How can artists create work that is both ecologically responsible and valid as art?

This conference, hosted by University College Falmouth over three days in July 2006, brought together some of the leading members of the artistic community to consider this question and related issues.

In addition to the formal presentations, delegates had the opportunity to continue the debates at Trebah Gardens, Gyllingvase Beach, The National Maritime Muesum and the River Fal. This provided an ideal backdrop to further consider the relationship between art and the environment.

The Speakers

Alan Sonfist
Artist, author and environmentalist.

Alan Sonfist is the originator of the movement to bring nature back into the city. His thinking has influenced a generation of visual artists, environmentalists, urban planners, landscape architects and urban dwellers. In his work, Sonfist seeks to conceptually expose the natural foundations of the urban landscape, and so bringing this sense of nature into life of the city. His projects address the amnesia that exists in the conceptual space of the city regarding the natural.

Sonfist engages the urban in a dialogue by using structures already present within it. In 1965, he created the Time Landscape, in which he reconstructed a 16th century primeval forest in Manhattan. The Time Landscape has been recognized as a land marked park, and has spawned related projects in Denmark, France, Germany, Japan and Italy. A book about his work has recently been published, entitled Nature: The End of Art; Environmental Landscapes Alan Sonfist. www.alansonfist.com

F. David Peat
Author, and former theoretical physicist.

David Peat was born in Liverpool and carried out research in theoretical physics in Canada where he also organized a series of dialogue circles between Native American Elders and Western Scientists. David is the author of twenty books on everything from superstrings and synchronicity to the world of the Blackfoot and the inventions of Nicola Tesla. His most recent book is Pathways of Chance.

In 1996 he moved to the small medieval village of Pari, in Italy, where he now runs a cultural centre. He has had a long-term and on-going involvement in discussions between art and science and in particular with Anish Kapoor, Anthony Gormley and Janine Antoni. His web site can be found at www.fdavidpeat.com and the Centre’s at www.paricenter.com.
The Speakers

In Pari, David has been exploring fundamental questions in science and religion, developing notions of ‘Gentle Action’ in society, the notion of ‘a network of networks’ and exploring the role of trust and ethics in the market place.

John K. Grande
Author, art historian and critic.

John Grande graduated in art history from the University of Toronto, and in 1994 was winner of the Prix Lison Dubreuil for art criticism. His reviews and feature articles have been published extensively in Artforum, Vice Versa, Sculpture, Art Papers, British Journal of Photography, Espace Sculpture, Public Art Review, Vie des Arts, Art On Paper, Circa & Canadian Forum.


Grande has also published numerous catalogue essays on selected artists and has taught art history at Bishops University. He is a contributing editor to Sculpture (USA) and English section editor for Vie des Arts Magazine.

Stacy Levy
Artist and environmentalist.

Stacy Levy received her BA from Yale University in Art and in Forestry. She went to the Architectural Association in London for a year and did her graduate work at Tyler School of Art where she studied with Winifred Lutz. Levy began a landscape design firm which specialized in urban forest restoration, and worked on many public, corporate and private landscapes in the Mid-Atlantic States. Her years in forestry continue to inform her public art and installations. She was also part of the team to design and implement the Acid Mine Drainage and Art Project in Vintondale, Pennsylvania, a coal mining region.

Levy's work registers simple natural processes, giving the viewer a way to viscerally understand the workings of nature. Current projects include a commission for the Hudson River in New York, a stream diagram project at the Ontario Science Centre in Toronto, Canada, and a project about microscopic life for The University of South Florida in Tampa.

The Speakers

George Steinmann
Artist, researcher and educator.

George Steinmann studied Graphic Design, Painting and African - American History in Berne, Basel and San Francisco. He now lives in Berne, Switzerland.

Since 1979 he has produced numerous projects, performances and public art. His work has been exhibited in Kassel, Winnipeg, Ontario, Cincinnati, Helsinki, Berne, and Dresden. His work has been described as creating fundamental shifts in human perception and calls for an observer to participate in recreating a dynamic healing balance between nature and people. Between 1992-1995 he was involved in the renovation of Tallinn Art Hall, Estonia, as sustainable sculpture. He is currently lecturer and head of a trans-disciplinary ‘Art as Research’ program at the Berne University of the Arts. www.george-steinmann.ch

Tim Collins & Reiko Goto
Artists, educators and theorists.

Tim Collins and his partner, Reiko Goto, have collaborated together for many years.

Tim Collins was born and raised in Rhode Island, USA. He is an artist, educator and theorist working with the cultural issues of ecological restoration and the form and function of post-industrial public space. Working in the STUDIO for Creative Inquiry at Carnegie Mellon University from 1997-2005, Collins and Goto directed 3Rivers - 2nd Nature, a project with primary funding from the Heinz Endowments and the Warhol Foundation. He is currently Associate Dean, School of Art and Design, University of Wolverhampton.

Reiko Goto was born and raised in Tokyo, Japan. She is a Research Fellow at the STUDIO for Creative Inquiry, and continues with her solo activities and teaching. Her work has been presented at Capp Street Project in San Francisco and the Walker Art Center in Minneapolis. Her art explores the interface between nature and people and she is particularly interested in a restoration approach to environment.
## Contents

### CONFERENCE PAPERS

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alan Sonfist</td>
<td>Public Monuments</td>
<td>9</td>
</tr>
<tr>
<td>F. David Peat</td>
<td>The Dancing Strands</td>
<td>13</td>
</tr>
<tr>
<td>John K. Grande</td>
<td>The Logaiuing of Land Art: Re-sighting Ourselves in It All</td>
<td>25</td>
</tr>
<tr>
<td>Reiko Goto</td>
<td>3 Rivers 2nd Nature / Groundworks</td>
<td>35</td>
</tr>
<tr>
<td>Stacy Levy</td>
<td>You Are Here: Locating Ourselves in Nature</td>
<td>45</td>
</tr>
<tr>
<td>Suzi Gablik</td>
<td>Art &amp; The Big Picture</td>
<td>59</td>
</tr>
<tr>
<td>Tim Collins</td>
<td>Catalytic Aesthetics</td>
<td>71</td>
</tr>
<tr>
<td>George Steinmann</td>
<td>METALOG</td>
<td>91</td>
</tr>
</tbody>
</table>

### RANE RESEARCH PROJECTS

<table>
<thead>
<tr>
<th>Project</th>
<th>Author/Team</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materia Prima</td>
<td>Stephen Turner</td>
<td>99</td>
</tr>
<tr>
<td>Self-decomposing Laboratories</td>
<td>Georg Dietzler</td>
<td>103</td>
</tr>
<tr>
<td>Dendros: Horizons of Change</td>
<td>Dave Pritchard</td>
<td>107</td>
</tr>
<tr>
<td>Trace Elements 4: Mapping By Water</td>
<td>Jane Atkinson</td>
<td>115</td>
</tr>
<tr>
<td>Better Living Through Electrochemistry?</td>
<td>Andy Webster &amp; Jon Bird</td>
<td>121</td>
</tr>
<tr>
<td>Seeing the Woods for the Trees</td>
<td>Martin Prothero</td>
<td>131</td>
</tr>
<tr>
<td>The Artful Green Sink</td>
<td>Kerry Morrison</td>
<td>135</td>
</tr>
</tbody>
</table>
Public Monuments

*Alan Sonfist*

Public monuments have traditionally celebrated events in human history – acts or humans of importance to the whole community. Now, as we perceive our dependence on nature, the concept of community expands to include non-human elements, and civic monuments should honor and celebrate the life and acts of another part of the community: natural phenomena.

Within the city, public monuments should recapture and revitalize the history of the environment natural to that location. 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 should be remembered.

Historical documents preserve observations of New York City’s natural past: “…The region in which they lived, which has now become the area of the greater City, was a paradise of nature, teeming with its products, and rich in natural beauty of woods and waters. Its varied climate, as one old-time writer described it, was ‘of a Sweet and Wholesome Breath’, its ‘uplands covered with berries, roots, chestnuts and walnuts beech and oak masts’. Birds sang in the branches, the deer and elk roamed the grassy meadows, the waters swarmed with fish, and the woods were redolent with the scent of the wild grape and of many flowers. Oak trees grew seventy feet high.”

In a city, one can be constantly reminded that the city was once a forest or a marsh. Just as some streets are named after trees, street names should be extended to other plants, animals and birds. Areas of the city could be renamed after the predominant natural phenomena that existed there. For example, Manhattan’s Lower East Side could be renamed by its previous marsh characteristics to create another symbolic identity and unification within
the urban area. As an educational force within the community, it would enable the inhabitants to get an overall view of the ecology that existed in that area.

The *Time-Landscape* is a contemporary re-creation of the natural phenomena that once existed at a particular site. Different periods of time can be selected, such as prior to settlement, during agricultural use, or the present time when trees and shrubs, once immigrants to the site, are now naturalised. Plans and drawings for this project were submitted to the Parks Department in 1965, and construction began in 1977. In 1969, the director of the Metropolitan Museum invited the artist to give a presentation of creating a *Time-Landscape* for the Met.

Public monuments embody shared values. These values can emerge actively in our public life. There can be public celebrations of natural events. Our definition of what is news is due for a re-evaluation also – what to include notice of, and explanation of, the natural events that our lives depend on. Re-occurring natural events can be marked by public observational celebrations – the longest day, the longest night, the day of equal night and day, the day of lowest tide and so on, not in primitive mythical worship but with use of technology to predict exact time. Technology can visualise aspects of nature outside the range of the human eye, such as public outdoor projections of telescopic observations: public monuments of the sky. Many aspects of technology that now allow individuals to gain understanding of nature can be adjusted to a public scale. Public monuments can be monuments of observation – sites from which to best observe natural phenomena. The ocean floor at low tide affords re-occurring means of observation. Such monuments are created for certain times of the day or the year.

The concept of what is a public monument, then, is subject to re-evaluation and redefinition in the light of our greatly expanded perception of what constitutes the community. Natural phenomena, natural events and the living creatures on the planet should be honored and celebrated along with human beings and events.

The other speakers at this conference showed slides. I’m also going to start with some slides but these are mental slides – slides of the imagination!

Slide 1
The poet and ecologist Gary Snyder said: “First find where you belong…then dig in.”

Slide 2
When I moved to the medieval village of Pari in Tuscany, an old man named Aladino used to drive by each day in an old putt-putt tractor. He would stop, call to me and point to the landscape, saying: “Look.” I’d look and nod and he would say: “No, Look. Look!” He wanted me to see the land as he saw it.

Slide 3
I was with some Native American friends at a meeting of anthropologists who were talking about indigenous art. One of them referred to the art of a particular tribe. A Native American stood up and said: “I’m a member of that group and I can tell you that we don’t have a word for ‘art’ in our language, and no concept of an artist. But we do make things that fit the hand.”

Slide 4
I don’t have any objection to having bulldozers in the landscape. It’s egos that are the problem.

Slide 5
Claire and Gordon Shippy live in Middlesbrough, in an area that
six hundred years old. Attitudes have not changed.

Slide 9

The biologist René Dubois believes that there is a “spirit of space”, something that inhabits a landscape and enters into the people who settle there.

Slide 10

The village of Pari is nicknamed “little Siena”. It has a living centre. The benches on the outer road of the village do not face outwards but inwards, to give a view of the village. Two people with Alzheimer’s are perfectly safe to wander because the village contains them, they never walk away. Likewise even small children are safe to play, because someone in the village will always be watching them.

The Double Helix

Our conception of the world is like a double helix with two threads recurring throughout history. One strand views nature as sacred, immanent and alive. The other sees the world as a mechanism to be controlled and dominated.

Within science itself this latter viewpoint has been modified through the revolutions in physics of the 20th century, which see the essential holism of the world and the limitations to prediction and control. Nevertheless, this type of thinking still persists in our society, in our policies and in our politics.

The former vision goes back hundreds and thousands of years in human history. In Paul Devereux’s *The Sacred Place: The Ancient Origin of Holy and Mystical Sites* (Cassell, 2000), he argues that Stonehenge was a “dream landscape” – the land itself had been changed to reflect this ancient dream. And Stonehenge is only one of many sacred sights all over the world.

This vision persisted throughout the Early Middle Ages. Abbot Suger, who ordered the rebuilding of the Church of St Denis in Paris in order for it to be filled with light, believed that a numinosic inscape could be found within jewels, stained glass and precious metals that transported him into a "strange region of the universe", one that lay between earth and heaven.¹ For Robert
Grosseteste, light was “the best of all proportions”. St Bonaventure believed that, “to the extent that material things participate in light, they attained their true being”. For John Scotus the universe was so wondrous as “to be compared to a beautiful canticle, a symphony of joy and harmony”. William of Auxerre saw the goodness of material things as being one and the same as their beauty. For both Boethius and Honorius of Autun the world was so perfectly ordered, with the macrocosm mirrored so perfectly to the microcosm, that it could be compared to the harmony within music or to a precisely tuned instrument.

Then something happened. Around 1300 Italian merchants began to use what is called double entry bookkeeping. In this same period the first mechanical clocks appeared on public buildings. Arabic numerals replaced the Roman system. Philosophical arguments employed systematic logic. In short, Europeans were given tools that allowed them to abstract the world around them and manipulate it in the mind. Before double-entry bookkeeping, for example, commerce was an anecdotal affair in which people were never too sure how their businesses were performing. Now it was possible to predict and control; to determine if it made sense to invest in a ship going to the Spice Islands, or to make prices more competitive. And, where once usury had been banned because time belonged to God, now time was secular. Time was something to “waste”, “save” and “put aside”.

And so human beings were given powerful mental tools that encouraged them to abstract the world and view it as an object external to them. With the Renaissance that followed, “Man” became the measure of all things. And what invention do we associate with the Renaissance in art? Perspective. That vision of a one-eyed person with their head clamped. It presents a world that is external to us and involves a monolithic logical system that distorts circular objects and parallel walls into one overarching scheme that mathematicians call projective geometry. We had to wait for Cézanne until that clamped head could be freed again: “Here on the bank of the river the motifs multiply, the same subject seen from a different angle offers subject for study of the most powerful interest and so varied that I think I could occupy myself for months without changing place by turning now more to the right, now more to the left.”

These mental tools were also the seeds that blossomed into the rise of science, with Francis Bacon’s claim that “knowledge is power” and that female nature should be placed on the rack and tormented to reveal her secrets. The physicist Wolfgang Pauli believed that science’s obsession with “the will to power” increased during the 20th century. Pauli had a long involvement with Carl Jung, who had argued that when eros is absent it leaves a vacuum and that vacuum will be filled by the will to power. For Pauli the lack of eros in physics, the absence of an intimate relationship to the natural world, had given rise to the will to power over nature.

Pauli felt that scientists should rather work like the alchemists of old, not in order to seek power and control but for their own redemption. He believed that we must search for the wholeness in nature in order to find the wholeness within. We must also come to terms with what he called “the irrational in matter”. And, just as Carl Jung had discovered the collective unconscious – the objective side to mind – we need to find the subjective side to matter and physics. Indeed, just as spirit had been banished from matter with Descartes and Newton, Pauli felt that the time was now ripe for “the resurrection of spirit in matter”.

We cannot deny that the ability to abstract the world and realise the products of our imagination through science and technology is enormously powerful and has transformed our planet in so many ways. But at the same time the vision still persists. It is what the composer John Tavener called “the one simple memory”, that recollection of a period when art, the world and the sacred were unified. Dionysius the Areopagite wrote that the cosmos was created out of beauty, and this beauty was “the cause of the harmony and splendour in all things, flashing forth upon them all, like light, the beautifying communications of its originating rays”. Centuries later we have the same vision in the poetry of Gerard Manley Hopkins in God’s Grandeur:

The world is charged with the grandeur of God. It will flame out, like shining from shook foil;
Praise him.

So what is inscape? A Sufi master was about to pass on his mantle and had chosen a poor boy from the village. At this his wife protested, saying there were young men from better families and so the master announced to his students that on the following day he would choose his successor. Next morning his pupils arrived with gifts of fruit and flowers but the boy he wished to select brought nothing. When challenged the boy said that he had gone into a field of poppies and as he bent to pick them they sang the praises of Allah, so he passed by. He next went to a tree of pomegranates but the fruit sang the praises of Allah. Everywhere he went the trees and flowers sang of Allah and so he came back empty handed. The Master handed him his mantle.

Likewise, Cézanne wrote: “The landscape becomes reflective, human and thinks itself through me. I make it an object, let it project itself and endure within my painting... I become the subjective consciousness of the landscape, and my painting becomes its objective consciousness.”

Process and Object

Just as in the art world there has been a change in its earlier preoccupation with the “art object”, as something that can be valued, collected or placed in a museum, so too in science we have moved from object to process. Thinkers such as the late David Bohm viewed the electron as more like a process than an object. In his notion of the Implicate Order, quantum objects are constant processes of unfolding out of the Implicate into the Explicate Order and then enfolding back into the Implicate. Just as in ancient Hindu teachings, the universe is a constant process of being breathed in and out of existence.

As an aside, it is worth noting that Bohm’s vision comes directly from Cézanne. During the 1960s Bohm engaged in a long correspondence with Charles Biederman, the artist and author of The New Cézanne. He learned that after hundreds of sittings by the art dealer Ambrose Vollard, Cézanne indicated that the portrait was complete except for a tiny region on the hand, but if he were to touch that area he would be forced to...
repaint the entire canvas. Thus for Cézanne, as for Bohm, the whole is contained within each part.

In many ways our concern with the primacy of the object is a reflection of the language we speak. Our European languages are subject – predicate forms. Just as Newtonian physics deals in objects connected by forces, our languages deal in nouns connected by verbs. But journey to the world of the Blackfoot, Cree, Ojibwaj and Naskapi and you find a very different language family, one in which verbs predominate and categories of objects fade away. Likewise, the world view of the Blackfoot is not of permanent objects but of flux and change. A person’s name changes throughout a life, fish are seen as “processes in water”; the notion that someone would have a single personality is somewhat bizarre, as is the act of dividing the world into “good” and “bad” things. And if all is flux then we must have ceremonies of renewal such as the sacred pipe and the Sun Dance.

Goethe had argued that rather than subjecting nature to artificial situations in the laboratory we should indulge in a two-way dialogue. When this is done, nature will provide us with “the example worth a thousand”. Likewise the Blackfoot point out that if we are in a dialogue with the world then what does nature learn about us? It finds out that we like to make quantum particles bang into each other at high speeds and explode. And if we create a high degree of order in a superconductor then, since all is in balance, there must be disorder created somewhere else. But do we feel morally responsible for the disorder (the entropy) we create in nature?

Complementarity and Dialogue

Up to now these two strands have been treated as being in opposition to each other, or as having different values. But maybe it is truer that they are entwined in each one of us. Yes, we can celebrate the freedom and inscape of nature but we also need to exert a level of control within our lives. We may accept a degree of uncertainty but we also need to know something about the general pattern of the future. We do make plans and seek to make our mark, even if we, at the same time, accept the endless creativity of the natural world.

