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Look deep into nature, and then you will understand everything better. Albert Einstein

If we want to attain a living understanding of nature, we must become as flexible and mobile as nature herself.

Johann Wolfgang von Goethe

It is through understanding and awareness that we can love and appreciate.

Abstract

A peaceful, daily experience of life fully immersed within the rhythms, sights, sounds, and scents of the natural world is something that has become a rare or unknown experience for many of us now. Our society generally operates contrary to the wholeness, unity and interconnectedness of our planet. Rational thinking dominates our decision-making and our science harnesses tools that look deeper and deeper into the world beyond our own human senses. This is all separating our natural world from the sensory, intuitive, and experiential beings that we essentially are. The rigorous, intellectual framework that science operates within lacks an outlet for the more intuitive, sensory knowledge that is gained. As art has always had the ability to observe, illuminate, and enlighten, and in a time of increasing environmental and human crises, could a contemporary art practice become the tool that harnesses such experiential knowledge? Could this serve to develop our sensitivity and intuition in order that we gain a deeper and broader understanding of our natural world? And could this lead us to behaviours that nourish us, and our planet? This dissertation explores these questions with a focus on our holistic, human experience of spontaneous plant growth and soil and has emerged out of my own intuitive practice of 'Edaphic Plant Art'.

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For Karen

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Introduction

Throughout humanity's evolution and progress we have grown increasingly more able to manipulate the world around us. Working together, building on what we have learned over time, we have now reached incredible achievements that have taken us further from our origins and allow us a very different life experience than those of our ancestors. All this by our imagination, inventiveness, and the drive to turn those thoughts into reality. The determination to try and try again, to problem solve and to keep going doggedly on a fixed goal using our brains and our bodies have created a world for us full of incredible invention and ingenuity. Our creation of tools and technologies enables us to observe, calculate and construct way beyond our own human capabilities. In our rush to create more and better, to follow the creative energy that takes us step by step along the journey of our chosen focus we feel evermore powerful and justified to control, design, and engineer our world. The force is unstoppable. The pace is relentless. It is impossible for us to return to what we once were. We are truly amazing.

And yet, there is an increasingly growing voice within us asking to slow down, to still, to calm, to be, to see, to understand, to experience, to simplify. Yes, we have done and are doing amazing things but let us not lose, forget, and destroy that natural world that lives, evolves, and continues despite us. The weed that springs forth of its own volition growing and thriving despite all the odds against it does this without us. It does not need us. If it is lucky it will escape our control and chemicals while we are breeding, cross-breeding, genetically manipulating, and cultivating our chosen varieties of its distant relatives. It is that natural world that a long time ago we once knew very well, we were it and it was us. We knew its rhythms, its moods, its abundance and its force. It nourished us and we respected it. Now that harmonious, connected and deeply enriching human relationship with the natural world is an experience that relatively few of us on earth have. We are

increasingly dissatisfied, overwhelmed, aggressive, intolerant, anxious, addicted and exhausted. It is a growing awareness of our disconnection and alienation with our true nature that has many of us now calling for us to protect and respect the planet that has been our home, has given us life and supported us. We are calling for the need to attend to the crisis we are experiencing in our mental, physical, emotional, and spiritual health.

In this context of our current times what use is art? What can art do that has value and significance amid this chaos of seemingly insurmountable obstacles? It is precisely the fluidity, the metamorphic, and omnipotent nature of art and contemporary art practice that equips it with the ability and voice to speak out, to cross boundaries, to juxtapose diverse factions and to illuminate what we can easily overlook.

I hope to show that a contemporary art practice can increase our understanding of the natural world and has value by providing a different perspective than a traditional, scientific approach. Contemporary science is focused more and more at the genetic level, the subatomic level, what cannot be seen and felt by our own senses. Since Decartes (1596-1650) we have valued reason at the expense of feeling, processing and evaluating our experience through a clever, rational, judgmental, thinking, head-centred value system. As such, we currently have a limited emotional intelligence and language, where our intuition is faint and generally disregarded. I hope to show that an environmental or ecological art practice can increase our sensory connection to the natural world, both for the artist and for the viewer. I therefore want to explore the possibility of art to show us nature as it is, help us see it, marvel at it, learn about it and receive nourishment from that experience. I hope that through an increased understanding and awareness of our natural world we can love, respect, appreciate it and find our place

within it again, transforming our beliefs about who we are and the experience of life that is available to us.

Consideration of The Natural World

We have always sought to understand our natural world. We learned which plants would feed us, heal us, cloth us, and provide shelter, and we learned to recognise the quality and health of the soil. Our ancestors, living within the rhythms and cycles of the natural world would have experienced their existence as part of the whole order of being.

