'Grounded Media':
Expanding the Scope of Ecological Art Practices Within New Media Arts Culture

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ABSTRACT

'Grounded Media' is a form of art practice focused around the understanding that our ecological crisis is also a cultural crisis, perpetuated by our sense of separation from the material and immaterial ecologies upon which we depend. This misunderstanding of relationships manifests not only as environmental breakdown, but also in the hemorrhaging of our social fabric.

'Grounded Media' is consistent with an approach to media art making that I name 'ecosophical' and 'praxis-led' – which seeks through a range of strategies, to draw attention to the integrity, diversity and efficacy of the biophysical, social and electronic environments of which we are an integral part. It undertakes this through particular choices of location, interaction design, participative strategies and performative direction. This form of working emerged out of the production of two major projects, *Grounded Light* [8] and *Shifting Intimacies* [9] and is evident in a recent prototypical wearable art project called *In_Step* [6]. The following analysis and reflections will assist in promoting new, sustainable roles for media artists who are similarly interested in attuning their practices.

Keywords
Media art, ecology, interactive installation, art and environment, ecosophy, ecosophical practice, environmental art, ecological art, media and performance, electronic art, time based media, embodiment, practice led research methodology.

1: INTRODUCTION

Numerous commentators have suggested that we have developed (in the West at least) a deeply ingrained belief in humanity's hegemony over the non-human world. Eco design philosopher Tony Fry goes further, suggesting that this belief has led to a perceptual sense of separation; "[an] absolute blindness to the fact of our connectedness to both material and immaterial ecologies." ([30] p.3). He concludes, "No matter what we have come to believe … 'we' are not individuated entities but relational beings."

Terrorism and climate catastrophe are each indicators of this rapidly unfolding collective crisis of relationship. These problems cannot be solved by 'scientists' or 'security experts" - they are all of our problems, and they will remain so until we begin to change the fundamental images that we hold of ourselves.

My media arts practice seeks to contribute to changing this status quo through a praxis-led approach to art making that I have named 'Grounded Media'. This concurs with the Aristotelian conception of praxis which concerns the thoughts and actions that comprise our ethical and political life, focused upon furthering human well being, and by extension, nonhuman well being.

> The mark of a prudent man [is] to be able to deliberate rightly about what is good and what is advantageous for himself; not in particular respects, e.g. what is good for health or physical strength, but what is conducive to the good life generally. ([1] p.209).

'Grounded Media' forms are therefore underpinned by a methodology that seeks to contribute towards changing the status quo. This expands substantially on Gray's limited definition of a praxis-led arts research methodology that is,

> initiated in practice, where the questions, problems and challenges are identified and formed by the needs of practice and practitioners. [33]

'Grounded Media' forms hone in upon the cultural dimensions of ecological problems through particular choices of location, interactive strategies and performative interventions. These activities aim to create experiences in which participants may, over time, slowly begin to sense their shared roles within complex webs of energetic relations that connect them with other inhabitants within the media work, and, through metaphorical association, with the ecologically and socially connected worlds beyond. Participants are therefore encouraged to reflect upon their actions both during and after the work through conversation and writing in order to gradually understand the range of local and networked factors shaping their experiences and the systemic influences that affect them. This mode of practice embraces the

goals of an ecosophical practice [2, 4] that is concerned with participation and social relatedness.

I reached this understanding of a 'Grounded Media' approach to art making through the analysis of two artworks: *Grounded Light* [8] and *Shifting Intimacies* [9] , setting them in the context of other relevant contemporary practices. This in turn led to a recent prototypical wearable art project called *In_Step* [6] which I refer to briefly in the Conclusions.

This paper therefore suggests expanding the scope for contemporary forms of ecological art practices within the media arts in ways that strongly address foundational aspects of our ecological crisis. It also reflects upon the sustainable roles that media artists committed to active, ecological citizenship might pioneer, both through their thoughtful commitment to the future of digital media, and their commitment to the evolution of collective, sustaining futures.

2: BACK-GROUND

An event horizon [25] is a curious phenomena from relativity theory – it defines the edges of a black hole, far away from any ground we know. Nothing that falls across an event horizon will ever be seen again - and neither can it ever again affect the viewer. It is as if we have believed up to now that, on our planet, such an event horizon existed – a place to deposit our mistakes and forget them without penalty. How could we have been so wrong?

Much has been written [22, 42, 43] about our dualistic conceptions that image 'nature' and 'culture' and the 'designed' and the 'natural' as separate, opposites[1]. Whilst the penetration of human designed technologies into every aspect of life has further collapsed these divisions we still attempt to embody them. Our enduring inability to let go of such anthropocentric blindnesses prevents us from truly living with and in the world, rather than being alienated from it [27, 28].