Yes, we are aware that science is associated with a “will to power” and our dream of endless progress has endangered the planet. Yet it is the same science that tells us about the threat of global warming, global dimming, the damage to the ozone layer or identifies trace contaminants in water. Our science and technology paradoxically is part of the problem and part of the solution. And if our civilisation is to survive global warming then it requires both a radical change of consciousness and a thoughtful deployment of technologies.

The physicist Neils Bohr argued that reality is so rich that it can never be exhausted in a single explanation or description. Rather we need what he termed complementary approaches – levels of explanation that may even appear paradoxical when placed side by side. Thus the electron is both a localised object – a particle – and something that extends over space, a wave.

Maybe this is equally true for these two strands I have explored in this essay. They are complementary ways of approaching nature and the environment, and are constantly involved in a dialogue with each other. And science and art are themselves part of that dialogue, two aspects, two ways of approaching the world.

Maybe art and science themselves expose yet another pair of strands, that of male and female, or rather the masculine and the feminine. We have already met Pauli’s views on the “will to power” in science and Bacon’s on nature as feminine. In fact, the physical sciences are very much a male enterprise. Walk into any physics department and you will find very few women, if any at all. Read Susan Griffin’s Woman and Nature: The Roaring Inside Her and you will find very similar statements that men have made about nature and about women.

If further evidence were needed, then think of the birth of quantum theory, which involved a battle of egos, with Bohr summoning Heisenberg to Copenhagen and reducing him to tears and haranguing Schrödinger to the point where he had to take to his bed. And those who were engaged in the Manhattan Project did not really think about the ethics of creating an atomic bomb until it was too late. Rather they thought of themselves almost as gods who were playing with the very stuff of creation. They were
vegetation, fertility and wine. The Apollonian world is one of simplicity and rule, while the Dionysian is one of intoxication, flux and multiplicity. The two form complementary ways of viewing the world, for when we turn to chaos theory we discover that order is born out of chaos, and chaos born out of order. The two gods, and the two strands, are mirror images of each other and engage in an eternal dance. The lord of this dance is Eros.

2. These writers can be found in Umberto Eco and Hugh Bredin’s Art and Beauty in the Middle Ages (Yale University Press, 1988).
3. Ibid.
4. Strange is Our Situation Here on Earth, in Modern Religious Thought, Ed Jaros Pelikan (Boston, 1990).
For most urban audiences, Land Art remains something distant, far away and unseen. It is precisely this distance, and the aspect of natural beauty attached as environment to the art initiative that makes it unusual. There is no gallery. There is no museum. There is no urban map to locate the work. Instead the work exists in a continuum. Land art embodies certain principles that view nature as the material, whether the artist’s message is conceptual or spiritual. Land art is dislocated art or relocated art – take your pick. Land art is now eco-art, no longer necessarily large scale, and equally it can be intimate, extremely sensitive to biology and geology, and even more transparent and transient effects like climate.

Robert Smithson talked about site and sensitivity in his writings. There is something incredibly subjective about Robert Smithson’s view of art. His writings could be those of any insecure young American youth from his era, but for one thing – Robert Smithson had aspirations to transform the world, and to make art. Not one, but both these things.

Scale was a land art medium. It could be manipulated to great effect, but what of the land itself? What of the ethics of the land? It seems that impact mattered to artists in the 1960s. Bigger was better. Earth could be considered a material to use.

At what cost, one might ask.

Is there truly any art that can surpass the beauty and majestic power of nature itself? Wasn’t it Neil Young who said “nature is a monument to be preserved”, or words to that effect? In fact, we are a part of nature. Denaturised, we perceive nature as distant from us. There is seldom a direct connection. The effects of technology and conditioned systems of data intake may have something to do with this incredible gap that now exists between nature

The Logoising of Land Art: Re-sighting Ourselves in It All

*John K. Grande*
The Logoising of Land Art: Re-sighting Ourselves in It All

John K. Grande

and humanity. Nature remains a foil to be used for any merchandising or marketing scheme. In May 1982, Agnes Denes planted Wheatfield, two acres of wheat in downtown Manhattan. Sited a block from the World Trade Centre – a block from Wall Street and facing Bartholdi’s Statue of Liberty in New York harbour, Wheatfield enabled city people to actually see the foodstuffs they eat growing where they live. The wheat was harvested before the site was developed. But long before Agnes Denes planted her Wheatfield in Manhattan, Alan Sonfist conceived and created what is one of the world’s most significant permacultural artworks. Time Landscape returned a piece of land to its primal state by replanting it with the kind of forest that once blanketed New York City. It grew out of the same performance and conceptual roots as Smithson’s. Alan Sonfist formed a counter-weight in the cosmology of Land Art to Robert Smithson’s Spiral Jetty, which is Land Art’s mega-scale highly symbolic rural exemplar. The Time-Landscape now stands 40 years after its inauguration, as a major living urban monument to the ecological art movement.

Increasingly, nature has been challenged by Post Modernists as largely a nostalgic concept, one generated by Romantic painters, like J. M. W. Turner and John Constable, to create idealised pastoral scenes. The truth is that nature is a volatile and powerful force that is part of our lives and affects us enormously. The recent forest fires across North America have cost the economy many millions of dollars, as has Hurricane Katrina, for instance. Indeed the fires or the floods were influenced by our society’s not allowing nature’s processes to occur regularly, as is the case with forest fires, as they reduce deadwood in North America’s forests. In the case of Katrina, not understanding natural topography and water systems, and accounting for such effects as climate change, or water levels, all contribute to the effect of such a disaster, but that is hindsight. Let us look forward by looking back... as I am trying to link art and nature in this brief patch of thought.

Alan Sonfist’s Time-Landscape was the first environmental sculpture to have truly raised questions about the place of nature in our urban environment, and what an urban environment New York City is. We forget it was once rural, then agrarian, then mildly populated, then became ever more dense. Situated at La Guardia Place next to Washington Square in downtown New York, Time-Landscape reclaimed land from the city, and announced that nature could become art just as readily as art could become nature. The initiative reawakened the New York public’s sense that natural history paralleled human activity and human history in the same way Gordon Matta-Clark’s underground New York videos made us reconsider the urban context using an aesthetic, to make us aware of the pragmatic of nature (the ground beneath our feet and the air we breathe) even as we live and go about our lives.

Alan Sonfist’s Time-Landscape exists as a monument to nature within the urban context. While a sense of a continuity of place, of the tactile and physical reality of life is now at a premium, Sonfist’s project engenders a sense of well being. It is thus a prototype for contemporary urban regeneration projects undertaken by landscape architects, just as Vermont-based artist/architect Michael Singer’s early projects were. Trees, plants, entire landscape are reconfigured to create a tranquil scenario that relates to the pre-habitation and early farm history of this inner-city site. More recently, Michael Singer has proposed a series of satellite dumping facilities along the East River of New York, with docking facilities for barges and entrances for garbage trucks with pulleys to enable the trucks to stop running their motors while in line.

Andy Goldsworthy’s Holocaust Memorial or Garden of Stones at the Museum of Jewish Heritage in New York (2003) is of a differing yet ultimately urban significance. Massive boulders hollowed out by fire enable the artist to plant trees within the stones. What future growth and survival will these trees ultimately have? They are constrained by the size of the opening within the rock and by the available light. Goldsworthy’s aesthetic may be beautiful in terms of its design and nature application, but it becomes an awkward metaphor for the holocaust, as the nature intended to represent hope for survivors may not itself survive. This disconnect from real life actually works against nature, even against civilisation in the long run. Nature, like humanity, has a memory. And so many urban art projects involving nature are decorative, and quite beautiful, but they do not encourage a sense of our links to nature.
Contemporary patronage is getting more public and less private. Good and bad are moral values. What we need are aesthetic values.” To which Kaprow (now crowned and studied by a new and budding generation of performance artists), replied: “How can your position then be anything but ironic, forcing on you at least scepticism? How can you become anything but a sly philosopher.” Smithson went on: “I find the whole idea of the mausoleum very humorous.” Kaprow then commented on Smithson’s vision of the Guggenheim as an intestinal metaphor for a “waste system”, adding this only gave “another justification for the museum man, for the museum publicist, for the museum critic”.

As one of the early performance genii, Allan Kaprow was part of that wild and crazy 1960s atmosphere, but he had a serious issue – to bring art and life together. For one such performance, Echo-Logy, Kaprow expressed something of that almost existential sense of nature endlessly replacing, changing and transforming itself. Like some latter day guy who rolled stone uphill, water was carried in buckets upstream and then poured back into the same stream at Far Hills, New Jersey on 3 and 4 May 1975 for the performance. In a reverse action, a mouthful of water was carried downstream mouth-to-mouth by participants to then be spat back into the stream. Other actions included sending a mouthed silent word upstream person by person while saying it aloud to the trees, propelling a shouted word a distance downstream person-by-person mouthing it to the sky. Other actions followed: “Human breaths are collected and conducted downstream by hand. Small bits escape. The growing bagful becomes stale and the container is then released to the winds. The movement is simply back and forth.”

Kaprow has continued to produce performance actions to the present day with remarkable consistency. An installation made in conjunction with his son, Bram Crane-Kaprow, at Los Angeles County Museum of Art West in 2001 invaded a small cube of space – its ceiling, walls and floor – with pillows.

Like Robert Smithson, Allan Kaprow and other artists, Alan Sonfist likewise involved himself with performance, with events that suggested a history of urban actions and events within a broader scope of natural history. As he comments in an interview...
fluttering stillness, into a spinning sensation without movement. This site was a rotary that enclosed itself in an immense roundness. From that gyrating space emerged the possibility of the Spiral Jetty."

Smithson likewise had an interest in Frederick Law Olmsted, America’s best known landscape architect, and a man who generated the urban park scenario for sites in America and Canada. In discussing Olmsted and Calvert Vaux’s plans for Greensward (Central Park), Smithson notes the consideration of glaciation and geology in the design of the park. At the time Central Park was hardly beautiful. It was in point of fact a disused section of urban land, a wasteland of sorts that needed rehabilitation. Smithson reflects: "When Olmsted visited Yosemite it existed as a 'wilderness'. There’s no point in recycling a wilderness the way Central Park was recycled." Yet Smithson viewed nature and land as a place where nature manipulates nature – just process. Alan Sonfist, on the other hand, realises not only the place of nature in urban centres but equally that: “Nature is not a gentle force. It’s because we have very little contact with natural elements that we have created the myth of its docility. Nature can be cruel in its indifference to life and death. In the forests I create, I will always place dead trees within the living forests to represent the complete cycle. Like a hurricane, death is horrible, but it is a reality.”

The view that nature in a city is something irrelevant, a decorative aspect of the daily hustle and bustle of progress as we know it, is a strange assumption. With his Time Garden and with his drill core samplings taken from the geology beneath major urban centres in Europe and North America (exhibited in Aachen, New York, Toronto and elsewhere), Alan Sonfist proved himself to be a true pioneer of an art that established links with permaculture and with natural history. Nature fulfills a psychological, ecological and aesthetic function in daily life, reducing stress, encouraging reflection and relaxation.

The land artists such as Robert Smithson, Michael Heizer and Walter de Maria generated Earth Art to get out of the commercial galleries, to move art into a new context and one that is part of the North American landscape. The distance between their urban experience as artists and the rural, distant site as subject for
Land Art emphasises the materialist vision of nature. It is manipulable, mere material, and what you see as effect is largely more important than nature’s role in sustaining human culture. This is a major oversight, and one that should be criticised, particularly with a view of Smithson’s art.

The logoising of Land Art has done nothing to improve our understanding of our place in nature, of art’s ultimate reliance on nature as source and material for art. To find artists seizing the land art aesthetic and regressing purely into a design and objective vision of the landscape, such as Andy Goldsworthy does, is not encouraging, particularly as it is their art that is encouraged by our museums, our public art galleries and publishers, rather than an art that seeks to reform, and reassess our place in nature, regardless of the state of technology. Some writers and curators, even business people in the cultural sector, are beginning to question a stripped down nature aesthetic. What has beautiful nature design art really done to further our understanding that art is a living phenomenon and nature is part of that lived experience. We may appreciate the images generated by such an art, but how often do we actually experience nature firsthand, or accept the volatile language of nature’s ontological processes in the art world? We have so many photographers and artists recording nature without questioning our place therein. What good is documenting art if so many in the world do not have food to eat, or a shelter to live in? A lot of our art that claims to deal with nature deals with a purile, denaturised world that is imagistic and avoids social, political and ecological issues, while labelling its subject Landscape or Nature Art. The truth is that nature is a volatile and powerful force that is part of our lives and affects us enormously. Ecology plays a role in all economies. Nature has a memory. We should too! Let’s get more active about it all, and spend less time documenting nature through art.

2. Allan Kaprow, Echo-Logy (1975)
At the simplest level, there are two dominant ideas of nature. First nature, the idea of wilderness or land that is assumed to be unaffected by human development, and the other is the idea of second nature, a cultural landscape, where humanity affects everything.

Robert M. Young, Second Nature: Historicity of the Unconscious

Pittsburgh is located at the confluence of the Allegheny Rivers and the Monongahela River, which unite to form the Ohio River. The Allegheny County consists of hills and valleys drained by streams and rivers. The natural drain system is called a watershed. There are 53 watersheds in the Allegheny County. The three rivers, streams and watersheds were the subjects of the 3 Rivers 2nd Nature project. The team members consisted of Tim Collins – the director, myself – the creative director, and Noel Hefele – 3R2N Research Associate. We also worked with many experts and college students.

In the late 1800s, Andrew Carnegie started building large steel mills. Steel production reached its climax in 1926. During that era, the air, the water and the earth were polluted by mills and city waste. Trees with broad leaves could not survive in the filthy air and torn up soils on the hills. The sky was dark even during the daytime; fish and waterfowl were missing from the rivers. By the late 1980s the steel industry declined and many large mills were closed. Since then the environmental quality has become much better and wildlife has been coming back, but there are many severe industrial scars that still exist in the land and heart of this region.
This environmental and ecological destruction involved a tremendous amount of violence to all living beings. William Jordan, in his book *The Sunflower Forest*, uses Sartre’s quote to illustrate the idea of a land ethic, “shame…is shame of self; it is the recognition of the fact that I am indeed that object which the other is looking at and judging”. Who is the other? Is the “other” among us, or is it them? Why can’t we hear their voices? Who is responsible for the commonly held resources of air, water and soil? Have we lost our land ethic? Is there no shame?

I believe everything has life and spirit, how can we help or support the spirit of rivers? The word spirit comes from the Latin word spiritus, breath, or spirare, to breathe. The definition of spirit in the English dictionary is “an animating or vital principle held to give life to physical organisms.” The rivers breathe in and out constantly; it is most obvious in the spring and fall. The water is cooler than the air in the spring, and warmer than the air in the fall. The rivers give off vapor in the form of low-lying clouds, fog and swirling mists. We see the rivers breathe, like we see our own breath on cold days. Once I learned how to take care of baby wildlife such as birds, raccoons, opossums and squirrels; I paid attention to the sound of their breathing. When the baby was ill, one of the best effective treatments was simply to hold it warmly. I need to learn how to hold and care for a river. Can I hear its breath?

John Dewey said in his book *The Public and Its Problems*: “Not the question of how individuals or singular beings come to be connected, but how they come to be connected in just those ways which give human communities traits so different from those which mark assemblies of electrons, unions of trees in forest, swarms of insects…” The team members care about others, non-humans, therefore, 3R2N takes the stand of environmental pragmatism. Our ecology and environment art practice involves two actions: one is to ask nature, and the other one is to enter into a community of nature, to seek its support with other people. What does it mean to ask nature? I have heard that the Inuit have many words for describing various kinds of snow. They can distinguish not only the different shapes and textures of snows, but also the different conditions when it is snowing. Careful observations and

generations of life experiences make their understanding of snow different from people who live outside their region and culture. I am not rooted in my culture’s endemic knowledge of place. I seek to understand the intrinsic value of nature. Consequently, I must actively seek to become native to this place that I am occupying.

We spent five years working with scientists to reveal the value of nature as it recovers from industry. The aquatic and terrestrial conditions of the rivers and streams became the primary areas of our study. Our work methods were cross-disciplinary, dialogical and relational approaches. Experts helped us to understand what questions to ask of nature. Citizens helped us to understand why we should ask these questions. We focused on issues specific to the post-industrial public realm. We worked on the idea of nature and what it means in a former steel town. This was complemented by regular public discussions about the rivers and how they might change. We called these community events ‘River Dialogues’. The River Dialogues consisted of site tours and discussion of the place. We sought presentations by experts and environmental organisations. Our goals were to find new ways for people to speak and to see, and to find new ideas and methods for creative engagement with our place. We were interested in experience, dialogue, mutual values and diverse visions, and real examples about culture, nature and place.

As we began working on this project, we realized that Pittsburgh suffered from panoramic myopia. By this I mean we have spectacular views of our rivers from high hills and bridges, yet we are not able to see what is really there. We see what we remember, and we assume that nothing is good along these rivers. Community participation was, and is, essential to our process. Transformation started at the moment when people gathered to discuss their place. Each community (human and nature) has different interests and struggles, different relationships to their place. Each community includes people who have observed and stood as witnesses for the nature that defines their regions.

**Outcomes of the 3 Rivers 2nd Nature project**

The project created 23 different reports, which were published and distributed. Areas of focus were aquatic, terrestrial, history
that art and creative vision have the power to affect traditional political procedures by welcoming the ideas and participation of every citizen.” The artists and 3R2N team member provided staffing in a library, a storefront and a municipal office five days a week. Each Friday we hosted a project dinner – followed by a public lecture-discussion about the issues the artists had become involved in. Municipal officials and citizens were always invited (and did attend) these events. The questions from many in these communities were how much time the artists would spend, and how serious their commitments would be. The artists from out of town created excitement, and the artists within the region gave the local citizens and leaders confidence in the commitment that was brought to the work. The 3R2N research assistants ably facilitated the artists; their passion for the work and critical dialogue, and their impeccable computer design skills amazed everyone. All the elements came together as an exhibition called Groundworks. It was curated by Grant Kester with Patrick Deegan and presented by Jenny Strayer, director of the Miller Gallery. It was an international overview of artwork that engages issues of society and environment through art, planning and design. It had local, social, environmental relevance and, in our eyes, international consequence. Grant also worked closely with an interdisciplinary team of authors to produce a series of essays that provided an intellectual framework for the projects on display. The exhibition presented the work of an amazing array of artists. It was intended to elicit a dialogue about artists working with the intent to create change and to raise questions of scale, impact and efficacy. It was intended to initiate a dialogue about the artist’s role in the public realm. As a result of the Monongahela Conference I and II:

– Connie and Tom Merriman became research fellows at the Studio to continue the work on the Hay’s Wood project.
– GroundZero Action Network, Christine Brill and Jonathan Kline are still working with the Braddock communities.
– Ann Rosenthal is still working with the McKeesport community.
– Noel Hefele, 3R2N Research Associate, was invited to the 3

The Monongahela Conference was built upon two events: the Monongahela Conference I and the Monongahela Conference II. The goal in these conferences was to begin a dialogue about art and its role in social and environmental change. The first Monongahela Conference occurred in October 2003. We assembled 24 important artists such as Helen and Newton Harrison, Jackie Brookner and the Platform collective to talk with theorists such as Suzi Gablik, Grant Kester and Malcolm Miles.