We sought to understand how it all worked, what is was made of, how it was all connected and our early thinkers looked into the parts in order to gain insight as to the whole. Leonardo da Vinci (1452-1519) for example used drawing as a way to understand, not only the botanical world, casting his enquiry universally. About this time Albrecht Dürer (1471-1528) was perhaps the first to depict the natural, spontaneous plant life of his surroundings with such skill and accuracy in his beautifully executed watercolour, The Large Turf (Fig. 1). Such a humble, focal topic remained rare for artists, even for those who continued and developed his interest in what became landscape art. Nicolaus Steno (1638-1686) said 'What is most evident receives the least attention' and 'hidden among what I myself have discovered, there are things simpler and more obvious than what I have seen'. He noted that artists often observed the body more accurately than scientists did but that when it came to the earth, artists and scientists shared the same blindness.

Later that began to change and Alexander von Humbolt (1769-1859) played a significant early role in the study of plants in their natural environment, laying the foundations for what has now become biogeography. He is considered to be the father of ecology, the new science proposed by Ernst Haekel (1834-1919) following inspiration

from Charles Darwin's (1809-1882) writings. The foundations of Darwin's theory of natural selection lay in his weed patch experiments where he observed the growth of spontaneously generating plants on patches of bare earth. Ecology became 'the whole science of the relationship of organism to environment', including all the 'conditions for existence' and was to be the study of nature in nature, not in the laboratory.

As we learned more about the natural world, we began to exploit it in greater quantity, and in pursuit of wealth and power we lost our respect, awe, and wonder of it, seeing it merely as a resource to plunder. Those of us troubled by this callousness and destruction raised objections that gradually grew into an environmental movement. John Muir (1838-1914) who recognised the importance of a deep experience within nature became renowned for the establishment of the national parks. Patrick Geddes (1854 -1932) also advocated a respect for nature and the planet as a whole, stating 'by leaves we live'. His appreciation for the interconnectedness of things stimulated his desire to create a larger, holistic view of nature and he coined the term 'think globally, act locally'. He sought to bridge the gap between art and science, environment and society, urban and rural, culture and nature, thought and action, and the academic and the civic. He believed in a life energy that was constantly growing, adapting and seeking expression and that knowledge in all its forms (intellectual, creative, cultural and spiritual) were driven by this force.

In 1962, lamenting the decline of species as a result of widespread pesticide use in agriculture, Rachel Carson (1907-1964) published *Silent Spring* and this sparked an ecological revolution. Her respect and concern for the biological integrity of the earth and all its species influenced the Deep Ecology movement which recognises the inherent worth

of all living beings regardless of their instrumental utility to human needs. Its founder, Arne Ness (1912-2009) called for us to 'think with our hearts'.

E. O. Wilson coined the term biophilia in 1984, describing it as 'the urge to affiliate with other forms of life'. Erich Fromm (1900-1980) spoke about 'the passionate love of life and of all that is alive'. This is considered to be an innate sign of mental and physical health. However, many of us now are experiencing an aversion to nature, a biophobia, or Nature Deficit Disorder, that is increasingly common among those of us who grow up in dense, urban settings with a reliance on technology. Now in our current, 'civilised' societies we spend most of our existence sealed within constructed environments with artificial light and no fresh air. The majority of what we see and hear on a daily basis has been generated by human effort and is very far from the natural world. Life in rural Scotland and many other parts of the world still has a greater connection to, and understanding of the land despite our growing reliance on technology and industrialised farming practices, yet this is becoming increasingly rare.

David Orr (2004) believes that our current environmental and social problems have arisen not through the work of ignorant people, but in fact the most educated people on earth. He believes we need to develop the perceptual and analytical abilities, together with ecological wisdom, to carefully merge our human purposes with the larger patterns and flows of the natural world. He calls this 'ecological design intelligence' and describes it as 'the capacity to understand the ecological context in which humans live, to recognise limits, and to get the scale of things right'. He adds that we need to make things fit in a world of trees, rivers, animals, children, and all life forms. Wendell Berry too, says that 'good design begins by asking, "What is here? What will nature permit us to do here? What will nature help us to do here?"

Experiential Knowledge

Current scientific study of the natural world has splintered into many different specialist areas of focus. Perhaps harshly, Van der Valk writing in 2011 says, 'Ecologists are often more concerned with collecting data to support their hypotheses than with critically evaluating and reconciling their hypotheses with their observations'. With concern over climate change scientists have admirably been collecting and recording changes in the natural world. Yet the structure of the traditional scientific method with its publication and funding requirements and its competitiveness lacks an outlet for the more intuitive, sensory and experiential knowledge that scientists undoubtedly gain through such intense study.