> The earth is not dying, it's being killed, and the people who are doing it have names and addresses. ([46] p.1).

What we face today is a deep ontological dilemma that we have to urgently understand in order to 're-design'. This necessitates us to develop new images of ourselves – images of what it means to be human that are culturally and socially appropriate[2], built upon a commitment to the global commons.

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[1] In concert Western Environmentalism has also suffered from a biocentric bias that has tended to focus upon symptoms and neglect of causes. See [37]

[2] For example within Islam, to be human is to be a believer. Many indigenous cultures do not conceive the human as an indivisible individual and may instead strongly acknowledge animality. Furthermore Post-humanists such as Donna Haraway [36] assert that we are in fact hybrids of machine and organism.

Our predominant (Western) image/mirage of separation has encouraged the ecological crisis to ride over the event horizon and invade our middle ground, foregrounding itself as our crisis of self (and by extension the other), a crisis of the everywhere - a disaster of yesterday, tomorrow and right this minute. Nothing - animal, mineral or digital can be separated from the slowly overpowering storm that we have mis-named progress.

> His eyes are staring, his mouth is open, his wings are spread. This is how one pictures the angel of history. His face is turned toward the past. [12]
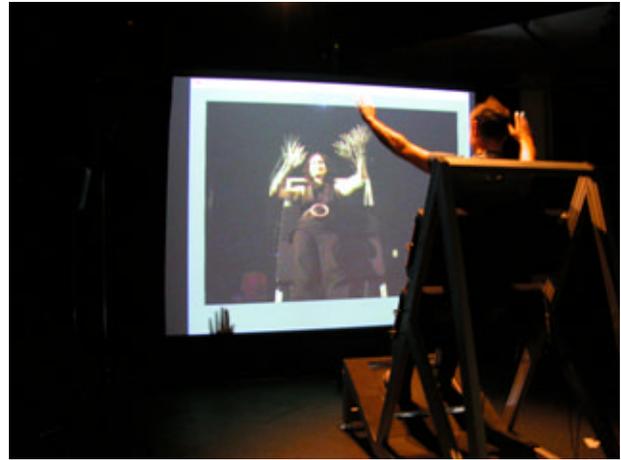

Figure 1. *Intimate Transactions,* 2005-date developed an interface technology called the Bodyshelf, which grounded the participant through a focus on their bodily 'centre'. See www.intimatetransactions.com. Photograph Keith Armstrong.

Walter Benjamin's *Angel of History* [12] image is indicative. It depicts an impotent figure of humanity, rushing blinded into the future, whipped up on the eye of a storm, violently showered with all the detritus and desserts of history. "This storm is what we call progress"[12]. This contrasts dramatically with the Maori aphorism to 'walk backwards into the future' – which highlights the importance of seeking to understand the present and make informed decisions about the future through reference to the past.

However making informed decisions with reference to the past becomes much harder when there are limited precedents for many of today's contemporary technologies. It is a truism to state that all of our current ecological problems are caused by the unexpected side effects of technologies, in concert with our failure the grasp these impacts when they were brought into being, together with the consequences of the creation of a mass market demand for them. Technologies act as 'mechanisms of erasure' through their processes of constant displacement via upgrading. In that sense the more technology there is, the more 'forgetting' that must eventuate via the production of an information environment beyond the image – that which Tony Fry calls the "televisual"[3]

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[3] He reminds us that while we have an infinite ability recover information we still have a very limited sense of the digital desert in which it is lodged.

[29]. Given that we now live in such an environment where technologies that we have designed are inherent, integral and implicate and directive, any changes that we now subsequently make must happen in close, engagement with the transformation of our existing practices and technologies.

Technologies have opened up a plethora of new industrial processes and opportunities. Writer and techno-evangelist Thomas Friedman [26] in *The World is Flat!* sweeps us along with tales of these globalising inventions such as "Work Flow Software", "Uploading", "Outsourcing", "Off Shoring" and "Supply Chaining", each of which are dependent on profligate personal info-technologies that he likens to our "new steroids". He then marvels at length at how his recently ordered Dell laptop's myriad components came from innumerable sources and numerous countries, all assembled within ultra-short time periods. Conventionally he avoids dirtying his description with all of the 'fugitive' costs of this flat-tech marvel whilst a reviewer on the dust jacket [26] declares without irony that "the cost of communications is falling towards zero".