We organised two public lectures and two community meetings including a site tour in the Monongahela Valley over the three-day period. This documentation is presented at the Greenmuseum website. The second Monongahela Conference occurred in June 2004. This was a month long art/design residency program with 12 artists in three communities in the Monongahela Valley. Seven artists who lived outside Pennsylvania were brought into the region to work alongside five artists living in the greater Pittsburgh region. This program would insert regional and national artists into challenging post-industrial communities. The project was described in the following terms: “The Monongahela Conference is based on the belief and education. We also produced three other important documentations: The Hillside Project, The River Dialogue and The Countywide Design. The Hillside Project has resulted in changes to the City of Pittsburgh zoning code, and was the basis for the development of a new city park. This document became a tool for citizen advocacy and equity.

The River Dialogue – Watertrail documentation: this is becoming a tool for nonprofit Advocacies. They carry missions of protecting nature and enhancing outdoor recreations for citizens. Friends of the Riverfront and Pennsylvania Environmental Council are going to develop projects from the concept plans. The County Wide Design Plan: in this study we initiated defining nature and post-industrial public space. It was a planning and policy dialogue at the end of the 3R2N project. Our reports and studies are being applied by others to produce change in the region.

The Groundworks exhibition was built upon two events: the Monongahela Conference I and the Monongahela Conference II. The goal in these conferences was to begin a dialogue about art and its role in social and environmental change. The first Monongahela Conference occurred in October 2003. We assembled 24 important artists such as Helen and Newton Harrison, Jackie Brookner and the Platform collective to talk with theorists such as Suzi Gablik, Grant Kester and Malcolm Miles.

We organised two public lectures and two community meetings including a site tour in the Monongahela Valley over the three-day period. This documentation is presented at the Greenmuseum website. The second Monongahela Conference occurred in June 2004. This was a month long art/design residency program with 12 artists in three communities in the Monongahela Valley. Seven artists who lived outside Pennsylvania were brought into the region to work alongside five artists living in the greater Pittsburgh region. This program would insert regional and national artists into challenging post-industrial communities. The project was described in the following terms: “The Monongahela Conference is based on the belief

that art and creative vision have the power to affect traditional political procedures by welcoming the ideas and participation of every citizen.” The artists and 3R2N team member provided staffing in a library, a storefront and a municipal office five days a week. Each Friday we hosted a project dinner – followed by a public lecture-discussion about the issues the artists had become involved in. Municipal officials and citizens were always invited (and did attend) these events. The questions from many in these communities were how much time the artists would spend, and how serious their commitments would be. The artists from out of town created excitement, and the artists within the region gave the local citizens and leaders confidence in the commitment that was brought to the work. The 3R2N research assistants ably facilitated the artists; their passion for the work and critical dialogue, and their impeccable computer design skills amazed everyone. All the elements came together as an exhibition called Groundworks. It was curated by Grant Kester with Patrick Deegan and presented by Jenny Strayer, director of the Miller Gallery. It was an international overview of artwork that engages issues of society and environment through art, planning and design. It had local, social, environmental relevance and, in our eyes, international consequence. Grant also worked closely with an interdisciplinary team of authors to produce a series of essays that provided an intellectual framework for the projects on display. The exhibition presented the work of an amazing array of artists. It was intended to elicit a dialogue about artists working with the intent to create change and to raise questions of scale, impact and efficacy. It was intended to initiate a dialogue about the artist’s role in the public realm.

As a result of the Monongahela Conference I and II:

– Connie and Tom Merriman became research fellows at the Studio to continue the work on the Hay’s Wood project.
– GroundZero Action Network, Christine Brill and Jonathan Kline are still working with the Braddock communities.
– Ann Rosenthal is still working with the McKeesport community.
– Noel Hefele, 3R2N Research Associate, was invited to the 3
Rivers Arts Festival this summer, presenting landscape paintings that address post-industrial issues along the three rivers in Pittsburgh.

As a result of the Groundworks exhibition:
- A group of Japanese environmental artists and a theorist started working together on research and a new project that focuses on Asian environmental issues and art practices.
- The Groundworks exhibition catalogue has been published and distributed.

**Descriptions of some of the work at Groundworks**

_The transformation of McKeesport from fire to water_, Jackie Brookner, Stephanie Flom, Ann Rosenthal
The artists spent an entire month to create dialogues in the community. They used drawings, pamphlet and water bottles to enforce the future visions for the post-industrial community.

_Beneath land and water: a project for Elkhorn City, Kentucky_, Suzanne Lacy, Susan Leibowitz Steinman, Yutaka Kobayashi
The artists used the colour blue to connect land, water and people.

_Hay's Woods Project in Pittsburgh_, Tom and Connie Merriman
Hay's Wood is privately owned – one of the largest woody areas in Pittsburgh. The landowner decided to mine cols and build a casino. The artists stated the importance of green space, wild life and communities.

_Oxygen Bar_, Laurie Palmer
Hay's Wood. She created an interactive sculpture to introduce the Hay's Wood and its problematical issues to wider audiences.

_Looking for Braddock's Fields: GroundZero Action Network/_ Christine Brill and Jonathan Kline
The project site, Braddock, is an economically depressed post-industrial community. A new toll road is going to be built in the middle of town. The 3D models and uniform became tools to

3 Rivers 2nd Nature/Groundworks

create communication in the community.

_Reiterative lines...Braddock's Shifting Right of Ways_, Walter Hood and Alma Du Solier
Braddock, same place and issues. As outsiders they brought many dreams and alternative ideas to the community.

_Park Fiction Institute for Independent Urbanism, The Travel Kit, Park Fiction_ Using tool boxes to create temporary scenes in parks.

_Global Challenge, Les Huit Facettes_ Global affects local: the artist helps to protect and maintain the cultural heritage in a small village in Africa.

_AA Project: Ala Plastica_ A group of artists in Argentina conducted extensive research and released daily public documents, exposing and suggesting in sensitive ways how to clean up an oil spill and limit the damage.

_From Place to Place, WochenKlausur_ A group of Austrian artists have been working on many political issues with communities. In this project they approached a number of Austrian town officials and offered to conceptualise and realise proposals for improving the quality of life.

_Fecal Matters: A Proposal for Braddock, North Braddock, and the Land Above_, The Harrison Studio
The Harrisons proposed a storm-water treatment. They designed a green space, raised walkway and a raised playground area. Plants in low areas are selected for percolation and water uptake qualities.

_Beneath land and water: a project for Elkhorn City, Kentucky_, Suzanne Lacy, Susan Leibowitz Steinman, Yutaka Kobayashi

_Oxygen Bar_, Laurie Palmer
Hay's Wood. She created an interactive sculpture to introduce the Hay's Wood and its problematical issues to wider audiences.

_Looking for Braddock's Fields: GroundZero Action Network/_ Christine Brill and Jonathan Kline
The project site, Braddock, is an economically depressed post-industrial community. A new toll road is going to be built in the middle of town. The 3D models and uniform became tools to
Box and Shibakawa Reclamation Art Project: Ichi Ikeda
Another artist who works with water as a medium. Water is essential for all kinds of beings. The artist takes a ‘water’s eye view’ instead of a bird’s eye view to look at and measure the environment.

Delta to Delta: Platform
Delta to Delta combined the installation of a micro-hydro turbine on the river Wandle, Wandsworth, London, in 1993, with a score of contemporary music and an extensive process of social engagement along the Wandle Valley.

Allegheny County Sand Mandala: 3 Rivers 2nd Nature
The main image was a Sand Mandala of the three rivers and recovering ecosystems in the Allegheny County. Mandala is a Sanskrit word meaning “cycle”. It consists of many symbols and layers of meaning. Mandala supports meditation about the universe, its energy, life and death. In our case it supported a final meditation about the place, history, community and relationship between nature and culture. It represented rivers, streams, floodplains, watersheds and forests along the rivers. Noel created six Thankas on the wall that consisted of two media. One was three computer flat-screens that showed 1,850 images: the rivers, streams, vegetation, wildlife and communities. Each image ran at about 3-4 seconds. The other was landscape paintings. Noel Helele chose three special places that were occupied by beautiful native riparian plants along each river. The exhibition ended in December. The Sand Mandala was dismantled during the closing ceremony at the gallery. Each creative effort has a beginning and an end. This must lead us to the next cycle of creative engagement and practice.

3 Rivers 2nd Nature: http://3r2n.cfa.cmu.edu
Monongahela Conference: http://monconf.greenmuseum.org
Groundworks exhibition: http://3r2n.cfa.cmu.edu/groundworks
Why do we need to know nature? What is so important about it that we cannot just leave it behind the way air conditioning, electric lights and jets allow us to leave behind our sense of being bound by the immediate circumstances of climate, time and space? The way we have kicked away superstition and myth over the past millennium. Thoreau boldly stated: “In Wildness is the preservation of the world.” Without ‘Wildness’ are we without the remedy for the ills of civilisation? Is that why we must find ourselves in nature – to battle the chaos and anxiety of modern life? We so casually place nature at the opposite end of the spectrum from culture: from society and its cities and institutions and its architecture. Does social order so constrain us (as Freud speculated) that we are forced to deny our natural wild needs? Are we left longing for a freedom that only can be found in the primitive setting of nature?

It was not until I had read Simon Schama’s interpretation of Thoreau that I realised Thoreau’s take on the importance of nature and mine were rather different. I see that Thoreau was more concerned with an almost macho seeming side of nature – its brutal energy. He was far more worried about humans losing their natural vigor through the coddling of civilization: mankind would atrophy, like the Romans who, no longer suckled by the she-wolf (but rather sitting plumply in their hot tubs), were after all conquered by the children of the Northern Forest, whose wildness (and some additional testosterone) was presumably intact.

We tend to think of nature as something separate and other. So often we place nature at the opposite end of the spectrum from culture, culture is us, nature is other. It is as if cities, institutions, architecture, art and artifice were all the result of a long
escape from nature. But nature is not other, it is not some perfect balance that we insert ourselves into – nature is not a separate place. It is simply everywhere, intertwined with whatever we make and it is us. (We are in the food chain, after all.)

Understanding nature, locating ourselves in the web of nature is the ticket to some sort of reachable harmony. Not as a nostalgia for an undiscovered Virgilian greenness, not as rejection of artifice and the city. Let us find nature where it turns up, so that we can have what Barry Lopez describes as the “complex feelings of affinity and self assurance one feels in one’s native place” – the feeling of being at home in the world. Locating ourselves in nature gives us an address where we can find ourselves, feel at home rather than anxiously estranged.

I have been lost in the world. I have lacked of sense of how things work around me. There are basic questions I have not been able to really understand the answers to: Why is the sky blue, where is the moon right now? How does the weather move across the continent? So I have begun answering some of my questions through art, and using installation art to begin to locate people, including myself, in nature – not big Yosemite/Lake District/Alaskan Tundra style nature, but the bits of the natural world that confronts us anywhere.

And that is hugely important to understand – nature does not end with the city. Just because we create asphalt, concrete and glass canyons, dig up all the soil and replace it with pipes tunnels and crushed building parts and desertify the city by chasing all the rainwater away does not mean that nature has been cleared out. Nature is still at work in the city, and in the suburbs. Here you find all the little bits, the tough and un-chewable leftovers, the parts we could not exploit as resources, the very gristle of nature. This is the part of nature I am trying to locate.

In Seattle, for a sewer development project in the Eastlake neighborhood, I was given a street next to Lake Union. They needed a sense of community. I came up with the thought that the invisible neighbours – the micro organisms in Lake Union – were this big chunk of nature missing from everyone’s sense of place. For Cornerstones, I created 32 portraits of the local microorganisms: from the lake and from the land, enlarged their forms and sandblasted them into the one sandstone native to the area. These stones and accompanying cast glass street names were set into the sidewalk at most of the intersections of the avenue.

Wissahickon Food Web was the next stop from the Seattle piece. Rather than individual portraits, this piece showed the organisms’ eating habits and relationships in the complex dinner party of life going on behind the transparent ribbon of an urban stream.

I do a lot of work about water and I am particularly enamoured of tides. Tides are subtle and rhythmic: they do their thing while we do ours. Our lives are not dependent on them unless we sail, fish or worry about storm surges, but it is deeply satisfying to know where the tide is. It is comforting and connecting, but it is visually very difficult to register, unless you are able to mark the tide line.

The Hudson River, when seen from New York City, gives very little in the way of visual cues as to its tidal whereabouts. Most New Yorkers have no idea there is actually a 4’ tide in the city.

I have been commissioned to register the tide with over fifty tide flowers installed around the pilings of two piers in the Hudson in downtown Manhattan. The tide flowers bloom at high tide and close at low tide, their four feet long petals riding the surface of the water as it goes up and down with the tide.

We have a terrible tendency to ruin nature as we go. Perhaps this has to do with our fluctuating sense of power: sometimes we are small and fragile, as in the face of a flood or tidal wave, but other times we are omnipotent as in our ability to change global temperature and promote land erosion. Simon Schama writes: “It is difficult to think of a single such natural system that has not, for better or worse, been substantially modified by human culture. Nor is this simply the work of the industrial centuries. It has been happening since the days of ancient Mesopotamia. It is coeval with writing, with the entirety of our social existence. And it is this irreversibly modified world, from the polar caps to the equatorial forests, that is all the nature we have.”

For me, showing how things are altered by our presence, their diversity diminished by our activities, is part of connecting to nature. It is important to see both what is missing and what is there.
I created a liquid map of the watershed in Philadelphia, containing water from each of the tributaries of the Delaware River. The map was drawn by thousands of plastic cups. Each cup was filled with water from the actual tributary it referred to. There is a discrepancy between the city's existing streams and the historic streams that used to cross the city. Philadelphia appears rather dry in its center. Historically, Philadelphia was swampy with creeks as shown by old maps of the area, but in the 1800s these waterways were diverted into sewer lines and then covered with roads and later airport runways and parking lots. These waterways were depicted in the map as overturned, empty cups.

Seeking out the tributaries can be an arduous task – urban water is so removed from the streetscape to the point of being invisible. Most roads run above and across the waterways (sometimes we only know a waterway is near because the road bears its name). We mark our locations and navigate not by the dendritic course of the watershed but rather by the grid system of roads. To find urban streams, I became a water detective searching for where the road sloped down or where the last remnants of vegetation clung to slopes too steep to develop. When you see a patch of trees and shrubs in the midst of the urban fabric, like a small green oasis on a hardscape desert, you know water is present.

Watercourse started out as an invisible ankle high show, but in several weeks my transparent installation became a green and ochre map of the different algae that grew in each waterway.

As people moved through the map, they found where they lived and could see how their backyard streams connected to the next tributary and into the major rivers. I observed that people crossed the map at the same places where actual bridges were built in the real geography of Philadelphia. Mapping at this scale is an effective way of feeling the watershed with your feet and body.

I wanted to do a permanent piece about the local watershed that showed the connection of rain to the waterways. All of this rain water falls out of the sky and onto our buildings and then becomes magically invisible – piped away by engineers as if it were poison.

At The Friends’ Central School’s new Science Center, I designed a bluestone terrace, tipping it away from the building and sandblasting it with a huge detailed map of the Delaware watershed, every stream and river incised into the 30ft diameter stone circle. When it rains, the water runs down the tributaries and into the rivers, emptying into the runnel of the Delaware. In the rain, the map creates a watershed in miniature. Students can find their backyard stream, see where it connects and figure out how far they are from the ocean and give themselves a sense of their watershed address. The now-missing historical streams are also demarcated using a font that differentiates them from the existing streams.

And it is hard not to be undone by what has gone missing over the years. As Aldo Leopold said: “One of the penalties of an environmental education is that one lives in a world of wounds.”

But let us not forget small nature, the nature of in between, of leftovers. Nature has not fled the city, but rather it is bent by our structures and systems. And we need to know how it has been changed, that is part of locating ourselves in nature’s time.

Urban Oldfield: A Diagram of a Vacant Lot began as an idea of what would be there... if the building was not. I remember parking in the site when it was a vacant lot before the museum was constructed. I recreated a diagram of a nearby vacant lot, using 13,000 stems of steel wire with abstracted “seed heads” made of leather, paper, vinyl and rubber. Though the installation was about the past history of the site, it more readily showed the complexity of natural systems. The patterns of growth forms of field species: rosettes, basal clumps, clones, monocultures and single stems were simplified and made more apparent. In this way Urban Oldfield was also a piece about the intricacy of greenness.

Many people just see a uniformity of green growth in these small places of nature – in the vacant lot, the metro-forest, the side of the highway. By diagramming the complexity of nature, I am trying to clarify the layers of vegetation and to show their intricate growth patterns. My greatest compliment was someone who said: “I’ll never look at a vacant lot in the same way. I didn’t know so much was in there.”

Seeing green in nature, we reflexively think ‘healthy’ and ‘natural’ but I have contended with invasive species as a forester and I feel it is important to know about the history of the nature, to
You Are Here: Locating Ourselves in Nature

Stacy Levy

And more information is explained by numbers. That is why I love early 20th-century science books on weather and tides, they are so diagrammatic. Here is a diagram (fig 3) about how the winds blew down trees during a hurricane. This diagram is far more understandable than a chart or graph; it needs only a few words to say what it is depicting. In more and more science text books, modern graphics are purely numerical. But I cannot locate myself in numbers. I need another visual form to understand the concepts: a diagram or a picture. I am starting to see that the method of conveying the information makes all the difference to me “getting it”. And if we want people to understand science, then there should be more than one avenue of expressing it.

In the beginnings of scientific inquiry, science was the domain of the wealthy — it was rare and expensive (and potentially politically dangerous, so it helped to have royal connections). Scientific apparatus was kingly in its craftsmanship and involved as much in its aesthetic concerns as its scientific — they were not so clearly delineated and separated. But now our dials are brought down to minimal functionality – red light-emitting diodes readout encased in black plastic. Yes, scientific apparatus is now cheaper and more widespread, which is essential; but something gets lost when the instrumentation does not reflect the wonder of the thing being observed — sort of like a church in a double wide trailer.

Of course, nothing can quite match the intricacy of nature, but by not honoring nature’s beauty or sophistication we loose something in the message being conveyed. Nowadays, the wind blows at 40 knots from the NNW, but once in people’s minds the wind blew from Borealis’ icy mouth and swirled across the sky. There is less that is evocative about these stripped down information systems, especially if you are not a numerical thinker. If the flashing red light fails to catch your imagination, you stop paying attention.

So maybe part of locating yourself is having heard enough versions about how nature works, so that you can take at least one...
Sometimes I get to work on the rivers themselves. This time in Pittsburgh on the Allegheny and Monongahela rivers, which meet to make the Ohio river, which then flows to the Mississippi. I really love urban rivers because they give us just about as a big piece of nature (altered nature, of course) as we get in most cities. Here at Point State Park is a huge expanse of open water to look out over but not step into. But what really gets me is the moment where the swirling forms of nature meet the perpendicularity of the city. I created River Eyelash, made from strands of 4,000 buoys which extend 100ft out into the water. Each floating line becomes like an eyelash for the city.