Gordon Miller in 2009 writes,

It is widely acknowledged today that through the growth of the science of matter the Western mind has become more and more removed from contact with nature. Contemporary problems, many arising from the modern scientific method, confront people with the fact that they have become divorced from a realistic appreciation of their place in the larger world. At the same time there is a growing demand for a renewal of contact with nature. It is not enough to dwell in nature sentimentally and aesthetically, grafting such awareness to a scientific infrastructure that largely denies nature. The need is a new science of nature, different from the science of matter and based on other human faculties besides the analytic mind. A basis for this science is the discovery of authentic wholeness.

Miller has photographically illustrated an updated translation and publication of Goethe's 1790 Metamorphosis of Plants (2009). Johann Wolfgang von Goethe (1749 - 1832) produced a large body of scientific work on natural phenomena including plants. David

Seamon in 1998 explains that Goethe 'sought a way to open himself to the things of nature, to listen to what they said, and to identify their core aspects and qualities'. His way of science was unusual because its focus was not on quantifying, classifying, and isolating parts of nature but instead was an intimate, first-hand encounter between the investigator and the whole form. The fundamental basis of Goethe's method was 'the effort to understand a thing's meaning through prolonged empathetic looking and seeing grounded in direct experience'. He believed that 'Natural objects should be sought and investigated as they are and not to suit observers, but respectfully as if they were divine beings'.

Even in his time Goethe was aware that reliance on instruments to observe nature resulted in a separation and distance that could lead to erroneous conclusions,

It is a calamity that the use of experiment has severed nature from man, so that he is content to understand nature merely through what artificial instruments reveal and by so doing even restricts her achievements. Microscopes and telescopes, in actual fact, confuse man's innate clarity of mind'.

Now technology has made great advances and lead to incredible discoveries and yet this reliance on tools for observation still removes us from a direct sensory experience of nature that may yield greater insights in our understanding. Later, Albert Einstein (1879-1955) was to say, 'We still do not know one thousandth of one percent of what nature has revealed to us'.

Goethe believed 'The human being himself, to the extent that he makes sound use of his senses, is the most exact physical apparatus that can exist'. And yet he was profoundly

aware that not all observers are equal in their ability to see. Developing, refining and honing our capacity for deep observation is something that each one of us has to develop over time in order to truly observe and understand. Goethe spoke of this and the importance of training in order to develop these greater powers of perception which he believed required effort and perseverance.

There may be a difference between seeing and seeing. . . . The eyes of the spirit have to work in perpetual living connexion with those of the body, for one otherwise risks seeing yet seeing past a thing.

He also went further, believing that truly experiencing, observing, and understanding nature became a mutual exchange whereby we are changed by that experience, 'Each phenomenon in nature, rightly observed, wakens in us a new organ of inner understanding'.

L. L. Whyte (1986-1972) explains that Goethe's central ambition was 'to see all nature as one, to discover an objective principle of continuity running through the whole'. He believed that through this understanding of the unity of nature we could come to understand ourselves better. Seamon echoes this further adding that Goethe's method teaches a mode of interaction with our environment that involves reciprocity, wonderment, and gratitude.

Rudolf Steiner (1861-1925) developed Goethe's thinking much further into the Biodynamic method of agriculture and wrote extensively on the highly perceptive and intuitive abilities of our ancestors. Yet the scientist, Agnes Arber (1879-1960) too deserves significant consideration being a key figure in plant morphology, in the historical review of herbals, botanists, and an interpreter of Goethean plant science. Arber was also the first woman

fellow of the Royal Society. She illustrated her own work and believed there was 'a certain correlation between artistic power and morphological insight'. She too recognised the importance of combining perceptive and intellectual activity. She wrote Goethe's Botany (1946) and The Natural Philosophy of Plant Form (1950). In the latter publication she makes reference to the old Scottish word, makdome. This corresponds to the Latin, forma which goes beyond the English definition of form carrying with it too the implication of elegance and conveys 'a certain suggestion of the harmony which is characteristic of the organisation of living things'. Goethe originated the science of morphology, the Greek root of which, morphe too goes beyond the English term shape and signifies 'the outward expression of an inner essence'.

Arber possessed the scientific training and rigour that Goethe lacked and so was equipped to contribute a critical appraisal of his work where others dismissed it outright with the belief that his efforts should have been concentrated solely on his poetry. Goethe had originally been impressed by the Linnaean classification system of plants but later became dissatisfied by the minute counting and analysis of the floral parts that was required. Arber notes that Wolff a contemporary in his field of study was primarily 'a scientific thinker' whereas Goethe was primarily 'an intuitive thinker'. She explains that Goethe thought of himself as a 'gazer' of nature rather than an investigator. Arber recognises his contribution to comparative plant morphology yet adds that his original approach to reconcile the senses and the intellect was not acceptable to traditional science.