> The angel would like to stay, awaken the dead, and make whole what has been smashed. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage and hurls it in front of his feet. [12]

What we have imagined across many generations, is an inexhaustible world[4] built upon a pursuit of quantity rather than quality[5]. (See also [15]).

> But a storm is blowing in from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. The storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress. [12]

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[4] History is replete with examples of wars and social conflict that arose because of devastated environments. Jared Diamond describes how this led to the demise of the Norse Greenlander civilisation [23] pp.248-276. There are also frequent predictions that future wars will be fought over water [51] p.6. Not surprisingly there are also examples of how the pursuit of cultural goals has also led to devastated environments. Many historians believe that the Easter islanders entirely deforested their island through cutting trees that they used to haul their numerous heavy stone statues [23] p.79-119.

[5] Pan Yue, China's deputy minister of the environment, is one of many starting to angle for a better way. He states in a 2005 interview with Der Spiegel that half the water in China's seven rivers is now useless, one third of urban dwellers breathe badly polluted air and that population increase and mass desertification are both rapidly pointing to what he calls "unstable society". ([[26] , p.501). Clearly he can see that China's 'economic miracle' is heading for the kind of crash landing that countless other civilizations throughout time have suffered when they pushed too hard and exhausted the grounds upon which they were seeded. (For a lucid description see Collapse [23]).

This mis-imagining has been encouraged by a general shift away from social models that pursue the common good in favour of a focus upon individual interest. Tony Fry states,

> less evident are the impacts of actions that undermine or destroy the ability of a society as a whole to act in order to secure the conditions upon which its future depends. [30]

Murray Bookchin similarly argues that this insensitivity to our common ground is cast within our existing economic systems.

> To speak of 'limits to growth' under a capitalistic market economy is as meaningless as to speak of limits of warfare under a warrior society. Capitalism can no more be 'persuaded' to limit growth than a human being can be 'persuaded' to stop breathing. [16] pp. 93-94.

Clearly this paradoxical situation must ultimately lead to catastrophe because the stability of social order depends upon it being collectively, ecologically grounded. The discipline of Critical Ecology [10, 22, 42, 43, 48] has attempted to understand how and why we are proceeding down this path. This discipline was in turn inspired by ideas drawn from the Frankfurt School [42] which clarified the links between how we treat the 'environment' and how we treat each other, reminding us that humanity, interpersonal and inter-other relations are inseparable from our designed and non designed ecologies. Murray Bookchin states, "the domination of nature by man stems from the very real domination of human by human". [17]

3: EXPANDING THE GROUND OF NEW MEDIA PRACTICE; CREATING NEW IMAGES

> Creating the smallest living thing, creating life, no matter how small is greater than creating a vast dead planet. A thing that lives is a universe. [45]

A cultural problem of this degree and dimensions needs to be tackled, discussed and imaged from a broad range of interdisciplinary perspectives. An artistic praxis that seeks to influence 'hearts and minds' in shifting to new ways of knowing and imagining is therefore as relevant to tackling this problem as are campaigns that seek to directly change environmental practice.

During the past 13 years I have responded to this challenge by developing an approach to new media arts practices that I named ecosophical [2, 3, 4, 5, 7] . This approach emerged from a long-term study of principles of scientific ecology and critical ecological philosophies, creating a practice deeply underpinned by eco-social and eco-political engagement. This is based in Ecosophy - a philosophical position or form of self-realisation and part of a broader process of making sense of the world and hence determining engagement with it. The word Ecosophy is derived from the original words *Sophia* (wisdom) and *Oikos* (dwelling), implying a care for the interrelated worlds, which we inhabit and are an integral part of. The term was coined by Critical Ecology

philosopher Arne Naess[6] and used by Felix Guattari[7], who were both concerned with ideas about what it meant to be a human living within relational webs of difference.

Ecosophical praxis seeks to create contexts within which participants may, both during the work and afterwards in reflection, gain understandings of their energetic co-dependency both with other interactors or spectators within the works and, through metaphorical association, with the connected ecological and eco-social worlds beyond.

These approaches differ somewhat from the type of practices regularly clumped under the banner of 'environmental or ecological art '. Such forms most often take as their starting point what is called in common parlance 'natural' or the 'biological' or draw on concepts from environmental management such as recycling, or the reduction of fossil fuel usage. Technology based ecology focused projects likewise clump around popular topics such as bio-art [38], bio-tech, artificial life [14], ecosystem simulations [41] and so on.

However there are a number of practitioners (many being outside of the media arts) who acknowledge that the roots of the base ecological problems we are facing are cultural. Their work is important because, like ecosophical practitioners, they seek to expand definitions of what ecological art practices must urgently become.