I wanted to show the currents at work on the site, both the wind and water currents. I built the piece to show the changing wind and river currents as it is doing by serpentining in an ‘s’ form on one river and a ‘c’ form on the other.

And there were some unexpected lessons: the floats bobbed up and down as the waves went through the line of buoys, and the strand of buoys became a perfect image of wave action.

Nature is very hard to understand. It works at such variable scales – from the too-small-to-see microscopic to the too-vast-to-comprehend wind patterns and ocean currents. I feel a similar constraint in our ability to see the world as we have with hearing the world. When I think of the range of hearing that dogs possess and their ability to hear the lowest tones to the highest frequen-
Here is the problem: when rainwater fills the inside of a coal mine, it comes in contact with the exposed coal and makes a nasty cocktail of heavy metals, which in this case turns all the streams in this area a tell-tale orange. The mines in this region stretch for miles underground – this one (fig 8) looks like Lower Manhattan and are like abandoned cities underneath these struggling towns throughout south western Pennsylvania. The mines are filled with water and creating the toxic discharge known as Acid Mine Drainage or AMD.

T. Allan Comp, a visionary historian, had an idea that the engineers had had their chance to solve this discharge problem, and hadn’t done it effectively yet. These towns, which once supported the industrial revolution of steel in America, were now ignored and suffering from the unfinished business of coal mine cleanup. So Allan Comp got a group of artists, landscape architects and scientists together to see what would happened if artists and designers joined in with the problem solving.

Our team was given this Vintondale site to design a work that solved the problems of the site. After numerous meetings with the community, landscape architect Julie Bargmann, Hydrogeologist Bob Deason and Historian T. Allan Comp and me as artist and forestier, we created a master plan to treat the water and to give the community a much-needed park and a site that honored their labour history. Rather than remaining hidden behind a fence, in this water treatment park, you could play baseball or go bird watching.

We didn’t want this project to look like the other passive treatment systems, which had a rather intestinal look of trying to cram a great length of treatment into a small space. We wanted this treatment system to tell the story of itself and its history while it treated discharge from the mine. We created a Litmus garden, where the spring and fall foliage would reflect the changing color and quality of the water as it passed through the treatment.

The project took many years and required a great number of volunteer groups. (These groups had an amazing variation: one day we had the boy scouts in the morning and drunken drivers doing community service in the afternoon.)

All together, we created a park and treatment system. Rather
than obliterating the industrial history of the site, we tried to put the sheer scale of the building back into the site by making ‘ghosts’ plinths of the buildings’ footprints in the purifying wetland area where these huge industrial structures once stood, belching out coking smoke and coal slag.

So after 10 years, $300,000 dollars and hundreds of volunteers, the site turned from industrial remnant to a park that met the communities’ criteria and celebrated the sublime beauty of this toxic but intriguing site. This sort of project is what I hope more artists can become involved in. I hope that new venues will open up to allow artists to work on engineering projects to collaborate with nature in new ways not yet considered in the canon of engineering.

But with all this hope for the AMD project... Sometimes I look around at the ills of the world and I feel absolutely ineffectual as an artist... At particularly low moments I look to the Hudson River School for reassurance. In the 19th century, Americans were searching – looking for a place where they could sense the presence of God blended with an affirmation of their own place in the vast landscape of America. The Hudson River was already rich in history due to the not-so-distant Rebellion of the American Colonies (called the American Revolution by my history teachers). But it took the artists to give the river its spiritual identity. “If nature were a cathedral then the Hudson is its grand aisle,” wrote the 19th-century essayist Nathaniel Parker Willis.

Many artists are currently working to bring nature into view. Like the Hudson River School, who showed the capitalists that they could not gaze upon the forest and see only a calculation for board feet of timber, that nature can be an un-processable non-commodity, and still be filled to the brim with benefits of the spirit.

Can we be the next wave of messengers to show that these last bits of nature's gristle are valuable and filled with some essential sense of home place?

That nature is filled with spirit – the spirit of the nematode, the spirit of the flat worm – not just the grand vista. But the everyday, the everywhere. All the little parts that pin us to our world, process the dead bits, capture the sun's energy. Can we teach people how to get a handle on beauty and the variety of life forms in the mould on a grapefruit, a shovelful of soil, a bucket of ocean, the branch of a dead tree?

Knowing nature more deeply and from more angles makes me more wondrous, feeling both uplifted and connected.

Someone recently asked me if I would consider doing work about something not related to nature. I don’t want to switch subjects yet, I guess I have a kind of monogamous relationship with nature.

So my assignment is as messenger, my texts are the city’s waterways, or median strips, parks or leftover forests. Giving some people a different, more visual access to understanding the nature that surrounds them. And in ways carrying on with the advice of Thoreau, who said: “The whole world can be revealed in our backyard, but only if you give it proper attention.”
Several years ago, a writing project found me needing to revisit an earlier book of mine, Has Modernism Failed? which was first published in 1984. I assumed it might be a sticky proposition at best to put oneself back in the groove, so to speak, in order to rethink one’s work of decades ago and update it in an auspicious way. So much has changed since then. After rereading the book, however, I discovered one thing that has not changed – the relevance of the book’s core thesis: where do spiritual and moral values fit in? It is still the case that art finds no direction from society, and that we have an overload of stimuli but an absence of coherent purpose. If anything, the impenetrable pluralism of competing approaches is much worse now than it was before. The challenge remains for artists to develop a value system that is not just adaptive to the bogus institutions of capitalism.

In Western culture, artists aren’t encouraged to be integral to the social, environmental or spiritual life of the community. They do not train to engage with real-life problems. Instead they learn to be competitive with their products in the marketplace. We live in a society in which all our institutions are defined and measured by this market ideology – none has escaped. Artists are continually challenged in their identity as winners or losers in the success game, and “professional recognition” in the form of brisk sales and positive reviews, remains the set pattern of thought that colours the internal rhythms of art making.

What makes anyone change their beliefs about something? We in the West have been indoctrinated with an aesthetic paradigm that exempts art from any moral tasks, and denies it any redemptive potential for social change. I have often quoted the critic Clement Greenberg as saying: “I don’t see art has having...
ever, in a real sense, affected the course of human affairs.” In this single comment, Greenberg voices an attitude that has coalesced into the received aesthetic wisdom of an entire era. We are still dealing with the fallout from this philosophy.

For most of my lifetime, there has been a rigid separation between aesthetics and ethics – just as there has been a split between subject and object, and between art and life. In the same way that science aggressively rejects religion, modern aesthetics has rejected ethics, as if the truths of the two realms were somehow mutually exclusive and had little in common. Few people are willing to talk about ethics and aesthetics in the same breath.

In his book A Theory of Everything, Ken Wilber puts forth a world philosophy that weaves together the many pluralistic contexts of science, morals, aesthetics, Eastern, as well as Western philosophy, and the world’s great wisdom traditions, to suggest that the world is one undivided whole, and related to itself in every way. The well-being of each part is the responsibility of every other part. Referring to the earlier cultural movements of traditionalism and modernism, Wilber suggests that integralism is the next big developmental step. “Integral” conveys a sense of responsibility to humankind as a whole and to all living beings. The idea of integralism involves some very real changes in perception and understanding that have been occurring over the past twenty years.

I would claim that a more ethical artistic vision is already functioning among us. Founded in dynamic models of integralism, intersubjectivity and transdisciplinarity, this new artistic culture no longer depends on the primacy of the dealer-collector-critic-curator network, but replaces it with very different kinds of networks. For such artists, however, vision is not defined by the disembodied eye. Art is not viewed as spectacle, but as a social practice rooted in the whole being. It steps beyond the artificial separation of art and life.

In December of 2002, I received a letter from a potter named David Levy, describing his personal struggle to combine work in ceramics with his concerns about the world. “I am finding it increasingly difficult to engage in the making of pots as objects to sell,” he wrote. “This is not enough. Objects once served human-
add diversity to this ecosystem. As an eco-artist, Collins tends to frame his thinking in ecological and biological models. “How do we diversify our own thinking in order to get off this singular path of market-based object production – along with its self-limiting notion of freedom of expression? How do we create new institutional forms, or else, through interdisciplinary practices, breach the existing forms to discover new options?” Going outside their own discipline is one way that artists can introduce new levels of diversity. As Collins observes, the purpose of this is not to disparage what others are doing. Rather it is meant to open up new options and lead to the understanding that art can be many things at once. The intent is to enrich, not to force these ideas on anyone. As Collins himself puts it: “How do I leave room for other things at the table and at the same time find a new path that has relevance?”

In his *Manifesto of Transdisciplinarity*, theoretical physicist Basarab Nicolescu argues that reality is not something that exists only on one level. Rather than the self-sufficiency of each discipline unto itself, Nicolescu, like Wilber, advocates a transdisciplinary approach that can deal with the dynamics of several levels of reality at once. The point about the transdisciplinary approach is not just that it traverses disciplines, but that it deals with the dynamics of several levels of different and even mutually exclusive realities (ceramic arts, say, and hunger; aesthetics and ethics) at once. Also, it has a unique goal: to propel us beyond either/or thinking into a co-existence of nested truths. In this model, no particular discipline is privileged, since they are all integrated into an open unity. Of course, it is likely to provoke the old catchword question, which always hangs around these discussions like a migraine: But why is this art?

I believe we are slowly moving away from what Nicolescu calls “the era of the disciplinary big bang and relentless specialisation”. Strategic changes are happening in which the individual artist becomes an integral component of a larger social network. Specialisation may still be the most general trend we know, but a significant number of artists have extended artistic activity into social and environmental domains, transcending disciplinary boundaries. Not surprisingly, institutions have begun to follow...
They overlap and repeat themselves – in much the same way that songs use refrains, or mantras “chant” their meaning into being.

I now believe that globalising trends in the world have brought us, along with many negative consequences, a unique opportunity for the evolution of consciousness. We now have access to all the world’s traditions, customs and beliefs that can mutually enrich our own. Much of the wisdom and direction that Western culture sorely needs are to be found, for instance, in Buddhism – a model of spirituality that actively promotes the principles of relationship, community and moral obligation – the difficult dignity that I have been trying to seek for art and give birth to over time for many years. Clearly, what is called for now is a conscious revolution of the conscience – a return to ethical and spiritual integrity, which is the essential gift that Buddhism has to offer the West at this time. In Buddhism, as in Ken Wilber’s integral philosophy, there is this sense of a living continuum that cannot be cut up and divided, because of the symbiotic interactions and interpretations of everything within it.

Some time ago, I received another letter from a man living in Ohio, a self-described collage artist and writer, who also works full time as a social worker supporting people with disabilities. Keith Banner wrote that he now prefers making connections with disabled people – helping them to buy groceries, find places to live, purchase art materials, go to classes and museums, etc – to being in academic culture, with its endless, esoteric theorising about “texts” and “paradigms”. And that, in the course of his social work, he has discovered that many of these people with disabilities make wonderful art – often in secret. He and a friend began collecting their work and now organise exhibitions to show it. My books, he wrote me, have helped him to see himself in a new way as an artist, not “self-involved and struggling with made-up, phony aesthetic problems”. Instead he has chosen to reach out and help people usually shut out of the conversation about art and culture.

“I am not sacrificing anything,” he says, “and I am gaining everything.” Reaching out, he claims, cuts through the fakery and pretence and allows art to be a huge part of his everyday life “without the excess baggage of artistic snobbery and professional suit. The key metaphor here is that of the network, both as a new pattern of organisation and as a generative creative force.

During World War II, the Dadaists and Surrealists responded to Auschwitz and the horrors they were facing then by infiltrating the world with meaningless, aggressively absurd objects – white-haired revolvers, Lesbian sardines, vaccinated bread and flashes of lightning under fourteen years old. They felt that in such a catastrophic world, art no longer mattered. They felt impotent to change anything, and so the idea was to offer gibberish, as a kind of mocking witness, to a civilized world that appeared to have gone mad.

But even back then, there was another story being played out that is somewhat more promising perhaps. Albert Camus, a writer who worked in the French underground during World War II, saw as the “task” of his generation that of “keeping the world from destroying itself”. As a result of living through what he described, in his Nobel Prize acceptance speech of 1957, as “twenty years of absolutely insane history”, Camus actively embraced the struggle to construct “an art of living in times of catastrophe in order to be reborn by fighting openly against the death instinct at work in our history”.

In my own writing, I have tried to point to the contradictions between capitalism and spiritual values, and to the dangers of a culture whose will to money is greater than its will to meaning. Anyone who wants to change the tides of where our civilization is headed, however, needs first to look at the Big Picture – seeing how things fit together, interconnect and interact. And after that, as Annie Dillard suggests, you go home and soak your feet. Because the task at hand, the task of cultural renewal, leads straight to difficult questions: What makes anyone change their beliefs about something? How do individuals overturn a dysfunctional world view and break free of limiting ideologies? Can the neutrality of art for art’s sake be replaced with an ethics of connectedness? Can we recover, if we choose, from the estrangements of Western civilization? Can art help us to revision ourselves and our way of living?

I continue to return, again and again, to these passionate questions, as to unfinished business, for they are my life’s work.
an ability to live in an interconnected way, with compassion and responsibility. This means being able to step away from acquisitive and exploitative forms of individualism, and from the self-serving egocentrism of the present social order. I happen to believe, along with the Dalai Lama, that compassion, love and altruism are not just desirable spiritual attributes, they are qualities that have become fundamental to our survival on this earth. They are the direct path to a more enlightened society. But having your stock be high as an artist does not necessarily equate, in the present paradigm, with goodness of character. In fact, quite the opposite is true: anything that smacks of moral goodness is considered sad for art.

"If you’re an artist, being a good man – or a good woman – is pretty much beside the point when it comes to your actual accomplishments," Margaret Atwood writes in her book. “Not being able to hit high C is not redeemed by being kind to dogs.” Atwood intends to be a bit satirical, but the attitude she is satirising is quite real. It is how we think. This is one cultural attitude I would personally like to reverse – just hang upside down by the seat of its pants. As far as I am concerned, we have now “outlived” the period of ethical neutrality in our culture, and the possibility of regarding our work as being beyond moral scrutiny. Not only that, but I have come to believe that the truly significant product of an artist is his life. Creating oneself as an excellent person in all the activities of one’s life, and in one’s whole being, is the real work of art. The way I see things now, making the personality over in a spiritualised and value-oriented way is the only real antidote to the catastrophic and compromised world we are living in: shifting from egocentrism into “altruistic mind”. This altruistic quality is known in Buddhism as bodhicitta, or warm heart.

In The Reenchantment of Art, I wrote about artists whose work springs from a certain state of mind that is not unlike what Buddhists call “warm heart”. Lynn Hull, for instance, who lives in Colorado, makes art for wildlife, which takes the form of small sculptural enhancements to their natural habitats. Her first work of “trans-species art” consisted of spiral-shaped pockets – she called them “hydroglyphs” – that were carved into rocks in Utah and Wyoming. These small trenches were meant to serve as drone”. In my estimation, this is an artist who has become truly independent and self-directed – not manipulated by the coercive influence of others, mass consciousness, the media or the art market. His work honours the world.

Twenty years ago, when I first began writing Has Modernism Failed? the art world was a recognisable place, in which everyone knew who the key players in the scene were, and everyone seemed to share a common vocabulary and perspective. Now everything is much more complex and diverse, so much so that no single individual – critic, analyst, or artist – can possibly be conversant with all of it. Yet what strikes me now is that the art world has bifurcated into two completely different aesthetic paradigms, two poles that differ sharply in their views about the potential meaning and purpose of art.

In the first instance are those who don’t really question the world view in which they find themselves, but merely swim in it like a fish in water. These artists seek sameness and assimilation, not to challenge cultural assumptions, and their art tends to reflect the culture at large. Certainly we do not have anything resembling an avant-garde anymore to protest the ills of capitalism – nobody is burning the hairs off their chest or crawling around on broken glass to make a point. What we have instead are artists expressing different world views. Either artists uphold and actively participate in this set of existing arrangements, or they have developed a different value system that isn’t tied to the authority of the art world in any fundamental way. The latter tend to be less talked about than the more vociferous and highly visible members of the first group, but they are an integral part of the postmodern scene all the same.

It has been my premise all along that art can make a difference – to the welfare of communities, to the welfare of societies, and to our relationship with nature – and that this, in large part, should be the true measure of its success. Not money, not favorable reviews, or an impressive list of exhibitions, signaling a conditioned allegiance to art world approval, but making art as if the world matters.

So here is the real heresy. I have come to believe that true success manifests through a certain quality of spiritual awareness and
truth is, neither art nor artists are what will save the world. Only a
new way of being can do that – one that knits people together
through an inspired ethos of generosity and caring, and a return to
the root idea of what it means to make moral choices. The funda-
mental problem in the West today is the illusion of autonomy. It
fails to recognise the interconnectedness of everyone and every-
thing. And it ignores the well-being of the whole.

My friend and colleague Carol Becker, Dean of Faculty and
Vice President of the School of the Art Institute in Chicago,
claims that what our culture really needs now, especially since
9/11, is to put community at the core of our species' nature. “The
collective project of our species,” she states, “is to engage in its
own conscious evolution beyond individual identity, difference
and nationhood. Its success can best be measured by how well we
care for, protect and value each other's lives.” Obviously a new
paradigm is always more than just a conceptual challenge. It
requires that we personally leave behind certain things that have
been a central part of our individual and cultural self-definitions.
It requires that all-significant change in consciousness.

It has been said that “acedia”, or not caring, is the most domi-
nant sin of our culture today. If selfishness is indeed the virus that
pervades the human species, then the high-level commitment of
artists who want to use art to change life for the better can lead us
in a new direction. We need this higher view, since we have been
horribly sidetracked by the negative influences of a super ficial
culture that is spiritually illiterate and morally bankrupt.

What I am proposing is that the cultivation of compassion and
the attainment of our Buddha-nature are the crucial cultural and
spiritual tasks before us. Because nothing less than a transforma-
tion at the core of our being – manifesting in the courage to act
differently in the world –can save us at this juncture.

So let me close with my favorite line of poetry, by Rainer
Maria Rilke:

“Work of the eyes is done, now go and do heart-work.”
As an ecological artist and a practising academic researcher, I am interested in form, content, poetry and symbols, as well as the concepts and theories that inform and sustain the practice. On the following pages I will provide an overview of shifts in aesthetic thinking that I find relevant to what I see as an expanding discourse and practice. I will begin with a very brief overview of traditional aesthetics, then outline some exciting new ideas in environmental and inter-personal aesthetics, then draw some conclusions. I would like the reader to consider that these new aesthetic ideas can reshape our perceptions and potentially our practices. They can help us see new paths into a future that today seems quite uncertain.