In order to regain this intelligence and understanding of our natural world and how it works fully it is perhaps necessary now that we develop and deepen our sensitivity and intuition. For this we need to slow down, notice, experience, and tune-in to the world that is

increasingly disappearing as a result of our ever-expanding development and construction. Could a contemporary art practice help us to hone these skills and lead the way to establish an interdisciplinary approach which draws on ecological science, the humanities, love, faith, mindfulness, and the artists' sensitivities of seeing and recognising beauty. Martinique writing in 2016 believes that in this age of the Anthropocene where human activities have significantly impacted our climate, geology and ecosystems, the work of environmental artists seems more relevant and needed than ever.

Within our modern times, artists started making art in or on the land with its materials in the late 60s. As some artists made vast, destructive works with the land, others were driven to consider our existence and experience within the natural world and our responsibility to protecting it. As a result artists began creating work that directly questioned our impact on the earth and this began to be viewed as environmental and ecological art. Toland & Wessolek suggest that following criticisms on the environmental impact of early Land and Earth Art, Joseph Beuys' (1921-1986) Earth Telephone (1968) could be interpreted as a symbol of communication between humankind and nature and that it invited other artists to follow a subtler, more sustainable path. Writing in 2016, Bijvoet notes that nature in all its different forms has regained a real position in art during the past fifty years. Martinique adds, 'In a general sense, it can be argued that environmental art aims to improve our relationship with the natural world'.

Experiential Understanding through Art

This forms the main body of this enquiry and focuses on a selection of artworks that offer an experiential engagement with the earth, soil and/or natural plant growth.

Walter de Maria, New York Earth Room

Walter de Maria was one of the original artists whose work was described as Land Art or Earth Art. Unlike much of the work of these artists at the time his work, Earth Room was exhibited indoors in the gallery setting and was perhaps more sensitive and contemplative than others. Earth Room (1977) (Fig. 2) is the one remaining work of an original three made in different locations. Despite the original intention to show the work for 3 months, this year saw its 40th anniversary in what has now become a permanent, or on-going exhibition maintained by the Dia Art Foundation in the heart of Manhattan and has outlived its creator who died in 2013. The work is a vast quantity of soil entirely filling the floor space of a New York loft apartment to a depth of half a meter. Visitors can only view the work from the entrance of the space and are prohibited from photographing the work. It is therefore a visceral, sensory experience of the smell, colour, texture, depth and expanse of earth rarely considered and experienced in such an isolated context. Then to experience the soil to this degree of quiet contemplation within a space that would otherwise be a lived-in interior, perhaps a bedroom in an apartment block adds another level of intimacy and unexpected commingling of the urban and natural. De Maria deliberately said little about the intention of his work, describing it merely as a 'minimal, horizontal, interior earth sculpture' leaving it up to the viewer to find and consider its layers of meaning. That the work has now become a sensitive and contemplative work that attracts greater numbers of visitors each year is something that has evolved over time. At its first inception it was probably experienced as a bold, shocking, provocative work that

viewers may or may not have made sense of or might have had difficulty with. Some probably still do. Yet now with our current understanding of the harm that we are doing to the earth this work has taken on a particular poignancy and is perhaps why it has become more popular over recent years. It has remained here quietly while urban development has advanced around it within the throng of an ever growing, ever changing fast-paced city. The contrast between the noise and bustle of this New York neighbourhood and the peace that is found within the Earth Room is possibly what attracts visitors most and sees them return again and again. It is this peace and sense of time that Bill Dilworth who has been care-taking the work since 1989 appreciates and sees visitors react to. Kyle Chayka writing recently in the Paris Review, has this to say about the work:

De Maria's work is about sensory experience: the sheer feeling of being in the presence of so much earth. It's grounding, in a literal and metaphysical sense.

Dilworth sees a particular message coming to the fore more recently, however, about our increasing isolation from earth and our impact on the planet as climate change becomes more blatant. The way Earth Room shelters a small parcel of dirt, keeping it fresh and protecting it, draws out our ancestral connection to the material. 'It's like a flag for preserving Earth', Dilworth said. 'It's important that people understand it is worth preserving, and this can remind them'.

An interview with Dilworth by Lisa Rovner in 2013 identifies the visceral qualities of the work noting that it is 'characterised by intuition or instinct rather than intellect' and that despite *Earth Room's* absence of anything but soil, 'it is somehow full - full of meaning, reflection and truth'. 'It tells so much about the world we live in, mainly through juxtaposition and contrast'. Dilworth tells her, 'It's not a thing you can get tired of. It's earth. There is an ancestral longing to connect with the earth. It's sort of answering these

unasked questions, and that's part of its appeal. The longer I'm here, the more I like it, because I've witnessed the effect it's had on others'.