For over than thirty years pioneer practitioners Newton and Helen Mayer Harrison [34] have worked with biologists, ecologists and urban planners on river catchments and bush-based projects. Their artworks aim to seed collaborative dialogues around sustaining biodiversity and community development". Similarly Mierele Laderman Ukeles' *Flow City* (1985–date) was developed in residence at the New York city sanitation department using processes of participatory democracy and open dialogue to address community issues of waste management - highlighting that we are unique amongst all animals in creating non-reusable 'wastes'. Artist and engineer Natalie Jeremijenko creates devices and situations that gather and present 'overlooked facts' (an approach that resonates with ecosophical practices). Her bioscience inspired project *OneTrees* [38], involved one thousand tree clones being dispersed to a variety of planting sites, debunking popularist notions of genetic determinism through the subsequent display of ecological difference. Jeremijenko's recent project *OOZ* [39] aims to allow people to better understand the lives of urban-living geese by providing

..opportunities for humans to interact with the animals - via, for instance, the plastic goose.. It will float in the water alongside real geese, while human visitors manipulate it by remote control, watching the reactions of the real geese on a video screen. [20]

Whilst these approaches, (both technological or non-technologically focused), to differing degrees each acknowledge the cultural roots of the ecological crisis, they still revolve around subject matter that is currently synonymous with eco-art practices, such as 'nature'/'biology'/'life forms'. This narrowness of imaging tends to overshadow artworks that are grounded by foundational (ecological) questions.

I am therefore calling for a conceptual and practical expansion of the field of new media/ecological arts in order to address this deficit. Ecosophical forms begin with the assumption that we misname the ecological crisis – we are the crisis. Jared Diamond [23] characterises the crisis as emerging from combinations of "failure to anticipate", "failure to perceive", "rational bad behaviour", "disastrous values", "irrational failures" and "unsuccessful attempts at solutions". However this way of characterising the problem as failures of 'rational mind' hints at a deeper flaw - our inability to evolve our 'linear' thinking towards new forms of 'relational' thinking that such a crisis demands.

The ecological crisis, its causes and the way that we think about them, all indicate failures in understanding relationships. To create artworks that can comment upon this malaise without themselves falling foul of it requires an approach that Eduardo Kac calls "dialogic" [40]. He describes these practices as having a basis in "intersubjective" aesthetics that stand "in stark contrast to "monological art, which he says is largely based upon the concept of individual expression (e.g. painting, sculpture, drawing, printmaking)". Kac's practices aim instead to develop active dialogue between participants and the work - a thinking consistent with my own ecosophical practices since 1993 that have sought to lend understanding to the fact that collaboration at multiple levels is required to maintain the integrity, diversity and efficacy of the biophysical, social and electronic environments that we occupy.

Ecosophical praxis was based upon a series of iteratively refined questions that practitioners might ask of themselves. These questions collectively formed a series of succinct, directed yet prescriptive questions that I detailed in prior papers [2, 4, 7]. In summary they suggest that: Ecosophical works should metaphorically allude to the energetic exchanges that foreground scientifically described ecologies (e.g. energetic sources, transfers, exchanges, transfers and recycling). Their form should be time based (in order that a conversational form can develop t), cyclical (in reference to the cyclical regeneration of non-manufactured life) and predominantly interactive (promoting Kac's "dialogic" form [ibid]) - incorporating an interface that is co-responsive to bodily movements. Participants should become woven within the experience and systemic operations of these works in ways that heighten their sense of connection rather than control. Ecosophical works therefore speak to the ethical dimensions arising from the substantial knowledge we now have gleaned from scientific ecologies, focusing in upon processes of energy transfer and exchange that cue into ideas of relationship-with and responsibility-for.

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[6] Norwegian philosopher Arne Naess describes how he employed theories of Deep Ecology to develop his own Ecosophy. He saw Ecosophy as a form of self-realisation born both out of his development of, and identification with, the philosophy he is credited with birthing, 'Deep Ecology'.

[7] Philosopher Felix Guattari suggests that the key question facing us today is how to produce, tap, enrich and permanently reinvent a subjectivity (understanding of selfhood) - that which comprises our own attitudes, beliefs and emotions, in ways that it might become comparable with a universe of changing values.

'Grounded Media' approaches to art making represent a refinement and specialised ecology within the ecology of ecosophical praxis. Their aim is to both focus and concentrate praxis whilst also developing and broadening the scope of what is currently understood as ecological art practices within new media arts culture.