**Art Nature and Traditional Aesthetics**

Nature has been a fundamental subject of artistic practice and aesthetic inquiry throughout history. Nature has filled the artist with fear, awe and wonder. The material product of the artist or artisan is the primary subject of the philosophy of aesthetics. Since the 18th century the dominant western philosophy of aesthetics has concerned itself with the appreciation of things deemed pleasing, or things with the potential to evoke an experience of the sublime. In minimal opposition, Marxist aesthetics has been more concerned with the social relationships inherent to production and reception. The operative word here is things, isolated objects that exist independent of context and those that view them. The concept model is simple, a human appreciator and a thing, framed in a neutral manner, which is then appreciated. The means of appreciation was primarily visual, the objects of consideration were carefully bounded to separate art from daily life.
The viewer was expected to be properly (empirically) disinterested in the object of contemplation. These things were then analysed for beauty, paying attention to their unity, regularity, simplicity, proportion, balance, measure and definiteness. Alternatively, works could be analysed for their relationship to the sublime, the feeling of sublime emerges when a viewer considers an object, which sets up a tension between imagination and reason. In the contemplation of the finite object we find an experience of expansive grandeur, wonder or awe. In this historic model of aesthetics the world is left to rational utility. These ideas of beauty and wonder are exclusive, properly separated from that world and confined within reductionist laboratories that let us see the work without the corrupting influences of social-political or environmental conflict. The white walls of the museums, the raised stage of the symphony, or the frame of the painting all provide us with a clear understanding of where we go to look and contemplate objects for their inherent aesthetic value. Modernist aesthetics have little value for artists that have embraced post-studio practices. Artists with an interest in environment, social or political issues, working with objects, texts or actions, do not easily fit within this classical method of aesthetic analysis. Ecological-art relies upon experiences enmeshed in complex process and natural systems. Authorship lies on a fine line between action and concept. Relevant form rarely stands alone, more often form is extracted from the context itself. Complicating things immeasurably, there is a whole social-political element of the work that cannot be ignored. The elite, disinterested root of aesthetic philosophy would seem a long way off from art practice focused upon strategic engagement with perception and human values.

**Environmental Aesthetics**

There are a number of important thinkers in the area of environmental aesthetics: Jay Appleton, Ronald Hepburn, Rachel Kaplan, Stephen Kaplan, Jack Nasar, Cheryl Foster and Marcia Muelder Eaton are just a few. Arnold Berleant, author of *The Aesthetics of the Environment* (1992), and Allen Carlson, author of *Aesthetics and the Environment: The Appreciation of Nature, Art and Architecture* (2000) are two primary and often oppositional voices in this area of knowledge. In a co-edited volume of the *Journal of Aesthetics and Art Criticism* (Vol 56, No 2, September 1998), they define environmental aesthetics at face value as “the application of aesthetic concerns to environment”. This concept is almost the polar opposite of the traditional aesthetics outlined earlier. First the term environment qualifies aesthetics in important ways. It is inclusive and expansive, opening this philosophy to consider a range of ideas, conditions that wouldn’t be considered under the exclusive methods of traditional aesthetics. Qualifying aesthetics with environment also raises the idea of application. Once aesthetics accepts the challenge of finding the means and methods of describing aesthetic value in complex and diverse environments, the application of that knowledge is likely to follow. In the combination of environment and aesthetics a reconstructive post-modern path is drawn out of what could be described as a reductionist endgame seeking a truth that has decreasing relevance. In environmental aesthetics, the full range of nature-culture manifestations are opened up to multi-sensual perception, emotional/intellectual analysis and social-aesthetic evaluation. What was once simplified in the pursuit of empirical truth has become complicated and complicit with the world once again. The question is, can environmental aesthetic philosophy handle the complex experience of dynamic systems with intellectual tools developed over the last two centuries studying static self-referential objects of fine art and the experience of the sublime?

**An Aesthetic of Engagement: Subject Object Collapse**

Berleant is a philosopher and a trained musician interested in both the theory and application of his work. Since 1970 his provocative and bold writing has intended to expand the focus and purview of aesthetic philosophy. In *The Aesthetics of the Environment*, Berleant outlines aesthetics of engagement, which seeks ultimate unification of nature and culture, declaring “there is no sanctuary from the inclusiveness of nature”. In this model, Berleant outlines a radical aesthetic theory that casts aside the subject-object relationship for what I would describe as an integrated systems analysis approach to aesthetics. In this theory,
nature and humanity are one field, artifacts (the material product of culture) are no longer isolated and the disinterest that has marked two centuries of aesthetic philosophy gives way to passionate engagement with contextual experience. Berleant references the post-studio move into space and place as a direct challenge to the visual, where the viewer is immersed in a somatic experience of the complex and dynamic aesthetic field. He declares: “If conventional aesthetics impedes our encounters with the arts, it obstructs even more the appreciation of nature.” The contemplation of nature is viewed as a space and place question devoid of boundaries or frames. But more importantly he states: “Nature, in the sense of the earth apart from human intervention, has mostly disappeared.” He describes nature as a cultural artifact, through both action and conception, which is further fractured by a diversity of cultures and the different ways they act upon and conceive of nature.

Berleant claims that: “The aesthetic is crucial to our very perception of the environment. It entails the form and quality of human experience in general. The environment can be seen as the condition of all such experience, where the aesthetic becomes the qualitative center of our daily lives.” He works to provide an aesthetic paradigm intended to open the world to a “full perceptual vision of aesthetic, moral and political conditions”. He seeks to close the gap between disinterested aesthetics, claiming it evolved into a distinction separating art from life. His proposal is based on the following three points: the continuity between art and life; the dynamic character of art; and the humanistic functionalism of the aesthetic act. He applies these ideas to the city, working to develop what he calls an aesthetic paradigm for urban ecology. The components of his paradigm are:

- Integration of purpose and design as typified in a sailing ship.
- Integration of fantasy and spectacle, subhuman and human as revealed in the circus.
- Communion between heaven and earth, sanctuary and steeple found in a cathedral.
- Union between individual and celestial, organism and cosmos found in a sunset.

These four components are described as typical dimensions of a city that are overlooked, subsumed or subordinate to utilitarian development. In turn they are presented as strategic interventions in cities that are part of an important urban aesthetic. As I wrote out these four strategies, I found myself surprised and delighted by their poetic delivery. Berleant provides us with a strategy, an aesthetic program using models and metaphors from the oldest and most delightful human experiences. As much as I enjoy the reverie, it occurs to me that what he has left out is any sense of a critical-social or creative-social approach to art and urban ecology. He has kicked aesthetics into the present but left art in the past. There is no sense of the artist as a strategic cultural agent acting with full awareness to shift the symbols and metaphors of a culture invested in the power of state and capital who are, in turn, invested in utilitarian approaches to cities. He closes with the following statement:

“It is through creating an urban environment that is a dynamic synthesis of the practical and aesthetic, where need and awareness are equally fulfilled, that function is both most complete and most humane, and where enlightened aesthetic judgment can become a social instrument toward a moral goal.”

To create a true aesthetic of engagement, enlightened aesthetic judgment has to open itself to critical and creative social-art practices. The historic components presented by Berleant provide us with a historically referential framework for a culture that integrates the aesthetic with the functional. It does not give us the right tools to achieve those goals in contemporary culture. Glorious sailing ships, spectacular circuses, breathtaking cathedrals and cities oriented to the sun emerged in cultures that put primary value on those things. The integration of the subject-object provides us with a new conceptual framework. But the components of the paradigm are passive, more likely to conform than transgress. Integration, communion and union are based on relationship. The culture of capital and its utilitarian approach to city building are the dominant economic and political power. Re-establishing humanistic-aesthetic values in a culture of capital will
require a strategy that is both cognisant of that power and able to develop strategies to achieve the desired relationships. Artists and aesthetic philosophers who are committed to an aesthetic of engagement are going to have to get realistic about the application of their ideals. This will be the challenge of both the art and the aesthetics of engagement. I would add two components to his paradigm to open up that potential.

- The unification of society and art, aesthetics, morality and equity.
- The recognition of the relationship between places, people, need and limits.

**Intersubjective Aesthetics**

“It seems clear that art oriented towards dynamic participation rather than towards passive, anonymous spectatorship will have to deal with living contexts and that once an awareness of the ground or setting is actively cultivated, the audience is no longer separate. The meaning is no longer in the observer, nor in the observed, but in the relationship between the two. Interaction is the key to move art beyond the aesthetic mode: letting the audience intersect with, and even form part of the process, recognising that when observer and observed merge, the vision of static autonomy is undermined.”

Predicting the evolution of work that gains strength and focus ten years later, the text above makes it clear that we must move beyond the aesthetic mode. Gablik’s challenge raises questions relevant to Bereeant, as well as to the review of Kester which follows. There is no doubt in my mind that we must move beyond the classical aesthetic ideas of commonalities in the perception of beauty. It is also clear to me that the current laboratory approach (gallery, museum, stage), where artwork is held in temporal and cultural stasis, then aesthetically examined, demands rethinking. In the previous section, Berleant examines the idea of the subject-object relationship which if retained provides a logical basis for claims of truth, but if imploded reframes our fundamental relationships.

Our subjective understanding of the world must expand, which has the potential to develop new experience and responsibility in the process. This philosophical discourse is somewhat tangential to the dominant discussions that are occurring in the arts. It provides us with minimal points of direct reference and senses none of the social/institutional realities of art, realities that I would define as increasingly conservative and reactionary.

In counterpoint to environmental aesthetics I will provide a brief overview of the work of Grant Kester, Nicholas Bourriaud and one of their primary foils, Clair Bishop. Where the philosophers interested in environmental aesthetics frame their analysis in terms of subject-object, by comparison the arts-based historians and curators frame the analysis in terms of individual and social subjectivity and inter-subjectivity.

**Kester’s Dialogue Aesthetic**

Grant Kester constructs a significant historical and theoretical framework, which reflects Gablik’s intuition on future directions from 1991. In *Conversation Pieces* he provides a critical aesthetic framework for artists that define themselves, “through their ability to catalyse understanding to mediate exchange and to sustain an ongoing process of empathetic identification and critical analysis”. In a well-argued text he explicates the historical struggle against this kind of practice, as well as the intellectual structure to support the practice. He stakes the intellectual basis of his work in Mikhail Bakhtin’s ideas about subjectivity formed through dialogic interaction. His method evolves from the ongoing dialogue about ethics and rationality vis-a-vis the contemporary critique of Habermas. He also makes a cogent counter argument against the critical pundits that claim (on the basis of irresolvable power relationships) that dialogic interaction is not a viable means of defining community. At the core of Kester’s project is a critique of the historical fixation on singular authorship and autonomous objects. He refocuses our attention upon conversational or dialogic artworks, concentrating upon the aesthetic values of carefully planned interactions by artists such as Adrian Piper, Suzanne Lacy, Helen and Newton Harrison and Fred Lonidier from the US; to British artists such as Stephen Willats, Lorraine Leeson, Peter...
not constrained to things alone, and once we accept that functional reality there is no reason to ignore discourse, collaboration and process. The dialogic practitioner develops a social-interaction that results in a state of co-experimentation; with the potential for intersubjective transformation. This is a significant shift from object to viewer experience, to agent to agent discourse.

He differentiates this intersubjective dialogic aesthetic in terms of two main ideas. First, unlike traditional aesthetics there is no need for a universal or objective aesthetic. The dialogic aesthetic is based upon consensus that is arrived at locally. This is a huge leap from the predominant notion that aesthetic perception has to be linked to universality through transcendent authority. Transcendent authority throughout history has been defined in relationship to God through mysticism and faith; and to reason in terms of the defensible (or replicable) truths. Second, the entry into aesthetic perception is traditionally individualistic, and once the experience has been processed the viewer is prepared to enter into discourse vis-a-vis the shifts that have occurred in subjective perception and (potentially) understanding. Kester suggests that discourse is not only a one-way tool to be used to communicate what has been experienced. We can enter into an aesthetic discourse that has the potential for inter-subjective communication, which can result in shifts to perception and understanding. To synthesise my understanding here, the dialogic aesthetic is an aesthetic of diverse consensual knowledge, which is dynamic and linked to a discursive network or public. A condition of the formation of that discursive network or public is the potential for intersubjective transformation through discursive inter relationship.

His analytic framework for dialogic art includes the idea that the function of art is to serve as an “...open space within contemporary culture: a space in which certain questions can be asked, certain critical analysis articulated, that would not be accepted or tolerated elsewhere”. The other approach involves an identification of those “...salient characteristics and linking these to aspects of aesthetic experience that have been abandoned or redirected in some way during the modern period”11. The specific areas that interest him are a critical temporal sensibility and spatial imagination. In simpler terms he also identifies this as the

Dunn; and the Austrian group WochenKlausur. He claims that the criticism of such works should carefully analyse the “interrelated moments of discursive interaction within a given project”14. This is a significant proposal, as it means the critic needs to sustain a working relationship with the process, or rely upon the artist’s record of the process to define the validity and consistency of those moments of interaction.

Kester provides a framework and methodology to engage with work that intends a discursive approach to creative practice. First the work is based upon listening and a dependence on intersubjective vulnerability, furthermore, it is focused upon the generation of local consensual aesthetic knowledge rather than a universalised knowledge. Kester's critical method is based upon three points of critical analysis: the context and process of the dialogue, the quality of the intersubjective exchange and indications of empathic insight.12 As I understand it, dialogue is the methodology, the nature of the approach. Intersubjective ethics and empathic insight are the methods that we must embrace to be effective at facilitating a creative and transformative dialogue. I think it is important to say that, while artists take a range of positions vis-a-vis this work, few of them pursue it from the position of complete objectivity. In every case, there is a focus, and in the best work there is a clearly stated intent. Without that intent I would argue the work is an act of facilitation, or potentially, transactional analysis rather than art. That is not to say that artists working in this area are not availing themselves of ideas in these areas of structured and transformative social interaction.

Kester's dialogic aesthetic is developed from the Kantian idea that in consideration of the aesthetic we are relieved of practical interests and instrumental intent. In other words, we bracket needs and desire for a moment and consider the relevant experience for what it is, in relationship to what we understand about the world. Aesthetic experiences have transformative potential, they encourage us to think beyond the utilitarian realities of day-to-day life. After aesthetic experience the assumption is that we are left more open and receptive. The question Kester asks is can we experience this type of aesthetic appreciation in our relationships with other people?20 He argues that transformative experience is

Kester’s dialogic aesthetic is developed from the Kantian idea that in consideration of the aesthetic we are relieved of practical interests and instrumental intent. In other words, we bracket needs and desire for a moment and consider the relevant experience for what it is, in relationship to what we understand about the world. Aesthetic experiences have transformative potential, they encourage us to think beyond the utilitarian realities of day-to-day life. After aesthetic experience the assumption is that we are left more open and receptive. The question Kester asks is can we experience this type of aesthetic appreciation in our relationships with other people?20 He argues that transformative experience is
delineating the culture that unfolds before us, to the development of alternate universes and relationships. He sees this as a shift in the social, economic and institutional function of art. He refers to a “growing urbanisation” of art practice, a cultural shift from acquisition, maintenance and display of possessions in a museum or gallery, a space to be “walked through”, versus the idea of city space, a framework of intersubjective space and time that is “lived through”\(^{19}\). (This may be a condition that has more validity in Europe where state-funded biennales are part of a larger agenda to bring art into relationship with society.) Bourriaud is not offering a major shift in the artworld or aesthetic philosophy, merely an alternate space of creative endeavour. This is a strategic framework, developed so that the older institutional models do not constrain the work and the ideas that inform its reception. This is the strength of the hypothesis.

Bourriaud’s aesthetic is framed within Felix Guattari’s (1992) ideas of subjectivity as something that is formed in social interrelationship. He is primarily interested in liberation of subjectivity, a release based on Guattari’s social analysis. Developed within a state hospital, the concepts are based in a structural analysis of power and its points of transverse connection to that hierarchical structure. Guattari is interested in the relationship between subjects in isolation (a condition of neuroses) and the development of subject groups where the ability to make a statement is both heard and verified. Genosko provides clarity on this: “The joining of a subject group enables a patient to become a signifier in a communication system whose members are interdependent, yet simultaneously in a relation of difference, but nonetheless totally involved in a collective process which frees one from the individuated hell of isolation.”\(^{20}\) This psychological framework, developed within an institutional setting, is considered to be a radical shift in ideas of subjectivity. Indeed, Genosko and Bourriaud both claim it as the basis for a new form of social creativity.\(^{21}\) The following statement is also telling of Bourriaud’s relationship to that foundational principle: “Guattari’s concepts are ambivalent and supple, so much so that they can be translated into many different systems.”\(^{22}\) In this reference Bourriaud gives us an indication of the complexities and the vagary of Guattari’s writing.

Bourriaud’s Relational Aesthetic
Nicholas Bourriaud’s text was not written with the same purposeful intent of Kester’s. A collection of previously written articles has been reworked into a provocation, of contemporary aesthetics. He defines his aesthetic as “...judging artworks on the basis of the inter-human relations which they represent, produce or prompt”. He defines the work, in terms of “...human relations and their social context, rather than independent and private space”\(^{16}\). He is interested in the viewer’s immersion in the work, the nature of the dialogue that the work may engender and the potential for the viewer to occupy the same space as the work itself. He claims that art challenges the a priori notion of what we perceive, and that meaning is the result of interaction between the artist and the observer. This is the baseline upon which he examines the relational practices of artists such as Liam Gillick, Rikrit Taravanija, Carsten Holler and others. In a chapter on the ‘Policy of Forms’, he clearly states his intent to retain a commitment to aesthetic value without getting waylaid by the politics or validity of the social critique.\(^{3}\) He proposes a relational aesthetic, “...taking as its theoretical horizon the realm of human interactions and its social context, rather than the assertion of an independent and private symbolic space”.\(^{4}\) Bourriaud’s primary thesis lies in the shift from representation, its production and reception to a more interactive relational concept. Another way to consider this is as a move from...
With its references to liberation through creativity, the development of new forms of being that link the mind, the body and the social, ecological and political, it is both a beacon of desire, and a difficult body of work to understand. By my reading it is uncomfortably close to the inchoate definition of art itself.

Bourriaud differs from Grant Kester in that he grounds his relational aesthetic back into the materialist tradition (Kester stays focused upon the intersubjective process). The physical product remains the fulcrum of aesthetic consideration in Bourriaud’s contribution, although it is the relational impact that he seeks. Ultimately, he sees the artists as “an entrepreneur/politician/director”. Furthermore, he states that: “The most common denominator shared by all artists is that they show something”[23]. It isn’t objects that he envisions in this statement, but rather constructed spaces for encounter, often spaces that are indicated or created from within museums and urban places. For clarity I would suggest that we can think of these projects as laboratory experiments in the discursive forms, or the setting for public realm discourse. Kester describes this way of working, and its critical analysis as attending to the “...mise en scène for dialogic interaction”[24]. This is the articulation of the space in which the dialogue occurs.