An unintentional aspect of the work that has come through years of tending and maintaining the work has been Dilworth's experiential learning and understanding of this soil. Despite only ever intending to be a vast quantity of earth shown within an urban interior, its natural vitality has required constant attention to keep it looking like earth, preventing changes in its texture as a result of drying and compacting. Weeding out plant seedlings, the growth of fungi and the hatching out of insects has shown the living nature of this soil and the spontaneous life held within it. Over time this growth has slowed as a result of the gradual exhaustion of the nutrients held within the earth and perhaps serves as a significant and timely metaphor for the depleted nutrient content of our soils worldwide. Through the existence of this artwork, one man has gained a deep, experiential understanding of a body of soil and thousands of visitors have breathed its scent, viewed its texture and contemplated its existence and what that might mean for us. Dilworth who has a great love and appreciation of the work also says, 'I'd love to see an Earth Room out in the country. That's where the real balance is'. This is interesting in itself and raises a number of questions around our disconnection with the natural world, the earth, the soil and our experience of our place within that. What is also interesting is that the work was originally installed with electric lighting. Dilworth mostly chooses to turn this off and leave the work to be experienced in natural light. He personally prefers this and has observed that viewers will stay longer in this natural light than with the electric illumination. This is yet another small indication of our comfort and preference to the natural world despite our current daily experience mostly apart from it.

Jason Rosenfield writing on Walter de Maria's work in the Brooklyn Rail says,

Land art treats the earth as an object, as a surface to be changed and manipulated.

In this sense, it mirrors human endeavour over time. But while humans have abused the planet and brought it to a state of environmental crisis, Land Art now helps us see the very best of the planet more resolutely: it's innate drama and it's benign disregard.

In the press release for his Munich show, De Maria states, 'The dirt (or earth) is there not only to be seen but to be thought about!' (Gildor, 2016).

Also at this time, as part of Cornell's Earth Art exhibition in 1969, David Medalla and Hans Haacke encouraged us to pay attention to this fundamental material. In Medalla's work, Earth Mound an oblong pile of earth was allowed to weather outside where 'changes in weather and temperature imparted a constantly varying appearance to the work'. Haacke's work, Grass Grows (Fig. 3) installed in the gallery went further to consider the vital aspect of the soil. This mound of earth sown with grass seed was allowed to grow for the duration exhibition. He explained, 'The shape of this mound is of no relevance. I'm not interested in the form. I'm more interested in the growth of plants - growth as a phenomenon which is something that is outside the realm of forms, composition, etc., and has to do with interaction of forces and interaction of energies and information'. (This work was recreated in 2012 at MIT, Boston). Jan Dibbets also made a further step towards the natural in his outdoor work Grass square in the same exhibition saying 'It was something much larger that just a desire to work with grass, you know. I realized very well that what I saw around me impressed me much more than art ever could'.

Abraham Cruzevillegas, Empty Lot

Much later in the same vein though perhaps unconscious of these works, Abraham

Cruzvillegas gathered earth from different sites across London, including Buckingham

Palace. These samples were exhibited in individual, triangular raised beds within the Tate's Turbine Hall. Reminiscent of Darwin's weed patch experiments this work, *Empty Lot* (2015) (Fig. 4) was shown for six months in the London gallery and regularly watered to encourage the spontaneous growth of whatever the soil contained. Lighting was provided by lamp structures created from found materials gathered around the city. All was left to chance and Cruzvelligas, comfortable with the unknown quality of his work watched expectantly as *Empty Lot* became a public experiment, explaining 'This installation is made of soil, water, light, scaffolding, and hope'.

In the production of his own artwork, Cruzvillegas who is not a gardener, who knows little about the earth comes to a deeper understanding and awareness of the soil, noting that even without plant growth 'there is a lot of activity already there', 'l've seen many worms and bugs, little beetles...'. Conversing with Cruzvillegas, Paul Farley notes, 'This isn't just soil. Soil is incredibly interesting because of how loaded it is, in any culture'. Adrian Searle posits that Cruzvillegas is 'inviting nature as a creative agent' and takes pleasure in the various colours and textures of the soil. Charlotte Walsh writing in 2015 adds 'In a city of withering wilderness, where land is being gobbled up for property development and luxury apartment suites, *Empty Lot* is a blatant alarm against an endangered Eden'.

The conceptual and contemplative aspects of *Empty Lot* are noted by Madeline Ann Harlow in 2016 who highlights the ability of the work to draw our attention to the global issue of soil health, '...you can honestly see the difference in soil, some is healthy where others are not'. Mark Hudson notices, 'Some areas are already sprouting weeds a foot high, others remain barren and stony.'

Farley makes reference to De Maria's *Earth Room* and notes the contrasting nature of the management of the soil. In *Earth Room* it is a strange kind of gardening where the tending of the earth is about supressing growth whereas in *Empty Lot* it is about the acceptance that things might grow.

