

We close with thoughts about creativity and inter-being as one way to resolve logical inconsistencies.

A DIALOGUE with LIVING THINGS

Extraordinary LIVING things can stop us in our tracks, and demand our attention. Other LIVING things become familiar through intimate experience and attention over time. If science is defined by useful general truths, is it the role of aesthetics to help us to see specific truths? In other words, if science informs us of what trees are as a set of things and how they function as a biological organism– is it aesthetics that is responsible for the pictures in our head, and the potential to differentiate unique and specific experience from the general idea? How do we value those things that envelop us with unexpected imaginative and aesthetic force? Can we know ourselves through others, through empathic exchange with LIVING things?

Empathy is not based on one's self interest. It is a reaching beyond self but without losing or forgetting oneself. We bridge the gap between self and other, known and unknown. We resonate with the feeling of the *other and amplify it*. Empathy in this sense occurs between subjects; it is inter subjective. In this way empathy helps us to expand how we understand ourselves in relationship to other things.

How do you know when that idea of a tree in your head has been energized or reshaped by the tree you see before you? Does it require a commitment to experience it over hours, a day, a season or years? Is it the comparison between this tree, and all others in your daily life, or over the period of your entire life? Would this mean that the older we are, the better we are at making these judgements? Or are some of us more aware of these things? Can that awareness be taught or learned? Is there any agreement on this matter amongst family, friends and acquaintances? Is it the trunk,

the splay of the branches or the green leafy upper-story that provides you with significant aesthetic clues?

Ultimately these are questions of intrinsic value, where we see the tree as valuable unto itself. What do we need to know, to prepare us for an experiential judgement of a LIVING thing?

NATURE and LIFE: In the days before they became things, were the trees free?

Every LIVING thing carries the reason, the cause and effect of its existence in itself. We understand LIVING things as bodies, or as live forms of material substance that are defined by the relationship of separate parts which make up the whole.

There is an idea that is at the core of all LIVING things, in that they organize themselves, and the form and day to day existence is defined by both purpose and intention. The LIVING thing nourishes itself, through the organization and inter-relationship of the parts.

Life is an idea that sustains a thing. Life is defined by respiration, nutrition, excretion, growth and reproduction. To live, to grow, to reproduce and to age are the natural free conditions of all LIVING things that exist outside the bounds of culture.

In all of this (I) am identical and I am free, as (I) to am a LIVING thing.

SOCIETY and MEN: How did LIVING things become the rightful property of free men?

As the feudal system came to an end ideas of people being ruled by lord and master acting under the auspices of god

and king began to give way to the 18th Century Age of Enlightenment. Autonomous self determination and productivity were the new goals; freedom, democracy, and reason were the methods. It was argued that mans ingenuity and labour mixed with nature through cultivation, husbandry or extraction, resulted in ownership. Ownership was a moral contract, an agreement amongst men to respect the effort and enterprise necessary to secure value from nature. A motto at the time was based on an article by Immanuel Kant, challenging all to 'dare to know' and... to have the courage to use one's own understanding to better oneself.

Not all men were free, and certainly no women at that time. Any LIVING thing, material or resource that could be enclosed, improved and subsumed or presumed as property would be. This idea of autonomous self determination, and the right to own property and vote was initially a small us, and a large them. Then a century later most men, then men and slaves, and eventually women would secure civil and property rights. Corporations were afforded all the rights, protections, privileges, responsibilities, and liabilities under law at the turn of the 20th Century before most women had the right to vote.

There are no real examples of setting other non-human things free, although there have been movements over the past thirty years to protect the rights of LIVING-things that were threatened by private interests. The most specific examples are the endangered species acts and laws which use rational science to define the tipping point, the brink of species failure and a final loss of genetic diversity.

(You) are free as described by a social contract of rights, protections and privileges. All other LIVING things materials and resources as much as they can be defined by their relationship to men are defined as property. (I) am property.

INTER-BEING: Empathy is an imaginative exchange between two LIVING things. Could this be the first step to real freedom?

Empathy is an act of perceiving in which we reach out to the other to grasp their state or condition. It consists of one's emotional and physical experiences. Empathic experience moves towards something foreign rather than something familiar, it involves memory and considered imagination.