Bourriaud’s fundamental position in not one of discourse, but the meaning and function of form when it is framed and defined by the intent to engender dialogue. His means of validation harks backwards rather than forwards. The work “...has to be judged in a formal way: in relation to art history, and bearing in mind the political value of forms”[25]. Bourriaud seems to occupy that difficult seat on the fence, or possibly he is simply more pragmatic and realises that until more take it upon themselves to realise that there is a fence worth peering over, to leap over it is a dangerous proposition. Kester and Berleant are boldly willing to leave the infrastructure of the dominant aesthetic behind, while Bourriaud moves into the new subjectivity with more discretion. Despite this equivocation and the care he takes to bridge the past with the present, the work is subject to the claim that the work lacks formal resolution, and has weak historic precedent. In response he states:

“Forms are developed one from another. What was yesterday regarded as formless or ‘informal’ is no longer these things today. When the aesthetic discussion evolves, the status of form evolves along with it and through it.”[26]

This is another way of saying that we see what we can conceptualise. More importantly, within this framework exists a major shift from the ideas of a classical aesthetics as a philosophy of things, primarily visually perceived and valued in common; to an evolutionary philosophy that sees aesthetics as a discursive process of social and spatial evolution; through a dialectic of perception and conception. In the relational aesthetic we start to see those things that connect rather than those things that define the edges of that which is perceived. This is the strength and the import of Bourriaud’s text as I understand it. The new aesthetic ideas in subjectivity are no longer reactionary but revolutionary, they have the potential to help us ‘see’ the path that we are in pursuit of.

Kester and Bourriaud are among the authors considered in an ongoing series of critical articles by Clair Bishop: *Antagonism and Relational Aesthetics* (2004) and *The Social Turn: Collaboration and its Discontents* (2006). In the first text she references Rosalind Krauss’ demand for media specificity. This is considered essential if the work is to “self-reflexively operate”, this is in Bishop’s own words “…the holy grail of criticality”[27]. Bishop’s interests run to media complexity, specifically in the area of installation art. Her interest in that work is in the experience that is produced through the work in relation to the viewing subject. Where she parts with Kester in particular and Bourriaud only in more general terms is their move away from the material reality of the work, toward the political and social discourse that the work engenders. Although there is some common ground between all three critics, Bishop references Deutsche and her insights about conflict, using that position to interrogate power in relational art works in the first article. There is common interest in intersubjectivity, although there is not common critical basis for the analysis. Bishop’s interests seem to be primarily based in an agonistic approach to rela-
tional practices, following Deutsche, Laclau and Mouffe, while Kester’s approach is more firmly routed in the discursive approach typical of Habermas, Bakhtin and Levinas. Bourriaud comes at the question of intersubjectivity through the radical psychology of Guattari, with specific references to ‘the three ecologies’. Below is a quote from Bishop that clarifies the common ground she does share with Kester and Bourriaud:

“The tasks facing us today are to analyse how contemporary art addresses the viewer and to assess the quality of the audience relations it produces: the subject position that any work presupposes and the democratic notions it upholds, and how these are manifest in the experience of the work.”

The 2004 article primarily focuses upon Bourriaud’s text and his critical insight. She takes him to task for his unremitting interest in the structure of discourse, the scene of dialogic encounter, and what she perceives as a flaccid political point of view. She is particularly critical of Bourriaud’s interest in convivial relationships of dubious political intent, a criticism that I would agree with.

There are three issues for Bishop, first the political, moral and ethical standards of the work is simply not tough enough, not up to her agonistic standard of critical inquiry. Second she claims that the work is predicated upon a false modernist ideal, the concept of a whole or singular public, a homogenous sense of community. Finally the emergence of moral and ethical judgment in art troubles her, as there appears to be some fear that it will replace what she refers to as “higher criteria”. In the end, she stakes her ground: “The work of Hirschhorn and Sierra is better art not simply for being better politics (although both of these artists now have equally high visibility on the blockbuster art circuit). Their work acknowledges the limitations of what is possible as art... and subjects to scrutiny all easy claims for a transitive relationship between art and society.” In addition she asks: “But does the fact that the work of Sierra and Hirschhorn demonstrates better democracy make it better art?” One problem occurs when Bishop demands a standard of diverse publics, yet at the same time retains a highly specialised and singular view of democracy. Other problems occur as she occupies the high ground declaring herself to be the arbiter of “better art” and “better democracy”. On one level this is what critics do, on another level her validating reference to the “blockbuster art circuit” and agonistic democracy are limited at best. She has clarity about what has to be done, she even claims that the links between artistic quality and political efficacy need better integration, yet she is willing to give very little room to explore those relationships within her standards. For instance, while I agree that the political intent of the relational art argument is weak, it isn’t because it lacks agonistic application, it is because it is not political, it is primarily social. In turn, the work that Bishop venerates reveals, or more to the point manufactures, public realm conflict. The art creates an agonistic spectacle, a fetish indulgence in manufactured conflict that contributes little. Neither the work, nor the critic recognises the need for the convivial sensibilities that are the counterpoint to public realm conflict and the source of passions that encourage resolution.

Bishop returns to her interest with more clarity and a bit more of an ideological position in the essay that follows. The main point of contention in this article is the ethical and moral turn in criticism. Empathetic approaches to collaboration and social practice are tainted in her mind by relationship to the community arts tradition. Clear and singular authorship is important to her critical world view (in the same way that media specificity is essential to Krauss), and anything that undermines that is suspect. Reviewing Kester, she seems to miss the point of his effort with her admonition that reviewed through his standard “...a collaborative art project could be deemed a success if it works on the level of social intervention even though it founders on the level of art.” The critical distinction she seems to have missed here is that his aesthetic treatise is specifically targeted towards dialogue, with a clearly stated intent to ignore material content of the work. So the art can’t be something that is separate, unless of course she deems him to be incapable of making that decision. While there is much to her critical view that is worth considering, her bias against distributed authorship, her need to patrol the boundaries of aesthetics and limit new approaches to subjectivity ultimately...
undermine her substantive critical perspective. The sense that the work can not be defined by consensus and agreement alone gets lost in what is ultimately a conservative reaction to new work and criticism.

She closes her article with the following admonition:

“As the French philosopher Jacques Rancière has observed, this denigration of the aesthetic ignores the fact that the system of art as we understand it in the West – the ‘aesthetic regime of art’ inaugurated by Friedrich Schiller and the Romantics and still operative to this day – is predicated precisely on a confusion between art’s autonomy (its position as at one remove from instrumental rationality) and heteronomy (its blurring of art and life)”.

Personally, I see no denigration of the aesthetic in the work of Kester or Bourriaud. I see a much-needed update to an area of knowledge that has vociferously exclaimed its own limitations. Mary Deveraux has stated that “…aesthetics has benefited from ‘an ethical turn’: a revival of long-standing debates about the moral function of narrative and the social impact of the arts”.

She refutes the claims of timelessness and universality that Bishop relies upon, suggesting that the discipline is only now emerging from the doldrums of the past. Where Berleant and Eaton forge new ways forward in subject-object relationship, where Kester experiments with radical creative inter-relationship and Bourriaud considers the material space of discursive relationship, critics like Bishop are more worried about quality and the structure that allows for impeccable defence. I am not convinced that defence is what is called for, when fundamental critical principles are slipping far beyond the social, political and aesthetic realities of our life in this time.

Bishop relies on two points, a sense of overt criticality in the work, and the retention of oppositional dialectic positions (such as autonomy and heteronomy), as she searches for her own ‘holy grail of criticality’. I am not sure it is there to be found.

As I have argued throughout this dissertation, the equivocation that is typical of art, curatorial activity and criticism do not serve us as well as they did at the turn of the 20th century. Where it might have been a radical act 100 years ago to claim autonomous heteronomy, today this position simply reinforces the artist’s role in the past, as a condition of today. Used as a validating principle it is increasingly a point of constraint rather than a path to help us develop and understand new theory and its relationship to practice.

Bishop’s contribution is essential to the development of this work. She provides an important critical relationship to Kester and Bourriaud. If we are to move ideas about this work and its validation forward, we need authors like Bishop to take these issues up in publications like October and Artforum. These are not the typical sites for this kind of discussion. The struggle in all of this work will be to see how long it takes for the ‘aesthetic regime’ she refers to, to catch up to new practices and theories. Bishop has also said: “Political moral and ethical judgments have come to fill the vacuum of aesthetic judgment in a way that was unthinkable forty years ago.”. In the sum of this work, these are important indications of a change. From convivial discourse to agonistic criticism, art has begun to move beyond the “aesthetic mode” as Gablik predicted it would back in 1991.


3. Ibid, p. 166
4. Ibid, p. 166
5. Ibid, p. 57
6. Ibid, p. 60
7. Ibid, pp. 62-69
8. Ibid, p. 81
18 June, 2006]. http://www.aesthetics-online.org/ideas/devereaux.html

First and foremost, I would like to thank the organisers of the Artful Ecologies conference for inviting me to Falmouth. There is no doubt that the topics of this event are of great relevance.

Today, I would like to speak about two process-based sculptures. The first one is primarily relating to an ‘ecology of mind’ or, in other words, to an ‘inner landscape’; the second one, ‘Saxeten, a growing sculpture’, just recently finished in Switzerland, is relating to the discussion on sustainable landscape development in the Alps.

To start with, however, I would like to give you some background information on my artistic equipment in general.

Educated as a visual artist and musician, for me, an artwork has never been exclusively an aesthetic object. In principle, my work aims to deny pure formalistic perception. The visual expression is not limited just to the formal elements of the artwork. My works confront with images that conceptualise meaning. Here art sees itself as a genuine cognitive faculty operating on the plane of transdisciplinary networking. Not only interdisciplinary in terms of co-operation with scientists, architects or designers but transdisciplinary, transcending the academic disciplines by including local people, communities, NGOs, etc, as sources of equally valid knowledge and by crossing social and cultural boundaries.

I believe that everything is related; nothing exists by itself. An awareness of the mutual dependency of things is important in work processes. The focus is on connectedness, context and the complex relationship between the whole and its parts; in the widest sense it is on the relationship among various paradigms.

In all my projects, it is important for me to visit the site beforehand. It isn’t just a question of determining formal criteria...
or spatial dimensions; it’s also about the history of a place and the way things interact in general. The work has to fit in with the place, as it were. Only then do I make any decisions about the kind of artistic intervention I am going to do.

This is especially relevant to the work Raum naasmine / The Revival of Space, the renovation of Tallinn Art Hall in Estonia as a sustainable sculpture.

On my first visit to Estonia in the autumn of 1992, the dilapidated state of the Tallinn Art Hall was patently obvious, both architecturally and mentally. In a conversation with Anu Liivak, who was director of the Art Hall at this time, I quickly realised that the very existence of one of the most important venues for Estonian art was threatened.

I started thinking about the basic structures, the very foundations of exhibiting art. What possibilities are there of combining art with a culture of responsibility? Given the extremely difficult process of transition towards independence in Estonia at the time, it seemed important to me to formulate an artistic approach in the spirit of universal responsibility that would actually make a difference.

The idea came to me spontaneously in a purely intuitive, pre-intellectual way. “Raum naasmine / The Revival of Space”, a work in the form of the total renovation of the Tallinn Art Hall. I made this suggestion to Anu Liivak before I left - which is to say, within two days of being there.

The next step then was to set in motion an extensive process of networking and communication. Step by step, I established a multilayered network between Estonia and Switzerland, between art, politics and business.

First of all, a network had to be established in collaboration with the Tallinn Art Hall and the Estonian Artists’ Association - on the one hand with the local authorities and tradespeople, on the other hand with the relevant authorities in Switzerland. What then followed was not only the clearly visible outcome that still resonates today, but above all a process of communication between Estonia and Switzerland, between art and business, between diplomacy and cultural policy. The negotiations and discussions over the course of two years with so many different individuals, institutions and official bodies, including negotiations on financing the project, formed an important part of my work as an artist. Construction finally began in 1994. The inauguration of the newly restored Art Hall – and, with that, of my exhibition, with all the usual rituals of the art world, such as invitations, posters, catalogue, and opening – then took place in February 1995.

For the normal duration of a temporary exhibition, the completely empty Art Hall was ‘on view’.

The work was interpreted in a number of ways – as a performance, an installation, a cultural/political action. Others saw the emptiness of the building as a spiritual gesture or regarded the work process as a mind-sculpture. But for me it was even more than that. It was an act of respect, an artistic intervention aiming to be both, ethically responsible and valid as work of art. And for that matter, a sustainable sculpture by which Estonia’s most important exhibition venue was returned to the fold of art. Hence the title, The Revival of Space.

Sustainable development – in this particular context – means being able to integrate art into the quest for a cultural strategy that has a future. It completely undermines the conventional, traditional concept of Western art. For instance, a forward looking aesthetic approach involves looking for forms of ‘lessness’ and also explicitly involves a different notion of time. Both of these are aspects of enormous importance in The Revival of Space as well as in all my other works.

Sustainability or ‘future viability’, as I prefer to call it, also has
lective perceptions therefore have a central effect on expectations about the shaping and development of landscapes and habitats.

Resulting from these multilayered investigations and in collaboration with the local people, with students from the State University of Architecture and Engineering and authorities of the Canton Berne including the State Forest Service, I then created the work *Saxeten, a growing sculpture*. The work consists of three parts:

*A bridge for pedestrians, a cabin, and photographs.*

The bridge has two functions: it is a bridge that restores the hiking trail across the Saxetbach that was interrupted by the floods of summer 2005. It is also a symbolic act of crossing a boundary and as a symbol of the dialogue between urban Switzerland and country, between centre and periphery.

*The cabin*

The second part, the cabin, is accessed by the hiking trail; it’s a place where you can rest, think or meditate and is available to everyone, irrespective of their background or views. This lends the space another, higher significance. It embraces the world symbolically and invites visitors to the mountain valley of Saxeten. From the cabin there are sweeping views to the north, beyond the valley, to the south into the valley, and towards the Alps. It is a motive from landscape painting, a quote, and yet tangible real at the same time. Both, the bridge and the cabin are built with FSC certified, local larchwood that was personally planted by the pioneer forester and statesman Karl Albrecht Kasthofer, (1777-1853) who also was the founder of the term ‘sustainable forestry’ in 1823.

*The photographs*

The third part is the location of the work in photographs at the University of Berne.

It was my premise to create an artwork that is socially relevant. The work defines art as a socially related practice whose potential lies primarily in the development and provision of specific ways of thinking and working: it encourages certain capabilities. This implies a transdisciplinary engagement on the boundary between

Saxeten, a growing sculpture is a research project about the extended potential of art that has a viable future. Similar to the Tallinn Art Hall project – it is about overcoming barriers in art. It all began with the Canton of Berne deciding to convert the former Women’s Hospital in Berne to accommodate the entire Cantonal Department of Revenue but, after renovation had begun, those plans were scrapped. Since 2004, the building has been part of the University of Berne. After closely examining the core elements of the Department of Revenue, I decided not to do the work in Berne but rather in Saxeten, a little Alpine village and the Canton’s financially weakest community. Money flows directly and indirectly, in a great variety of ways, between urban Switzerland and the Alpine region, bringing both advantages and problems to the two areas. I attempted to unravel the financial connections between the two regions in order to understand the effects on the Alpine landscape and habitat of these financial flows.

Another research focus was: What images mark discussions on sustainable landscape development in the Alps? And what does the landscape transformation in the Alps signify from an aesthetic, cultural point of view?

Residents in the Alps attach a different value to the Alpine landscape than do tourists or residents living in an urban environment. Social context and cultural processes thus have an influence on the way landscape is perceived. They determine what is viewed as beautiful or ugly, valuable or worthless, what should be respected or what should be freely available. Individual and col-
the world of art and other lifeworlds. The process-oriented aspect and the networking are the key importance here, as is the approach to complexity and uncertainty. All my works are basic research. Typically, they involve synthesis, pointing towards ways of thinking and ways of acting that do not operate according to the categories of division and polarisation, but seek systemic connections instead. Disciplinary boundaries are crossed. Creating something of future viability involves a massive searching and learning process. In doing so, the key question for me is this: Is art just meant to react, or should its design competence actually contribute to problem-solving strategies?

I am convinced that a paradigmatic change towards an enduringly viable society is impossible without knowledge that can be imparted by art, with all its aesthetic and cultural dimensions.

I want to say more: artist’s have at their heart the task of transformation. This task is to provide the existential ground for the human condition. It is necessary for a full and dignified life.

Falmouth July 15th 2006 / Berne, March 2007
Once upon a time, 300 million years ago, the granite massif of Carnmenellis was intruded into the Cornish landscape not more than a score miles to the north of Falmouth. Hot vapours filled all the fissures and gaps and then cooled into rich seams of copper, tin and many other minerals in close proximity. The Carnon River, rising at Blackwater and running into Restronguet Creek at Devoran cuts at right angles through these diverse veins and has been the focus for my RANE research.

An ex-miner I spoke to in passing believed that you could find nearly all the elements of the periodic table here, but he was not too forthcoming when I asked him about the Philosopher's Stone, the Materia Prima for turning base metal into gold.

However, it seems that there was so much profit to be made from the baser sorts of metals that there was no need for any mythic transformative material – though if it had been found, it might have prevented an increasingly intensive scarring of the land over the past 3,000 years of continuous human habitation.

Stephen Turner Materia Prima

Once upon a time, 300 million years ago, the granite massif of Carnmenellis was intruded into the Cornish landscape not more than a score miles to the north of Falmouth. Hot vapours filled all the fissures and gaps and then cooled into rich seams of copper, tin and many other minerals in close proximity. The Carnon River, rising at Blackwater and running into Restronguet Creek at Devoran cuts at right angles through these diverse veins and has been the focus for my RANE research.

An ex-miner I spoke to in passing believed that you could find nearly all the elements of the periodic table here, but he was not too forthcoming when I asked him about the Philosopher's Stone, the Materia Prima for turning base metal into gold.

However, it seems that there was so much profit to be made from the baser sorts of metals that there was no need for any mythic transformative material – though if it had been found, it might have prevented an increasingly intensive scarring of the land over the past 3,000 years of continuous human habitation.
I began to infiltrate the valley, to burrow about across the short six miles from source to estuary, looking at the dialogue between the natural and the manmade. The stunted growth along the stream bed for example, could have been indicative of grazing by cattle or sheep. However, it is probably the result of contamination by arsenic that occurs naturally, and in the much greater concentrations left behind by an industry that mined and refined it in huge quantities here, until the end of World War II at Point Works in Biscoe.

Tailings (or waste) from mining have filled up the valley bottom in serried layers for many generations. What the river once washed down unaided, people began to throw and rinse down themselves – particles of copper, tin, cobalt, nickel, lead, iron, arsenic and uranium, all too fine to be caught in the refining process, along with the gangue, so called waste minerals such as quartz. Here in microcosm in the Carnon Valley we can see how economics has been allowed to assess (or assay) the value of the earth.

The whole form of the landscape has been changed by this process of silting down. When the Great Western Railway built a viaduct across the valley in 1860, for example, the navvies had to dig down through nine metres of this waste material. The river at its source (symbolic of purity?) also bubbles out through tailings. They clearly spread out into the intertidal river too, as revealed by core samples taken by Camborne School of Mines, and it has made Restronguet Creek the most contaminated part of the Fal Estuary.

Attempts have been made at filtration, concentrating the heavy metals in gathering pools below the different mine workings, but they are left to fail when the mines close, and subsequently get used as a dumping ground for all manner of other detritus, like the pillow I found half submerged in a ferric sea, symbolic perhaps of the sleep of humanity through impending catastrophe, or maybe a reminder of a nearby bed and breakfast industry that wishes to use a sanitised mining heritage as the basis for tourism.