Interestingly, the frustrations experienced by viewers of *Empty Lot* were as a result of not being able to get close enough to have a more visceral and deeper sensory experience of it (Searle, 2015).

herman de vries, sanctuarium works and meadow

Despite the issues that Earth Room and Empty Lot intentionally or unintentionally raise and the contemplation they provoke in us, these questions concerning the natural world do not form the entire working practice of these artists. For the Dutch artist herman de vries however (who in an attempt to reduce notions of hierarchy choses not to capitalise words) this consideration of, working with, understanding and living with the natural, growing, biological and botanical processes of our world is his very existence. For de vries nature 'is our primary reality' and 'his aim is to create an awareness of being a human within nature' (De Jongh & Gold, 2016). As a biologist who became increasingly more interested in art de vries evolved into his art practice as a way of developing his fundamental interest in the natural world. de vries also works with earth, rubbing it directly onto paper, highlighting the variety and range of earth colours that exist worldwide. As a result of this process he now has an extensive earth library with samples collectedly globally. There is much, much more that de vries has done concerning the natural world but considering growth in particular his sanctuary series of works and his own meadow are fundamentally significant. Unlike Earth Room and Empty Lot, de vries' sanctuarium works are located outside in the world beyond the gallery setting. Since the emergence of the Land Artists

this is nothing new. However instead of using the materials of the land to make artwork; or using the land as a place to site an artwork; or using the land to reshape or mould into an artwork, herman de vries allows the land to do what it does and invites us to watch.

The Stuttgart sanctuarium installed in 1993 (Fig. 5) to coincide with the International Horticultural Exhibition and the Münster sanctuarium made in 1997 are both circular enclosures of green space within the public domain of these cities. In Stuttgart this space is what psychogeographer, Will Self might call a non-space, existing in a corner where roads converge and not intended to be accessed, de vries' enclosure in Stuttgart takes the form of a metal, spear-headed fence topped with gold leaf while the Münster sanctuarium is enclosed by a circular brick wall with four viewing holes. Both enclosures prevent human access and allow nature to take over without human intervention. These are places where nature can grow freely and this is what de vries intends, providing a sanctuary for the natural world where we cannot touch it. The very fact that we are separated from this growth is something that many of us might find frustrating though it is unclear whether de vries considers this. That the wall of the Münster sanctuarium is now covered in graffiti and litter is thrown into the wild space may be a reflection of this, or not. It leaves us outside, apart, alienated from it but ironically it is precisely this that we have done to ourselves. Because we have not been able to value and appreciate this growing, living, natural world, have sought only to destroy it and use it as a material resource we now find ourselves disconnected from it. It is perhaps something akin to the national parks we have created that are held separate from the lives we live daily. Eckhard Kluth writing on the Münster sanctuarium notes that the park in which de vries' work is sited is based on the historical notion of the English landscape garden where every plant has been selected and positioned with great care and consideration, nothing is left to chance. He continues, 'de vries makes us aware that even if areas of vegetation in urban spaces may act as green

lungs, they are in fact an amputated and impoverished nature. In contrast, de vries work is all about chance.

Chance and change is a fundamental consideration in de vries' work and this is allowed full reign in his own meadow ('weise') (Fig. 7) that he and his wife have been tending since 1986 after purchasing a small strip of land between agricultural fields and the Steiger forest. Writing in 1992, Michael Fehr says, 'herman's meadow is discernable even from a distance – not as a meadow, but as a peculiar, different moment, as a wild, unrestrained piece of land in the midst of a cleared landscape'. 'It drives like a wedge out of the forest into the open field of industrialised agriculture, radiating more than formal unrest. For it is bursting with life'.

Unlike his sanctuary works there has been deliberated planting and managing of this meadow in order to restore the land from the sterility and nutrient imbalance that has occurred as a result of the agricultural practices of pesticide and fertiliser application.

Now in stark contrast to the surrounding agricultural land, plant, insect, and animal life here is abundant. Many edible plants and fruits thrive here too harking back to a time of foraging before intensive agriculture destroyed this diversity.

Working as an artist with the natural materials of his meadow and the scientific methods he was trained in de vries generates a new method that yields further knowledge showing us that all is not quite as science tells us it is. Fehr describes how de vries' opens up the border between science and art by his practice of utilising simple methods which have been tried and tested in both the artistic and scientific context such as collecting, drying, grinding and classifying. He collects the natural materials around him as he finds them and presents them in art works that astonish us with the diversity in forms and colours within

species that science seeks to unify. de vries experiential observations presented as art forms take his work beyond scientific study and our habitual modes of perception, opening our eyes and revealing to us an underlying principle or plan within each unique form (Fehr 1992). As De Jongh & Gold point out, 'The works are like a trace of de vries' existence, but at the same time, they record attempts to make nature available to the perception of others.'

Mel Gooding writing in 2005 on de vries' body of work as a whole says,

It is the more impressive and moving for its vital connection with the great collaborative work of all those scientists, ecologists, philosophers, poets and artists whose primary and urgent concern is the survival of the living world. They seek, collectively, an understanding of the proper place of the human within the natural, and of the ineluctable interdependence of all living things in the fragile biosphere we share.