The first of the works from which this approach emerged is an open-air promenade performance/installation on a mountain called Grounded Light. It included illuminated installation works and live physical and sonic performances staged along the journey to the summit. However paradoxically, initial inspirations for the work came from many thousand feet off the ground.

4: GROUNDED LIGHT

Orwell's most accurate prediction in 1984 was the mutation of Britain into Airstrip One. [44]

In a world where thinking time is scarce and aviation fuel remains untaxed [44], a window seat on a flight above Australia is a fine time for reflection and clarity. Landscapes of the interior are typically vast and sculpted by profound forces – flowing and shuddering over unimaginable distances. And yet every so often deep lines cut into these scapes – dirt road arrows. The mind swoops down to the axle shattering anger of car careering over corrugations. High up there, the desire to touch that far down landscape is cryingly strong: Flying. So vastly different from driving it, but then, SO vastly different from walking it – a place where the body is far from obsolete.

Figure 2. Signboard at the Foot of the Mountain. Photograph Phil Hargreaves.

The work *Grounded Light* was deeply underpinned throughout with ideas drawn from post-colonial philosopher Paul Carter's book, *The Lie of the Land* [19]. In it he calls attention to what he sees as our pervasive ungroundedness upon Australian soil. He writes of a profound disconnect that exists between most Australian Caucasians and the Australian landscape that they imagine they inhabit.

We may say "But we walk on the ground", yet we should be aware of an ambiguity. For we walk on the ground as we drive on the road: that is, we move over and above the ground. Many layers come between us and the granular

earth. Let the ground rise up to resist us, let it prove spongy, porous, rough, irregular – let it assert its native title, its right to maintain its traditional surfaces. ([19] p. 2)

Groundedness is an example of an important foundational concept of ecology that might not be immediately recognized as such - and yet it is one that speaks to deep, cultural and ontological dislocations that if never addressed will colour and distort all of our future interactions with both the Australian land and by extension each other.

The performance/installation *Grounded Light* was presented on Mt. Tinbeerwah, Noosa hinterland, Queensland, Australia for the 2003 Noosa Gallery Floating Land Festival. Mount Tinbeerwah is a popular place of "lookout" due to its elevated perspective. Standing on that mountaintop, after dark, in the pre-planning phase of the work I sensed how, in Carter's words, "many layers come between us and the granular earth" ([19] p.2). From the mountain, one can observe the general shape of the land, the flocking of life to the coast, the deep scars of forest clearing, and, as the sun sets, the pinpoint lights of human dwellings. Much of the story of western settlement can be read from the marks in such landscapes. I reflected that this colonizing process has occurred, not so much IN the land, but OVER the land. We have thrown our civilisation like a picnic blanket over this country, often with little regard for its rocks, sticks & dirt, which seem of little significance or consequence to the way we live our lives. While Indigenous Australians are profoundly connected to that ground our colonial history has been correspondingly un-grounded. Paul Carter states that we walk "over the ground", appreciating it "only in so far as it bows down to our will" ([19] p.2). In his writings he calls for an ecological consciousness to confront this deep psychological discomfort, something he suggests may be invoked through an "environmentally grounded poetics" ([19] p.5).

Figure 3. Lisa O'Neill, Surrounded by Lights on the Summit of Mt. Tinbeerwah, *Grounded Light*. Photograph Phil Hargreaves.

The performance was led, on a perfect moonless night, by performer Lisa O'Neill, cloaked in a period costume into which were sewn white point lights that subtly lit up her dress, feet and face. A poignant, eerie soundtrack (by trombonist Ben Marks) played from her parasol, which was also ringed by lights. This lone woman with her colonial dress and haughty demeanor initially appeared to represent colonial un-grounding, accentuated by her image at a distance that suggested she might be floating up

the mountain.[8] However what soon became obvious were her bare feet and a highly centred, grounded performance style[9] that suggested an unusually strong, energetic connection to ground.

Figure 4. *Grounded Light*. Photograph Phil Hargreaves.

The sounds emanating from the performer's parasol during the journey (composed by Ben Marks) were entirely composed with unconventional trombone sounds - which were reminiscent at times of the sound of a didgeridoo. This soundtrack subtly poked fun at Southey's remark, "In Australia 'for the music of bleating flocks, / Alone is heard the kangaroo's sad note." (Quoted in [19] p.8). In a parallel tone Paul Carter reflects that for the colonial,

> The lie of the land is associated with a noise that must be silenced. To inhabit the country is to lay to rest its echoes. ([19] p.8).