Meanwhile, the river is still fed by fine contaminating particulates in suspension, carried along in the water flow.
Self-decomposing Laboratories is a body of work, and ongoing research, based on green architecture. Best described as temporary interventions, or art that decomposes itself, it uses sculptural architecture to produce buildings out of straw bales, wood and clay or lime plaster. These buildings house oyster mushrooms. The buildings are designed with the opposite principles of those found in conventional green architecture, so as to absorb moisture from the ground and offer the oyster mushrooms a breeding ground within the structure. Growing into the straw bales and allowing them to decompose, this continuously changing art is eventually consumed by the gourmet mushrooms.

The oyster mushroom cultures permeate the straw-bale architecture and internal wooden shelving that houses Polychloride Biphenyl (PCB)-contaminated soil (mixed with growing media of woodchips, straw and potatoes). Over a period of about 18 months the mushrooms split off the chemical structure of PCB into non-toxic substances. Depending on climatic conditions the...
mushrooms will regenerate the laboratory unit, subsuming it within the surrounding environment over a period of between three to twenty-five years. Only Environmental Agency scientists doing soil analyses have full access, with their results being presented on information boards while the process of decontamination takes place. The laboratories are constructed to allow other visitors visual access only.

Contamination of the earth’s soil through particularly dangerous chlorine products, such as polychlorinated biphenyl (PCB) – used in fire-proofing, weather-proofing and insulation materials – finds its way into human beings through the food chain. The hazardous waste produced by these materials is subject to a process of ‘chemical washing’ and high-temperature burning. During this process, harmful substances are bound in solvents, which then have to be disposed of through special waste management. The oyster mushroom – renowned as a delicacy among connoisseurs – has proven to be a safe alternative for bio-remediation of soil contaminated with these PCBs.

About oyster mushrooms

Oyster mushrooms of the genus pleurotus are wild growing and can be cultivated as gourmet mushrooms. They are pre-eminent decomposers and can also be used for some types of agricultural waste management. They thrive on most hardwoods and wood by-products (sawdust, paper, pulp sludge), as well as all the cereal straws, corn and corn cobs, sugar-cane bagasse, coffee residues (coffee grounds, hulls, stalks & leaves), banana fronds, cotton seed hulls, agave waste, soy pulp and on other materials too numerous to mention. The mycelium has the unique ability to split the chemical structure of highly toxic PCBs into non-toxic substances without enclosing toxins in their fruits. This way oyster mushrooms can be used to re-cultivate industrial ground contaminated by PCBs by using the principles of biotechnology. Pleurotus species can best serve to reduce hunger in developing nations, and to revitalise rural economies.

Is the use of oyster mushrooms a practicable alternative for the rehabilitation of contaminated soil? And which artistic aesthetic emanates from a bio-technological environment? All these research questions are situated in the borderland between art and science. The use of the most up-to-date techniques and application of the most recent scientific findings aim to propose interdisciplinary solutions. As an artist I am actively interfering in the process of restoring damaged nature, in the hope of promoting a more conscientious handling of our natural resources.

The installation particularly examines to what extent decomposing cultures of oyster mushrooms, injected into a construction of straw and wood, can decontaminate earth infested with PCBs.

Oyster mushrooms eat up hazardous waste

With the ‘Oyster Mushrooms Eat Up Dangerous Waste’ experiment, the following questions are examined:

- To what extent do PCB bonds accumulate in the ‘delicacy food’ – the oyster mushroom?
- Can the mushrooms continue to be used for financial means without hesitation, or do they have to be disposed of and to what degree must this disposal take place?
- How does the human organism react when it consumes oyster mushrooms that have been used in soil redevelopment?
- How can people be protected from possible misuse and poisoning?
- Can artistically aesthetic aspects be tied into biotechnological development of industrial soil?
- How can remaining buildings and infrastructures be used?
- Can something like the ‘intervention’ already described exist as an independent work of art in process?
- Is this about ‘industrial design’ or ‘scientific design’ – since ecological redevelopment of health-hazardous industrial sites has become a central issue aesthetically?
- What are the connections to ‘art in public space’ and ‘art in construction’?
- Looking ahead: how can a biotechnological ‘soil sewage plant’ be developed from this project?
The name of this project, *Dendros*, comes from the Greek word for tree. It is the root of several words we use today. In a similar way, trees themselves are at the root of some of our feelings and responses to the natural world, in particular the way we think about timescales of environmental change.

Trees and woodlands are one example of what people value about the natural environment. They are a dimension of it with which we can interact on a day-to-day basis. There is a whole array of systems of policy, legislation, economics, land management and scientific research that tries to define the value-set involved with this, in ways that can be measured, manipulated and spoken about in a common language.

This project is an exploration of what might be different, or additional, when some of this is put into an arts context.

For the author, this is mainly a question of ‘fresh ways of seeing’ and broader ways of understanding value. For other people, it may well be something else.
Some geological or cosmic timescales of change are hard to get a mental grip on. With a tree, we can see it grow – we can easily relate to its lifespan as comparable to a human lifespan, and we might feel sad when a familiar individual one dies. At the same time, the older examples span many human generations – they are living history, something we plant as memorials for grandparents and legacies for grandchildren. The range of social, sacred and mythological significances around the world is no surprise. Here is one of our most accessible links to bigger things.

The Dendros project also grew, and developed branches that included photographs, protected areas policy, reading the landscape, art & conservation partnerships, tree physiology, climate change and the science of phenology, an installation in a forest, a small colour book (launched at this conference), railway timetables and Buddhism.

This short presentation offers just a glimpse of some of these.

The photographs
First, some photographs. A series of images were made of instances where trees have interacted with human interventions in the landscape. They are all from locations in Devon & Cornwall, and were all taken in 2005.

These images end up embodying a kind of microcosm of humankind’s interaction with the ecosphere. The exercise became a new way of asking questions about this relationship, in particular, asking about what are the real timescales, of action and reaction.

Each photograph comes from a site that is subject to a protective designation of some kind – Site of Special Scientific Interest, or something similar – and only from the subset of those sites where tree or woodland interests are specifically cited as one of the aspects of value for which the site is being protected in the public interest.

The creativity shown by a tree with embedded metalwork is an unstoping process of movement and change. Each instant has activity of enfolding, scarring, callousing, corroding, shifts of position, and making new forms. Cause and effect can be perceived, perhaps, but the increments are unseeable.

The process involved weeks of overlaying maps, researching access, and getting advice from site managers about where examples of these interactions might occur on relevant designated land. It was surprising to discover that most of these people, who otherwise have intimate knowledge of their own particular sites, either had never seen this dimension or were certain something must be there when it was not.

This therefore had to be worked out by the author himself, searching dozens of sites, making educated guesses from maps, and so on. The process overall became a new journey through the landscape and its history – one which was focused on noticing it in a different way, and developing a sense of where one would be likely to find what was being searched for. In the case of the many sites that the author had not visited previously, this is now the only way in which he knows them.

The examples selected for the presentation, and for the Dendros book, are those which are the more unresolved ones. They have a kind of moral ambiguity, and some kind of balance between forces. They prompt a question as to which element in the scene is prevailing – is it the human-made one, or the tree? Which of these has the greater strength, or endurance, or purpose? How, in history, are the values that attach to the fenced railway, the deer park and the nature reserve juxtaposed with each other? How can we tell which elements of the situation are enduring, fleeting, damaging, harmonious, ignorant, feeble...? Do we know if what we are witnessing is control, cooperation, codependency, subjugation, symbiosis, give & take...?

As mentioned above, one microcosm of humankind’s interaction with the natural world. In the older examples, even the distinctions between what is organic and what is inorganic, what is artificial and what is natural seem to become blurred too.

If the tree is an introduced species and it was planted by a human, how ‘natural’ is that? And how ‘dead’ is the metal? Some of the photographs show that the metal’s molecules are folding back and rearranging themselves in front of the growing tree-bark.

The physiology of tree wounding and recovery
The project included a component of research on arboriculture. It transpires that there has been a degree of mythology in the past
One example is the way in which analogies used to be made with what happens in animals. When an animal is wounded, damaged cells die and they are usually replaced by equivalent new cells that form in the same place. Trees, however, do not 're'-generate tissue in that way. Instead they grow new tissue in a new place, which then covers over the wound or the foreign body to stop infections entering.

This so-called ‘woundwood’ remains in place, and it is permanently distinguishable throughout the rest of the life of the tree. At a microscopic scale, it exhibits a different cell structure. The outward distinction, on the other hand, is a matter of pattern and form – it is a function of growth history, and one could say it is primarily sculptural. Intriguingly, the experts consulted during the project were unable to explain why this happens in quite a different way between different species.

These trees, therefore, show a kind of recovery, but they are also changed for life. This is one process we cannot plan or manage. No matter how skilled we might become in relation to curing human traumas, and despite the fact that there is an entire field of science concerned with restoration of nature, this aspect is beyond our control.

**Phenology and climate change**

In the next 100 years, global temperatures are predicted to rise by a magnitude and at a rate unseen since before the last ice age. One section of the *Dendros* book touches on the wide variety of ways in which climate change is expected to affect trees – as individuals, as parts of dynamic ecosystems and as woodland habitat in the landscape.

Two points about this are highlighted here. One is that a good deal of the controversy on this subject appears to arise from the fact that when it is argued by some that a trend is a unique directional shift, or by others that it is instead part of a repeating cycle, neither camp is very good at first at defining what timescale they are talking about. For an insect that only lives for a few weeks a
protected areas like this is provided for, they tend to say something like “for future generations” or even “forever”. The plaques tell a different story. Examples of what they show are things like:

- Devon County Structure Plan: applies up to 2016
- Regional Spatial Strategy for the South West: runs until 2007
- UK Biodiversity Action Plan woodland targets: apply up to 2015

And the others all have the same kind of time-horizon.

There is some interpretation of all this nearby for people to read. Hopefully, it has the effect of being thought-provoking about these issues of timescale.

Leaf fall timetables

The introduction to this paper did mention train timetables! This relates to a wonderful encounter between the leafing cycle of trees and modern travel discovered during the project.

In the autumn of 2005, some of the train companies in England published temporary leaf fall timetables. The publicity material even included a specially designed logo, with a stylised leaf motif.

The following is a quotation from the published texts: “Trains will run to a revised timetable during the leaf fall period. Services will depart a few minutes earlier to compensate for the extended journey times. The special leaf fall timetables… will start on Monday 17 October and continue until the problem of leaf fall has passed – this will depend on the weather.”

This seems to return us full circle to the stories told by the fence wires and railings in the first part of this project, by prompting perhaps the same question as to whether we really have technological superiority.

Conclusion

This project, for the researcher, was a small personal odyssey, and a rich experience. It appears that it may also have prompted other people to look a little deeper at how different, sometimes, are the assumptions that we each make about the ‘event structure’ of the world we inhabit.

It has also highlighted our relationship to trees as an especial-
ly accessible way of encountering and engaging with these questions. Beyond this, other facets of the work bring in aspects of birth, death, Buddhism, sustainability, paradox and ‘ignorance management’ – though space has precluded any treatment of those in this short summary. For more, readers are referred to the Dendros book, and are encouraged to continue the dialogue begun at this conference. (With thanks to all those who assisted with the project.)

Context
The mining of natural materials from the ground; copper, tin and china clay, has been a major activity within the catchments of many Cornish rivers, leading to contamination from metalliferous compounds creating a source of suspended solids in our water courses, in some places staining the river beds bright orange or coating them milky white.

The artist’s motivation to create art for this project came from her love of rivers and an interest in their physical, chemical, molecular and phenomenological effect both on man and the landscape.

Methodology
The process; to walk a length of river, gather a water sample, process it in the lab by reducing it on a hot plate, the resulting quintessence then put through an X-ray fluorescence machine to gather computer data analysing the levels of five trace elements.
ever, I feel safe in the knowledge that there are really no answers necessary, and that the data is a visual reference that speaks for itself. I spend my time looking for answers that aren't really there. I hold onto the belief that there cannot really be answers as the whole river system, the ebb and flow of the water cycle is a continuous one, and trying to make sense of the data is really only trying to capture a moment in time.

But isn’t that what contemporary art practice is all about – catching a moment in time? Can I sit safe in my knowledge or should I start to push the boundaries?

Challenging myself to get out of my comfort zone and confront my belief that there are no answers necessary, and engaging the help of the County Hydrologist, Dave Watkins; the Environment Officer at the Fowey Harbour Commissioners Office, Claire Hoddinot and Ben Westgate, a PhD student from the Camborne School of Mines, I begin to make much more sense of the data.

Drawing in professionals to a project enables a much wider remit and allows for more diversity in both thought and deed. Once unleashed, the project takes on a new dimension, with additional mapping and data analysis structures and procedures I had never thought possible.

Mapping

In creating my own kind of ‘new geography’, mapping is vitally important to me. The use of maps helps us to locate ourselves, to define areas in new forms and create linear ways of travelling and recognising ‘place’.

New ‘DigiMaps’ created by Dave Watkins are produced and begin to inform the project. Maps of major river catchments, followed by maps of river catchments of anything that constituted a Cornish river or stream, seem to make a mockery of my simple hand-drawn maps.

Instead of a graphic map, made by an artist’s marks that represent a river, the maps become more and more detailed, with colour blocks that resemble a fierce painting-by-numbers activity; both fascinating in their own right and in their accuracy.

The insistence by the Hydrologist of re-introducing the

This data is then used to produce a series of maps of Cornwall using GIS computer software, defined by the levels of trace elements in the rivers.

Collecting

Collections are a valuable resource in charting how the world is changing. I realise that one single sample of water can not stand-alone. Being part of a collection gives it substance. Creating my own taxonomy with my collection of water samples – in the way that I collect, process and analyse them – is important to the work. Empirical progress in creating data and a collection of bottles of water is vital to the effectiveness of the work. Creating data appears to bring all these elements together in some very visible form of category.

The continuation of this project, through all four seasons, Autumn, Winter, Spring and Summer has enabled me to shift and change the meanings and values of these collections and increasingly discover the power of data.

For instance, the data shows that seasonal changes indicate levels of Trace Elements in the physical make up of the water grow and shrink, but then so does the water volume, so it begs the question; Does it change at all?

From the collection of data, patterns evolve and indicate minute changes. Dates and places become part of a series of indicators: the where and when; as well as the how and why? The data has an almost sterile appearance, just like the maps. All the numbers and points indicate something more real. The collection and reproduction of data is vital in this work as it gives substance to the visual, and provides answers to questions arising from the artefacts placed before the viewer.

Establishing a strong visual is not to become an illustrator of data, but an interpreter of data. As the collection of samples and data grows the information from the results becomes more varied, and tells a story of its own. It provides a kind of supporting evidence.

Of course, with my assumed role as a scientist I should be able to interpret the data, and mathematically scrutinise the figures to provide me with the correct analytical findings. As an artist, how-
demarcated coastline, single handedly defeats the object of the artist trying to define Cornwall as ‘a landscape of water, where the land mass drops out as negative space, serving only to keep the streams apart’, and is a statement about accuracy and scientific proof that as an artist I have somehow been ignoring.

So here lies the frequent question that is always on my mind, the questioning of art versus science. Where do the two meet and how can you extract one from another? Should I even try?

The realization that allowing other minds into a project can not only expand it but also shift the consciousness to another level, is a powerful experience, but also one that could be questioned. A collaboration of minds is a wonderful thing, as is the gaining of knowledge and the learning process of sharing and enquiring, but when a project becomes another entity, another man’s mission, then it somehow loses integrity and the power to stand alone.

I believe the answer to this question comes in the form of acceptable limits. In asking for assistance, it is clear that as an instigator of a project, one can take or leave the participant’s outcome. It is about being selective.

In being selective, I decide that I will continue with my method of mapping Cornwall by its water, using the condensed water samples and the analysis that comes from testing them, hoping to find a new way forward. The accurate maps are ideal for reference purposes and while they inform the project to a greater level, they also cast a shadow over the integrity of the work.

After a further four whole seasons, and nearing the end of the water collection of all the rivers and streams that I can physically get to in Cornwall, it is decided that slowing down and considering new ways of analysis is going to be vital to the continuation of the project.

Having used the computer software to produce my analysis results from the XRF machine, and another piece of software to process that data, I can not dismiss the outcomes from the new DigiMap digital mapping system altogether. With this in mind, new approaches to computer software have transformed my project and have taken it to a new visual level.

Working with Ben Westagte, using a GIS (Geographical Information System) system to plot the data seems the natural pro-
My primary visual form so far has been the 3D flasks of condensed water and bottles of collected water representing the ‘water landscape’ of Cornwall. To see the 2D version appearing before my eyes is exciting for me.

Without the priority and accuracy of both the scientist and the artist the work can not stand up, it would loose its integrity; the one thing that is vital in this project. It would be pointless spending two years zig-zagging hundreds of miles over the length and breadth of Cornwall in all seasons and all weathers, to collect the valuable water samples, if the project was not based on integrity. There would be no point in spending hours in the lab reducing the samples and making the ‘essence’ of each river and processing it through the X-ray machine if it were not about integrity. How easy to cheat and fill the bottle from the tap! What kind of picture would this give us? A dull, bland manufactured impression not reflective of place, or time or the influences of nature. Just a product altered and manufactured by Man, for the consumption of Man.

The Outcome
The digital analysis, the computerized mapping, the digital logging and satellite placing systems are all now tools of my trade. I have been shown the way forward with my work, with the help of Ben, Dave and Claire from the different outside agencies. I have come to realize that the question of trying to separate art and science from the ever blurring boundaries is no longer an option for me, and that the two sit side by side in importance and relevance to my work. The answer to my question is, why should I even try?

ment and big business to find political and technological solutions, or are these institutions likely to exacerbate the problems we face? Is the situation so hopeless that we might as well tranquillise ourselves or indulge in nihilistic hedonism? Or can the arts catalyse a positive change? And if so, what sort of art and how can it transform our situation?

Our exploration of these issues has been shaped by the writings of Gregory Bateson. In his essay *The Roots of Ecological Crisis*, he argues that three causes are the basis of all threats to humanity’s survival: technological progress; population increase; and the prevailing values of western culture. He thinks all three are necessary conditions for the destruction of the world; a consequence, and source of optimism, is that even correcting one should result in our survival. Bateson identifies a number of dysfunctional features in Western thought which need to be corrected because “the world partly becomes – comes to be - how it is imagined”.

He worries that human consciousness has a “narrow purposive view” which tends to distort our perception of our relation with the environment; more specifically, humans tend to understand events in terms of a linear causality (A leads to B, and B leads to C), so A leads to C) and we have poor intuitions about the circular causality which constitutes any ecosystem (A leads to B, B leads to C, C leads to A, …). Furthermore, the development of “self-maximising entities…trusts, companies, political parties, unions, commercial and financial agencies, nations, and the like” can dehumanise and narrow our purposive view even further. Consequently, in the West, there is a prevalent sense that we are separate from and outside of a passive environment and “as you arrogate all mind to yourself, you will see the world around you as mindless and therefore not entitled to moral or ethical consideration. The environment will seem to be yours to exploit. Your survival unit will be you and your folks or conspecifics against the environment of other social units, other races and the brutes and the vegetables”.