To live well is to be free to pursue life to the best of one's capacities and to support similar creative expression in others. To be creative is to live and practice with the intent to renew and add depth to our perception; to seek experience that calls into question the values that define everyday life.

Theory is necessary because the world is full of contradictions that demand creative resolution. Trees are the green infrastructure that shades the streams, knits the soils in steep banks, trees clear the air and cool the hottest days. Trees have great impact; they are a formidable aesthetic presence in our lives. As LIVING things they conduct an exquisite discourse with the sun and air, pumping moisture from the soil to the sky, they provide structure and shelter, serve as both refuge and provision for many others. They benefit others as a condition... of being and inter-being.

We live on an island relatively devoid of trees. We are all responsible and affected by climate change yet trees, the largest LIVING things that isolate the most significant amount of carbon are not as yet allies in an attempt to resolve that contradiction.

Is it aesthetic truth or empathy and morality that initiate ideas of freedom and emancipation? Or is it the potential practical value, the benefit to society that we must consider

as we expand the set of us, to include some of them? Or is it simply a matter of coming to our senses, realizing that culture without nature is a contradiction in terms?

At this point in time, the remaining other is nature, the largest beings of that kingdom and this world, are the trees.

White on black text, after the sunset

> Herbert Marcuse has said, "*Things [nature] have their 'inherent measure': this measure is in them, it is the potential enclosed in them; only man can free it and in doing so, free his own human potential*" (Marcuse, 1972).

Schelling, J. (1803) "Ideas for a Philosophy of Nature". E. E. Harris, P. Heath, R. Stern, 1988 Translation. Cambridge UK: Cambridge University Press.

Marcuse, H. (1972) *Nature and Revolution. Counterrevolution and Revolt.* Boston, MA: Beacon Press

IV. Art, Tools and Technology: The System

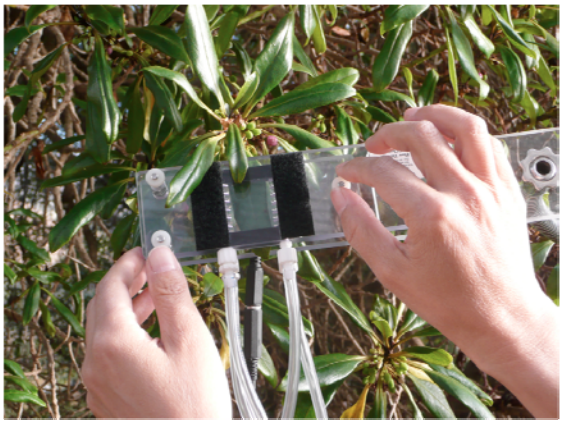
The original painting easels and the innovation of paint in tubes were tools that allowed artists to move outdoors and immerse themselves in the experience of nature. In our project, *Plein Air* is an interactive device that allows us to see and hear how trees are doing in relation to human interaction and atmospheric change. The easel holds plant physiology sensing equipment and computer programs that translate data to sound. The *Plein Air* easel includes a stand that holds a holds a tree leaf chamber. It connects the reactions of that leaf to a number of plant physiology monitoring devices in the easel box. The audience will experience sound that re-presents the trees' response to atmospheric changes particularly in relationship to carbon dioxide; caused by human respiration, transportation, home heating and industrial pollutants.