He adds that 'de vries takes for granted the coexistence (or the existence of each within the other) of science, art and poetry, recognising that these activities all begin in being on the earth, in the apprehension of natural phenomena, and our thoughts and feelings about them.'

Echos of de vries approach and interests can be found within the work of other current artists too. Garry Fabian Miller's photographic works with leaves also marvels at and shows the variety to be found in a particular species of plant. Andy Goldsworthy draws attention to this variety through the creation of ephemeral sculptural forms and patterns. Marianne Greve's work One Earth Altar shows the range in soil variety and benefits from

her background in biology. David Nash has lived and worked with the same piece of land for decades observing it and shaping living trees in his work *Ash Dome*.

Newton and Helen Mayer Harrison too worked with a meadow in what became Endangered Meadows of Europe 1994 and they have always considered themselves to be environmental & ecological artists bringing attention to environmental issues. An early work of theirs in 1970, Making Earth focused on the global issue of depleted soils.

Endangered Meadows transplanted a 400-year-old meadow onto the rooftop of the Kunst Art Museum in Bonn where it remained for two years with visitor access, highlighting the destruction of meadows across Europe as a result of urban development.

Now, Jacques Nimski in his *Floreligium* (Fig. 8) works deliberately sows and tends meadows within the gallery in order that we notice, experience, and pay attention to these wild plants. He also catalogues site-specific work with a scientific approach. He continues the historical tradition of the Florilegum yet does this with plants that we consider weeds. Like Michael Landy's *Nourishment* series we are shown the beauty of these ill-considered plants and asked to reconsider our judgments. Ikon's exhibition guide describes how in Nimki's *Florilegium* 'the outsiders of the plant world can be found'. He 'holds them up for reconsideration, bringing to light their medicinal, magical and aesthetic qualities, thus challenging traditional notions of value and beauty'.

In MEADOW (Fig. 9) Tania Kovats too worked with a meadow, transporting it on a canal barge from Bath to London. Her work is rooted in 'the experience and understanding of landscape' and often involves travel. She says, 'Art can encourage you to take care, to love things more, it's an ecology'. Writing on Kovats in 2015, Karen Orton says 'she engages with science and ecology on her own terms'. Prior to Kovat's MEADOW, a similar

work had been sketched out in 1970 by Robert Smithson, one of the pioneers of Land Art. *Floating Island* (Fig. 10) was made to his design in 2005 long after his death. Smithson's intention was a comment on the 'artificiality of the "natural landscape" of Central Park'.

Alan Sonfist, Time Landscapes

Many of these ideas are embodied in what appears at first sight to be another urban park in Manhattan yet is Alan Sonfist's *Time Landscape* (Fig. 11) created in 1968 as a memorial to the ecology of historical landscape. Sonfist explains, 'As in war monuments that record the life and death of soldiers, the life and death of natural phenomena such as rivers, springs, and natural outcroppings need to be remembered. Public art can be a reminder that the city was once a forest or a marsh'. Plants that were once native to this area before construction of the city now grow here again, evolving over time. Grande in 2009 writes, 'Time Landscape now stands as a major living urban monument to the ecological art movement and its integration into the language of art'.

The deliberate planting of natural species in Sonfist's work has allowed us to experience the growth and development of a natural area, observing its stages of growth and all this within the bustling, constructed city environment. Later, in Kassel, Joseph Beuys' work 7000 oaks (1982) also highlighted the condition of the environment through the planting of this quantity of trees in order to effect environmental and social change. Martinique writing in 2016 says this was 'arguably the most celebrated instance of ecologically aware Environmental Art in the late 20th century'. Here in Scotland, 49 acorns from Beuys' original oaks were planted in 2015 as part of Deveron Arts' White Wood project involving the artist, Caroline Wendling as a 'living monument to peace'.

Dalziel + Scullion, Rosnes bench

The multi-disciplinary practice of the Scottish artists, Dalziel + Scullion is 'a continual exploration of new ways to engage with the environment and its ecology'. As film works, Source (2003) and Tumadh:Immersion (2015) (Fig. 12) cannot offer actual experiential contact with the materials of the land. However, the immersive scale and high definition filming of plants, earth, weather and all that nature is, with its pace and sounds brings us closer to the real experience. It tempts us out into the land again, reminds us of what we are missing and shows those of us who have not had this experience of the natural world that there is nothing to fear here. Judith Findlay writing on Source describes how their work 'beckons us closer and ever deeper into nature itself: a showing more than a telling, of new ways of perceiving, defining, relating to and living in our world'. Tumadh echos the scientific tradition of observing and recording nature and is accompanied by the Immersion garments, Rain, Silhouette, Recumbent, and Gather designed for each particular act.