At one point in the journey up the mountain a Morse code call and response with nearby Mt. Cooroy was performed. As the performer flashed MANY LAYERS COME BETWEEN US, so the unexpected response came from the blackened mountain 4 kilometres away, AND THE GRANULAR EARTH. This act of communication and connection between normally unlit sites recalled the 1988 Australian Bicentennial signal flare which was situated on Tinbeerwah and more generally exchanges of communications from point to point that were once important for social cohesion. It also alluded to an understanding of our

grounding "dialogically, kinetically, as an evolving back and forth, echoic of the lie of the land" ([19] p. 12)

Figure 5. Lisa O'Neill Performs *Grounded Light* on top of Mt. Tinbeerwah. Photograph Phil Hargreaves.

The work continued on to the summit of Mt Tinbeerwah accompanied by its dramatic three hundred-and-sixty-degree views of the shire's lights, floating over the ground, far below. Rounding the last corner the audience suddenly came across an installation of one hundred and twenty miniature white LEDs quivering on fine wire stalks placed on the ground and bush adjacent to the lookout[10]. This sea of swaying point lights spread across the mountain plateau in the blackness, appeared to join up with the numerous lights in the valleys, forming a visual 'net' across the mountain. One might imagine the lights seen from this summit as paralleling the sheer number of campfires that might have once been present in this ecologically rich area. A campfire directly touches the earth and is sustained by that ground as well as locally gathered resources. In comparison our favoured lights of neon, tungsten and gas discharge float at the end of street poles, are nailed to house frontages or are bolted to the front of motorcars. These point lights are manufactured in unknown and distant locations from finite resources and float coolly above the local lie of the land that they illuminate.

This comparison between grounded and floating lights was alluded to in an animation played continually in the lookout tower at the summit. This presentation mimicked the signboard that by day points out the local mountains, presenting poetic animations of Paul Carter's texts floating over and melting down onto these landscapes. Miniature lit buildings also melted into images of campfires whilst audiences viewed the installation of lights and this projection at their leisure**.**

Curator Kevin Wilson later wrote of his experience of the work that,

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8 This was accentuated through both lighting and the Suzuki method of walking akin to a glide that maintains an apparently stable horizontal lower body postion whilst in travel.

9 Lisa's works are deeply inspired by Tadashi Suzuki's Japanese tradition of acting. [50]

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10 Whilst the mountain ridge that the lookout was set upon is considered locally as a dividing line between coastal and hinterland communities the multitude of tiny point light sculptures visually linked to those on each side of the mountain. Whilst this might at first appear to imply a continuation of our ungrounded smothering of the land, it also suggested a deepening of connectivity and coherence to country.

Armstrong's .. work does not so much create something as provide a looking-glass to see a place in greater depth. ([54] p. 48)

Reflections both during and after the creation of this work initiated the processes of conceptualizing the 'Grounded Media' 'sub-ecology' of ecosophical praxis. Whilst *Grounded Light* unusually did not involve a direct interaction typical of my prior works, the audiences' physical commitment through walking/touching the ground during the experience was critical to an embodied understanding of the concept of groundedness. The work also presented and developed site-specific images that were critically engaged with the central ecological questions, but that were also infused with a strong transformative vitality.

5: RESTING GROUNDS

Praxis led methodologies are rarely linear in their nature. The second work from which a 'Grounded Media' approach emerged was not developed until two years later in 2005. This performance-inspired interactive installation, called *Shifting Intimacies* [9], was commissioned via an Arts Council of England/Institute of Contemporary Arts (ICA) residency in London in late 2005. I collaborated on it with British choreographer Charlotte Vincent and *Transmute Collective* sound artist Guy Webster. *Shifting Intimacies* was presented in early 2006 at the ICA during the *Capture 4* [21] dance/media festival.

Shifting Intimacies was created in order to draw attention to the eternal, regenerative, ecological cycles of life that involve the recycling of our bodies in order to create new life. It uses the connective metaphor of dust[11] to represent transitory states between death and life - presented visually, audibly, literally and conceptually. Dust is the matter to which all life and everything returns, and from which everything is subsequently built - a base material of life that is eternally kinetic and transitory. Dusts are tiny particles of the planet and the universe: the shedding of skin, the crumbling of rock - almost everything, including our bodies is reducible to dust; dust settles. It disperses. It connects past present and future materialities; ashes to ashes, dust to dust.

During ten minutes alone with the work each participant walks freely throughout the entire space, moving around and between the two screens. These two circular down projections are set within a 25mx12m darkened space that includes a seven channel interactive, surrounding soundscape. The floor is coated with a layer of white dust that is carried around on the participants shoe soles and upon which one of two circular down projections falls.