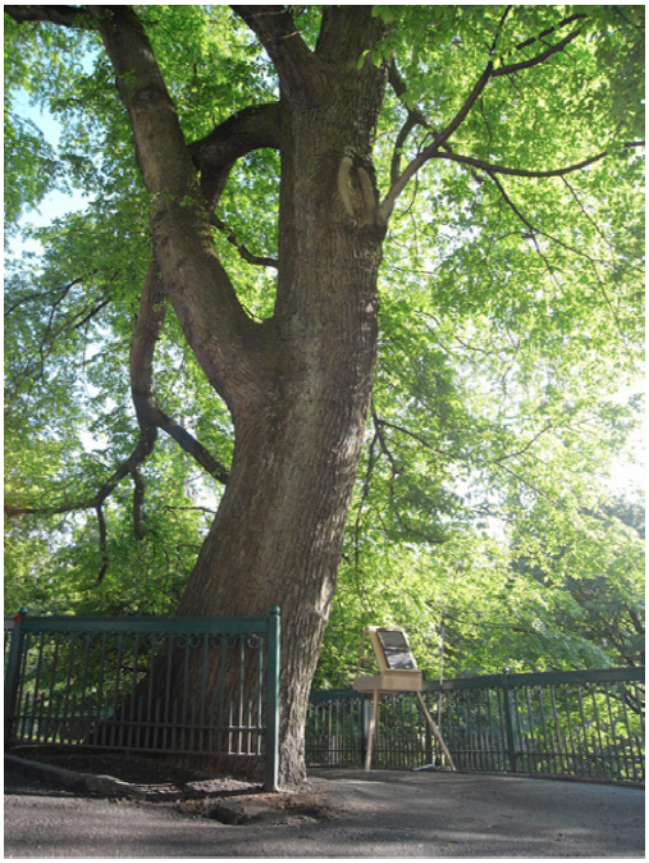
The *Plein Air* easel holds two systems: one is a plant physiology monitoring system the other is a sound system. The physiological system compares atmospheric conditions to the conditions relative to a leaf. The sensors monitor: CO2, humidity, temperature, air flow and light intensity. Mathematical equations based on these parameters give us photosynthesis and transpiration.

The process of photosynthesis begins with a leaf of the tree that is surrounded by atmospheric turbulence. On a leaf there are thousands of small pores called stomata. When the stomata open they take in carbon dioxide. The stomata also control transpiration. Water from the soil is drawn up through the root and up the stem; passing into and through the green leaves. Transpiration maintains the leaf temperature while stomatal control prevents dehydration. Inside the leaf the green substance in plants called chlorophyll processes the sun light, carbon dioxide and water to create a type of sugar that builds the plant body, fruits and seeds. Leaves reduce the CO2 level and produce oxygen during the day time and reverse the activity during

the night. Some plants reduce the CO2 level more than others.

The real-time sound system has been developed by Matthew Dalgleish a PhD candidate at the University of Wolverhampton. He designed, developed and built the hardware and software that transfers the plant physiological data into a sound program. The real-time approach allows us to experience the tree's immediate response as the environment is changing; such as clouds and cars going by, or people breathing close to the tree. The sound exploration is intended to be more than a simple illustration of the scientific data or sonic pattern. It intended to create an experience that allows the user and viewer to feel and share a momentary but heightened sense of environmental awareness as the tree responds to atmospheric changes.





Union Terrace Gardens – Elm

V. Artists Biography

Reiko Goto and Tim Collins are ecological artists. They have collaborated together since 1987. They have lived in the UK for five years, now reside in Stonehaven, Scotland. Reiko is a PhD candidate working with Professor Anne Douglas at 'On the Edge' at Robert Gordon University. Reiko's interests are ecology based - an inquiry of living things in relationship to their environment. Her work has been presented at Capp Street Project in San Francisco and the Walker Art Center in Minneapolis. Tim is currently a visiting research fellow at the Institute for Advanced Studies in the Humanities at the University of Edinburgh. He is currently working on a book that deals with art, aesthetics and environmental change.

http://collinsandgoto.com
http://eden3.net

2000 – 2005
Three Rivers - Second Nature, **a 5 year analysis of green infrastructure systems in Allegheny County Pennsylvania, STUDIO for Creative Inquiry, Carnegie Mellon University, Pittsburgh, Pennsylvania.**

2002
Nine Mile Run and Slag Garden, **in Ecovention. Curated by Sue Spaid and Amy Lipton, Contemporary Art Center, Cincinnati, Ohio. (Goto and Collins with Bingham)**

1999
Watermark, in Natural Realities. Curated by Heike Strelow, The Ludwig Museum, Aachen Germany.

1997 – 2000
Nine Mile Run, Developing a restoration ecology model for a sustainable open space on an urban brownfield. Pittsburgh, Pennsylvania.

1990-1993

Aqua Pura, San Francisco Arts Commission, Art in Public Places. Permanent Public Artwork for San Andreas Water Treatment Facility. San Francisco, California.

Duthie Park – Lime