The artists believe that 'artworks can enable or facilitate a tuning into nature's rhythms and textures, sensually reconnecting the human body to the elemental earth' and their Rosnes Bench work (2015) (Fig. 13) offers this fully immersive experience in the natural world. The 30 benches, designed with echoes of ancient cup and ring markings and fixed within the Scottish countryside are to be lain upon. This offers a change in pace, in perspective and is a shift from moving and doing within the landscape to the experience of stilling, being and observing.

They say that to be 'sensually aware is to be engaged and so to lose the distinction between self and other, between nature and human nature. Perception thus defined, is a form of attention, or tending to, and implies relationship and so responsibility', and that by

'challenging the perspective of the audience' they aim to make people 'feel and experience landscape differently, perhaps even place alternative values on the environmental aspects they encounter in their own day-to-day lives'. Their work is all about slowing down and paying more attention. It is the multisensory attention to detail that they are concerned with inspired by the thinking of David Abrams who writes 'when we really awake to the life of our senses [...] we discover that nothing in the world around us is directly experienced as a passive or inanimate object — each thing has its own secrets and experience.'

In the early earth art movement it was noted that the artists' concern was for elemental material and its use to 'sharpen sensory and intellectual perception'. Writing on Dalziel & Scullion's work notes that these qualities may have lain dormant and that 'The artworks become conduits between people and nature, helping audiences experience our shared environment from alternative perspectives, with the aim of re-establishing our connection with nature and the non-human species we live alongside.'

The Edinburgh based artists, Collins Goto also have an immersive, experiential and phenomenological approach to their work, and since 1985 have embraced 'an ecosystems methodology, collaborating with a range of disciplines, communities and other living things' with a focus on environmental change.

Conclusion

This brief overview opens the way to a deeper enquiry into the possibility of developing our intuitive abilities through an experiential, sensory approach to understanding our natural world, and how art might contribute to this. The varying ways each artist uses natural soil and/or plants in their work all contribute to this goal even if the artist does this

unconsciously. From presenting earth and spontaneous growth out of its natural context, allowing natural growth free reign within a managed, outdoor environment, moving it as performance, to then inviting us in and immersing us in it with a change in perspective we see how art might assist us. What is clear is that a multidisciplinary approach is required. It is precisely our multi-sensory experience of the world that calls us to seek an understanding through an interdisciplinary approach. How science and art can collaborate effectively is something that is evolving too through individual practitioners, collectives, institutes and educational courses.

This dissertation has focused on the artists educating us through a sensory experience of plants and the earth in which they grow yet it also touches upon more. It is helping us to see, experience and understand nature and our part in it through new ways not traditionally considered as art and has joined the multitude of voices that call us to take responsibility to protect what we are damaging, this vital life force that has been nurturing, healing, and oxygenating us for so long. These works serve as a springboard for contemporary artists to create art that educates and provides a sensory, visceral, intuitive experience of the natural world.

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Appendix: Images



Figure 1. The Large Turf. Albrecht Dürer. 1503

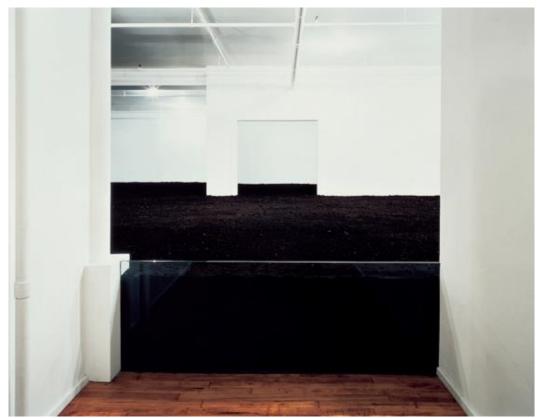


Figure 2. Earth Room. Walter De Maria. © John Clett Dia Art Foundation



Figure 3. Grass Grows, Hans Haacke. 1969 © Adagp, Paris



Figure 4. Empty Lot. Abraham Cruzvillegas. 2015 © Cruzvillegas



Figure 5. sanctuarium, herman de vries. 1993 Stuttgart © Lasse Maddey



Figure 6. sanctuarium, herman de vries. Münster © Gerhard H. Kock



Figure 7. meadow, herman and susanne de vries. 2013 © Peter Foolen



Figure 8. Floreligium, Jacques Nimki. 2007 © Ikon Gallery



Figure 9. MEADOW, Tania Kovats. 2006 © Tania Kovats



Figure 10. Floating Island, Robert Smithson, posthumously. 2005 ©Desbiens



Figure 11. Time Landscape, Alan Sonfist. 1994 © Alan Sonfist



Figure 12. Tumadh:immersion, Dalziel+Scullion. 2014 © Dalziel+Scullion



Figure 13. Rosnes Bench, Dalziel+Scullion. 2015 © Dalziel+Scullion