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[11] Calvino writes in his short story Smog of an all pervasive dust that inflects the psyche of the lead character.

I couldn't say whether it was more brownish or bituminous in colour - more intense first at the edges then in the centre. It was, in short, a shadow of dirt, soiling everything and changing: Different from other clouds.. I stood there looking for the first time at the cloud which surrounded me each hour, at the cloud I inhabited and that inhabited me. ([18] p.195)

The other falls upon a raised circular table, coated with fine white sand. This screen (Screen One) is based around ideas of new life/emergence invoked through the image of a body slowly emerging from a watery substrate. It loops endlessly and provides constancy within the space. Screen Two (based around ideas of evolution, death and the return to dust) develops in real time through a series of 'stages' choreographed by the participants walking patterns within the space. A network of sensors causes the computer systems to evolve the projected digital imagery and enveloping sounds in real time. The software includes a controllable, artificial life based algorithm (responding to participant 'drift') that infuses itself deep within the imagery creating a digital parallel to the work's physical dusts, This also drives ceiling mounted dust actuators that release minute amounts of dust into the projection light high above the 'screen'.

At the end of the experience participants leave via a raised observation platform and are invited to cast a handful of dust down through the projection light onto the dust-covered floor below. This invokes a process of re-mixing transforming and disintegrating a body, first to ashes and then finally to dust.

Figure 6. Shifting Intimacies, ICA, London. Photograph Keith Armstrong

These images are strongly supported by the seven channel interactive soundscape that makes extensive use of spatially shifting audio and granular synthesis, based upon found sounds that continually transform and re-orientate the space.

The gently interactive nature of the work ensures that much of the audiovisual material is directly generated and choreographed by participants' whole body movements. This implicates each participant and their body in a co-creative, performative partnership with the work. This subtle mode of interaction is framed and shaped by a soundtrack of poetically coded instructions, which each participant listens to immediately before entering the space.

As living, ageing and dying beings we exist within, and are dependent upon, numerous complex ecologies – of mind, body, interpersonal relationship and biosphere. Restless, pervasive and corrosive forces, forever in transition, forever crumbling and forever reforming animate these ecologies. Our bodies are chiefly water, bone and elements – 'dusts' of calcium phosphate, carbon, nitrogen, iron, sulphur, chlorine, arsenic and zinc. Despite rapid

technological advances, our attempts to comprehend these physical, metaphysical and epistemological complexities are still laced with uncertainty. There is much we don't know. There is much we choose to ignore, and there is much we can never know.

As part of addressing these life cycles, *Shifting Intimacies* examines Western taboos associated with the ecological processes of confronting dying [13], death, burial and degradation as well as birth.

Figure 7. Shifting Intimacies dust screen. Photograph Keith Armstrong

In all of these ways *Shifting Intimacies* ponders how we might re-image ourselves within the birth-life-death cycles of which we are all an inherent part.

As with the first project *Grounded Light*, whilst these core themes may not be immediately associated with conventional ecological practices they profoundly affect our conceptions of who and what we are.

We design our worlds denying life's cyclical basis, hanging instead onto our pervasive conception of time as a linear arrow. Grosz calls time "more intangible than any other 'thing'" ([35] p. 1), "rarely analysed", and yet, the "eventual undoing.. of.. all knowledges and practices" [ibid]. This also reflects in our society's obsession with remaining young exemplified by the work of biogerontologist Aubrey de Gray.

> some people alive right now could live for 1,000 years or longer. Maybe much longer. Growing old is not, in his view, an inevitable consequence of the human condition. [11]

Indeed death is the most difficult of ecological foundations for us to fathom. The apparition of personal invincibility melts the instant that a loved one dies, or briefly as one drives past a car wreck busy with paramedics. This a cultural attitude that contrasts vividly with Tibetan Buddhists [49] who meditate upon death as part of a daily spiritual/philosophical program. Montaigne writes that we must,

> deprive death of its strangeness, let us frequent it, let us get used to it.. We do not know where death awaits us: so let us wait for it everywhere. ([49] p.15)

Figure 8. Loyalist Marching Day, Londonderry, Northern Ireland – with prior nights 'bonfire' still smoldering – the word bonfire comes from the old English 'bone fire' of cremation. Photograph Keith Armstrong

A number of key ideas arose from reflection upon this project that matured the 'Grounded Media' approach. Strong similarities to the initial work *Grounded Light* included the central use of walking, a pervasive base material (dust) that feeds through into all aspects of the work and a script design based upon cyclical processes influenced by the drift and flows directly linked to the rhythms of each participant's derivé within the space.

6: CONCLUSIONS

'Grounded Media' forms build upon the ecosophical processes that I have long used to develop and shape new media artworks. They concur with ecosophical praxis' broad objectives in that they focus on the cultural dimensions of our ecological crisis, examining foundational aspects of ecologies that may not generally be understood as part of the spectrum of ecological arts.

I have not attempted in this paper to create tight definitions that risk denying context, evolution and interaction with other ecological systems. However what differentiates 'Grounded Media' forms are their quite particular choices of location, physical forms, interactive strategies and performative interventions.

'Grounded Media' forms typically include metaphorical references to tangible, sustaining substrates (e.g. soil or dust) and directly or indirectly include walking or other forms of energetic connection with that ground within both the media and participative structures. This vital connection between physical engagement and knowing concurs with Paul Carter's words,

> To make the lie of the land an object of the mind, it has to be printed with steps; and the steps, their depth, their space apart, will bear witness to the gravity of the passage and its motive. ([19] p. 2)

This idea was subsequently further explored through a new prototypical artwork called *InStep* [6] created in January 2007 during the *Australian Network for Art and Technology's ReSkin* Workshop in *Wearable Couture* in Canberra. *Instep*

comprised a set of foot bindings with sewn in soft, flexible fabric sensors that sat on the ball of the wearer's feet, toes and heel. These sensors communicated with a soft sculptural form held in the hands which contained electro-mechanical actuators that tapped gently through the fabric in step with the quality of their walk.

Figure 9. *InStep*, 2007 – Sensory Foot Bandage. Photograph Keith Armstrong

This haptic feedback device could then be given to someone else so that they could similarly feel the (translated) qualities of another person's walk. *InStep* was presented through a number of personal performances created for participants over a sustained period of time. By allowing people to examine the qualities of each other's imprint upon the ground the work considered how we might "release the ground for movement in order to release our movement for the ground" ([19], p.5)[12].

An embodied approach to artmaking is therefore also critical to the 'Grounded Media' form. This approach is taken,

> not only to stress the importance of the participants' bodies in the work, but also to foreground the conversational, engaged sensibility that underpins its conception and production. [24]

Hence 'Grounded Media' forms eschew a basis within individuated ethics in favour of an ethics inscribed into that which we share in common (including the objects that constitute our environments). Our bodies form our physical, metaphysical and epistemological interfaces to the world. French phenomenological philosopher Merleau Ponty stresses the connective nature of the body when he writes that we are all,

> Flesh, made of the same flesh of the world, and it is because the flesh of the body is of the flesh of the world that we can know and understand the world. [47]

This emphasis on the connectivity and inseparability of bodies influences 'Grounded Media's' placing of the participant's body as inclusive within their real time choreographies. Principles and practices of choreography and innovative performance forms also inform and inflect these designs, (how the participants move, what their options are, the shape, form and the phrasing of the work's movements, the manipulation of moods and the narrative contents that are evoked). 'Grounded Media' forms therefore seek to create embodied experiences that are both performative and improvisational as participants' bodies interface directly to the work and are therefore implicated intimately within its evolving audiovisual imagery.

Whilst both the works *Grounded Light* and *Shifting Intimacies* most overtly suggest profound disconnections (based upon misconceptions of ecologies) they also simultaneously offer audiences images that suggest transformation, imprinted through the power of embodied experience. This approach is germane to 'Grounded Media' because it avoids simplistic over reliance on the promotion of fear and guilt, particularly for audiences who may well be already inured to warnings about our deepening ecological crisis.

It would be easy, and wrong, to suggest that participating within 'Grounded Media' works might somehow lead to change in future behaviour or action through some transcendental or 'ahah' moment. However I am repeatedly drawn to my own experiences in the early 90s of reading Suzi Gablik's book of interviews, 'Conversations at the End of Time' [31]. The realisations that I gained from that book were just the right ideas for me at that time - spurring me to then develop the ecosophical project that I have pursued now for well over a decade. It is that possibility of catalytic action, inspired by the experience of a creative work in the context of all other experience, that as both an artist and a social activist inspires me to continue this journey.

This approach, I hope, lessens the risk that the real problem will remain concealed - US.

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[12] This focus upon physical contact within *InStep* and other 'Grounded Media' forms reminds of the paradox Paul Carter identifies of how we move with an extreme lightness on the ground resulting from our extraordinary heaviness upon it - yet we sense our "ungroundedness, the fragility of our claim on the soil" [19], p.2, demonstrated through our "engineering instinct to wipe it out; to lay our foundations on rationally apprehensible level ground" [ibid].

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