Our ability to modify, exploit and potentially destroy our environment has increased with technological progress, which makes it imperative to correct our dysfunctional attitudes. Bateson believes this correction is possible through activities, such as the arts, where “more of the mind is active than mere consciousness would admit”. In particular, he thought that human survival requires a shift in our values from a transcendent to immanent perspective, a difficult task given that “so much of occidental thinking is shaped on the premise of transcendent deity that it is difficult for many people to rethink their theories in terms of immanence”.

Gilles Deleuze is well known for his immanent philosophy, a foundation stone of which is the view that matter has the capacity to generate novel forms independently of any external, transcendent agency. He illustrates the immanent perspective when he writes about blacksmiths working their materials, saying “it is not a question of imposing a form upon matter but of elaborating an increasingly rich and consistent material, the better to tap increasingly intense forces”.

De Landa, commenting on Deleuze, emphasises this point further, writing that “the blacksmith treats metals as active materials, pregnant with morphogenetic capabilities, and his role is that of teasing a form out of them, of guiding, through a series of processes (heating, annealing, quenching, hammering), the emergence of a form, a form in which the materials themselves have a say.”

From an immanent perspective, the relationship between the blacksmith and metal is conceived of as a collaboration or dialogue; from a transcendent perspective the blacksmith is viewed as imposing form on inert matter.

This contrast between transcendent and immanent perspectives on form generation provides a means of thinking critically about art, in particular the relation of artists to their materials and the processes they utilise to create form. Daro Montag’s *bioglyph* work exemplifies what we might call an ‘immanent aesthetic’: he attributes the creativity of his projects to both himself and the micro-organisms he collaborates with to generate images. His creative role is to place film in conditions where micro-organisms break down its emulsion and leave a trace of their activity: either burying film in moist soil or placing organic materials on its surface and allowing them to decompose (for example, cut fruit, yew arils (the fleshy covering around the seed), moss and grasses). Motivating his work is a desire to expand, rather than narrow, our perspective on the world: “this art makes visible the unseen...
For example, Richard Serra is not conventionally associated with environmental art, and yet his *Splashing*, 1969, results from a dialogue between him and molten lead. There is a clear sense that the material has had a say in this work, which is slight and contingent, and one of Serra’s least sculptural pieces. In later splash pieces, Serra uses gutters to catch and shape the pourings and there is a much more definite sense of imposing form. However, even these pieces seem less predetermined and sculptural than the rest of Serra’s work. Although in Serra’s other works materials influence the final form (for example, the way the steel rusts in *Snake*, 1996–7), a transcendent sculptural logic dominates, preventing the immanent aesthetic found in *Splashing*. Throughout Serra’s later work there is a sense that materials are treated as inert matter, waiting to be shaped by the artist.

What media are suitable for making new work that further develops an immanent aesthetic? How might work resulting from a transcendent aesthetic be reconfigured so that the immanent potential of materials and energy significantly influence the final form? The motivation for reconfiguring existing work is that it provides a foil for the new work and accentuates any differences. In the descriptions of the three works that follow the key difference is the adoption of an immanent aesthetic in the new work that contrasts to the transcendent aesthetic of the original work.

The starting point for *Solar Hedge, (Stacking)*, 2006, was Serra’s *Skullcracker*, 1969, a work constructed by stacking lengths of steel. Whereas in *Splashing* there is strong sense of a dialogic relationship between artist and material, the arrangement of materials in *Skullcracker* appears wholly reliant on human agency. Electrochemistry provided a medium with the potential for reconfiguring *Skullcracker* with an immanent aesthetic. When an electrical current passes between two electrodes submerged in copper sulphate, a
Hele-Shaw cell. The artist blows air into this solution resulting in the dispersal of the liquid and the temporary emergence of complex forms.

In summary, following Bateson, we assume artworks can effect a positive change in people's ecological values. Art has the potential to act as a corrective to the pathologically narrow perspective of human consciousness. Artworks can do this by providing a “unifying glimpse that makes us aware of the unity of things which is not consciousness”

Specifically, the unity of humans and the ecosystem. We have proposed that artworks embodying an immanent, rather than transcendent, aesthetic have the greatest potential to correct people's view of their relationship with the environment. Some outstanding questions remain to be explored, for example: is there some way to measure the effect of different aesthetics on human beliefs and values in order to test Bateson's conjecture?; are aesthetics always corrective or can they, too, be pathological (this was an unresolved worry of Bateson's). These and other important issues aside, categorizing artworks on the basis of whether they are generated by a transcendent or immanent aesthetic provides a means for assessing what constitutes an 'environmental' artwork in a new way. It identifies a whole range of arts practices that would not conventionally be categorized as 'eco' and yet have the potential to effect a positive change in the way people view their relationship with their environment. Our working assumption is that we can achieve a better living through electrochemistry (or viscous fingering or blowing bubbles).

1. Du Pont's original advertising slogan was "Better Things for Better Living…Through Chemistry"; their current one is "The Miracles of Science".
2. Political Economy Research Institute, largest corporations ranked by toxic score, 2002: http://www.peri.umass.edu/Toxic-100-Table.265.0.html
3. http://www.totse.com/community/forumdisplay.php?s=0c3ea3b43b05dab1f3a7e6590726d&f=153
4. Global Environment Outlook (Geo-4) (2007), United Nations Environment Programme, is a comprehensive report which "highlights the unprecedented environmental changes we face today and which we have to address together. These changes include climate change, land degradation, col-
Andy Webster & Jon Bird

Better Living Through Electrochemistry?

lapse of fisheries, biodiversity loss, and emergence of diseases and pests, among others” (viii).
8. Ibid, p.452.
14. Montag’s PhD was entitled: “Bioglyphs: Generating images in collaboration with nature’s events”
16. Ibid.
17. In his more permanent works (walls, folds, houses) Goldsworthy’s focus is on the impact of human activity on landscape and he adopts what we would describe as a ‘transcendent aesthetic’.
22. The original intention was to blow into the solution following the phrasing of Charlie Parker’s Moose the Mooche. Unfortunately, this left Webster extremely light headed. However, there is still a residual connection with Parker as the scientific term to describe the patterns formed in the glycerine is ‘viscous fingering’, which seems an apt description of his playing style.
How can we imagine a new relationship with the natural world? My art practice has developed over the years to address this same question, from many different angles. What is unusual about my research project commissioned by RANE is the level of involvement in the subject. I have become the subject matter, using my own body to experience alternative perspectives and noting the changes that I experience – subjective, deliberately limited to my own human experience and given validity because of this.

I put myself into situations where my very sustenance depended on direct contact with the natural world. To subsist without the aid of most technologies and tools now commonplace in contemporary Western civilisation and to get to know a place as an integral part of that ecology, not as a visitor. Living, surviving in one place, sensing and interacting with other animals and plants around me and forming a new understanding of their place in my life, and conversely my place in theirs. Seeing the woods for the trees.

I spent time building a skill base that equipped me to decipher
the language of the land. Some of these skills are almost instinctual, lying just beneath the surface, others require dedicated practice to achieve. To take a single example: the process of learning to make a fire using friction. It requires a series of physical movements, all in precise timing with one another. If one of these actions is given less importance, the fire will not be born. Once learned, this procedure becomes stored in the muscles as action memory. A knowledge of the plant species, its preferred habitat, seeding and growing cycles and seasonal availability, all form part of knowing how to make fire.

“To be sure, our obliviousness to nonhuman nature is today held in place by ways of speaking that simply deny intelligence to other species and to nature in general, as well as by the very structures of our civilized existence.” David Abram, Spell of the Sensuous: Perception and Language in a More-Than-Human World (Vintage, 1997)

Sitting. I began sitting for long durations. All day, in one place without moving or speaking. It enables the whole cycle of daily and nightly events to unfold and has become an important part of my practice. An example of this is the 24-hour sit that I did as part of my research on the longest day. I sat on a rocky outcrop overlooking the Bovey Valley in Dartmoor National Park. The steep rocky valley slopes are densely wooded with oak, birch and hazel, with some willow growing close to the river that runs through the valley, eventually to join the River Teign.

When I sit, I pick up on the relative quietness and listen to the birds and other animals present to give me clues as to where their territories are. The longer you sit and the quieter you become, the more you realise is happening. A baseline of sounds is established. I do not consciously try to meditate, but there are many similarities to the process. I am aiming at being still, in a physical sense and mentally. There have been well-documented biofeedback brainwave tests concluding that humans spend most of their time in a state characterised by loud communication, eye contact and focused awareness of one’s own body. Wild animals only exist in this state when they are breeding or fighting and it acts as a signal of alarm to almost every other creature. Meditation puts the brain into another state, a more calm and less fluctuating brainwave pattern. It is this state that wild animals spend most of their time in. They are aware and quiet, going about their everyday business of just being and in order to not disturb this state we must also be calm and quiet.

When starved of any other human voice, we, the compulsive communicators, seem to take more readily of another language and I was in proximity with other creatures that were all constantly communicating with each other. Within a very short number of sessions I realised that I was listening to various birdcalls and had become familiar with each one. Birdsong ceased to become the backdrop that accompanies wooded places and began carrying significance for me. Robins, for instance, will use two very different calls to raise the alarm. A short, sharp-sounding tick is used to indicate the presence of a predator on the ground, whilst a long, descending, high pitch announces warning of an avian predator. I tracked the progress of a fox across the valley before me, simply by hearing the concentric waves of primary and secondary disturbance from birdsong.

During my sessions I had certain close encounters with creatures (or at least they encountered me) and each one of their meetings becomes highlighted in a way that is out of the ordinary. For instance, a raven came to the rock on which I was sitting, landing breathtakingly close to me, as if to investigate whether this unmoving human was indeed alive. For a split second we made eye contact. I have begun an inner process of renaming places in response to the events and memories built up there.

Foraging enables yet another relationship to a place, where a certain dependence is formed upon materials or food. This dependence encourages a sense of being humble and seeking what one needs. There is also a sensation of wanting to give thanks. It highlights the massive difference between need and want. Edible species I discovered in the Bovey Valley included hedge garlic, nettle, burdock, jews ear fungus, thistle, wood sorrel, to name but a few. The reality of foraging and finding food and water is hard. I have learned in a very real way that to be dependent on a place for all your needs uses every bit as much
energy as it gives. In fact, it uses more.

“The significant problems we face cannot be solved at the same level of thinking we were at when we created them.” Albert Einstein (1879-1955)

My research was set in the context of the environmental crisis that we now face. During the project I navigated an entirely new personal relationship to the natural world and our food sources, as well as the habits and rituals we adhere to on an everyday basis. We are the environment we seek to find, we eat it, drink it and constantly process it through our bodies. The very breath that I use to form these words is shared by every living thing on earth. The only element not directly connected to the constant omnipresent ebb and flow of the natural world is our self-obsessed, human-centric, scientific-ruled consciousness. Having experienced so much I cannot go back to my previously ignorant way of living. My art practice is now adapting to incorporate ways of sharing and disseminating this new, but ancient, notion.

“I do not want to change the world, I just want to live in it.” Robert Rauschenberg

The Artful Green Sink is a project driven by a guilty conscience, conceived by one delegate opting to travel to the conference on an aeroplane. The decision to take an inland flight was governed by two factors – personal financial cost and time. It was the cheapest and most time-efficient way to travel to Falmouth. But what was the environmental cost?

In collaboration with RANE, facilitating an interactive initiative to offset CO₂ on-line, The Artful Green Sink would enable the environmental cost of a conference to be calculated (in terms of CO₂ emitted into the atmosphere by those travelling to attend).

Green Sink is a term used to describe areas of vegetation, usually trees, set aside and managed with the intent to ‘harvest’ CO₂ from the atmosphere. Carbon sequestration is the name given to the removal CO₂ from the atmosphere. An additional aim was to generate debate around the issue of climate change.

• Are we aware of how much CO₂ pollution we create when travelling?
The Kyoto Protocol (signed by 150 nations in 1997) seeks to reduce worldwide emissions of CO$_2$ to 5% below 1990 levels by the year 2012. The target set for and agreed by the British government in 1997 was 12.5% below emissions of 1990. During 2003-2004, the UK’s emissions of CO$_2$ rose by 1.5% and, according to government figures released in September 2005, rose a further 2.5% in 2004-2005.

Offset the carbon cost of an ecological art conference?

105 people travelling to discuss art and ecology at a conference unfortunately has a carbon footprint, a cost to the environment. Assuming that climate change would be a primary concern for many delegates and speakers, and working upon the assumption that many would be travelling some distance to attend the conference, The Artful Green Sink presented a means to calculate CO$_2$ emissions and offset personal CO$_2$ travel costs.

There are many ways to offset CO$_2$ using the Internet. For The Artful Green Sink it was important to select a website that promoted ethical Green Sink carbon sequestration. www.co2balance.com was chosen for a number of reasons:
- It is a UK-based organisation
- It calculates CO$_2$ emissions online
- It offsets by planting broad-leaved native trees, along with lower-growing native species to improve the nature conservation value of the woodland
- The woodland created is in addition to existing woodland

Carbon dioxide (CO$_2$) & climate change

If climate change continues as some mathematicians and scientists have indicated using computer future forecast methods, there may not be much ecology left to be artful about.

CO$_2$ is one of the six greenhouse gases. The gases – carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride – act as global insulators, they absorb ultraviolet and infrared solar radiation from the sun, and retain some of the planet’s heat, thus making our planet habitable.

Increased amounts of greenhouse gases in the atmosphere are having an impact on global climates. Increasing, the thickness of this insulating blanket means that heat reflected from the earth’s surface is trapped in the atmosphere. Trapping heat increases global temperatures. Ice caps and glaciers are beginning to melt and retreat, turning from white, heat-reflecting surfaces to dark, heat-absorbing surfaces. A cyclical event is being triggered. Some scientists argue that there is a tipping point, which, when reached, will mean that life on earth as we know it simply no longer exist. If the tipping point is reached, climate change will be irreversible and uncontrollable.

Should we take a greater responsibility for our actions and the role we play in increasing greenhouse gases?

Are Green Sinks a justifiable means of carbon sequestration?

Many climatologists and ecological scientists believe that climate change is happening – that it is a given – and poses one of the greatest and most challenging threats to the environment.

In his paper Big Issues and Small Responses, August 2004, Dr Gray Littlejohn begins: “Three major processes are going to affect all our futures over the next 15-20 years:
- The beginning of the end of the modern ‘nation state’
- Global warming [climate change]
- Peak oil

The first is primarily a social process, while the second two concern the interaction of natural and social processes. All three will have negative impacts on future possibilities of sustainable development…”

Many climatologists and ecological scientists believe that climate change is happening – that it is a given – and poses one of the greatest and most challenging threats to the environment.

In his paper Big Issues and Small Responses, August 2004, Dr Gray Littlejohn begins: “Three major processes are going to affect all our futures over the next 15-20 years:
- The beginning of the end of the modern ‘nation state’
- Global warming [climate change]
- Peak oil

The first is primarily a social process, while the second two concern the interaction of natural and social processes. All three will have negative impacts on future possibilities of sustainable development…”

Carbon dioxide (CO$_2$) & climate change

If climate change continues as some mathematicians and scientists have indicated using computer future forecast methods, there may not be much ecology left to be artful about.

CO$_2$ is one of the six greenhouse gases. The gases – carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride – act as global insulators, they absorb ultraviolet and infrared solar radiation from the sun, and retain some of the planet’s heat, thus making our planet habitable.

Increased amounts of greenhouse gases in the atmosphere are having an impact on global climates. Increasing, the thickness of this insulating blanket means that heat reflected from the earth’s surface is trapped in the atmosphere. Trapping heat increases global temperatures. Ice caps and glaciers are beginning to melt and retreat, turning from white, heat-reflecting surfaces to dark, heat-absorbing surfaces. A cyclical event is being triggered. Some scientists argue that there is a tipping point, which, when reached, will mean that life on earth as we know it simply no longer exist. If the tipping point is reached, climate change will be irreversible and uncontrollable.

Should we take a greater responsibility for our actions and the role we play in increasing greenhouse gases?

Are Green Sinks a justifiable means of carbon sequestration?

Many climatologists and ecological scientists believe that climate change is happening – that it is a given – and poses one of the greatest and most challenging threats to the environment.

In his paper Big Issues and Small Responses, August 2004, Dr Gray Littlejohn begins: “Three major processes are going to affect all our futures over the next 15-20 years:
- The beginning of the end of the modern ‘nation state’
- Global warming [climate change]
- Peak oil

The first is primarily a social process, while the second two concern the interaction of natural and social processes. All three will have negative impacts on future possibilities of sustainable development…”

Carbon dioxide (CO$_2$) & climate change

If climate change continues as some mathematicians and scientists have indicated using computer future forecast methods, there may not be much ecology left to be artful about.

CO$_2$ is one of the six greenhouse gases. The gases – carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride – act as global insulators, they absorb ultraviolet and infrared solar radiation from the sun, and retain some of the planet’s heat, thus making our planet habitable.

Increased amounts of greenhouse gases in the atmosphere are having an impact on global climates. Increasing, the thickness of this insulating blanket means that heat reflected from the earth’s surface is trapped in the atmosphere. Trapping heat increases global temperatures. Ice caps and glaciers are beginning to melt and retreat, turning from white, heat-reflecting surfaces to dark, heat-absorbing surfaces. A cyclical event is being triggered. Some scientists argue that there is a tipping point, which, when reached, will mean that life on earth as we know it simply no longer exist. If the tipping point is reached, climate change will be irreversible and uncontrollable.
• It does not draw upon the finite government funds assigned for forestry but are funded through offset donations
• Trees purchased at the time of the conference were planted reasonably locally, in Bishops Wood, Devon
• The land for Bishops Wood was acquired in 2004, during which time afforestation has turned the land from pasture to 65% woodland and, in doing so, biodiversity has increased

www.nef.org.uk was also used as an online CO₂ calculator.

Carbon sequestration & Green Sinks
Plants naturally remove carbon dioxide from the air; this process is photosynthesis:

• CO₂ + H₂O + E = CH₂O + O₂
  (carbon dioxide + water + energy (from [sun] light) = carbohydrate + oxygen)

Excess carbon is stored in the plant fibre. This is why fossil fuel emits CO₂. When we burn, for example, coal and oil, the CO₂ stored is released back into the atmosphere. Through burning fossil fuels we are releasing excess amounts of CO₂ into the atmosphere. By planting trees, it is argued that the CO₂ we are responsible for releasing can be removed – absorbed via photosynthesis.

Green Sink debate
Green Sinks are not, as yet, accepted within the Kyoto Protocol as viable action to reduce carbon emissions. There are inherent problems with this method of carbon sequestration and professional opinions are divided. Until the argued issues are resolved, countries cannot bring terrestrial vegetation sequestration into the equation when calculating their target reduction of CO₂ emissions.

It is argued that Green Sinks have inherent problems. The issue of land ownership, deforestation and reforestation with inappropriate species is of major concern. There is a real danger that developed countries will purchase land in developing coun-

tries, remove indigenous tree species – harvesting and selling the crop – and then use grant aid for reforestation with fast-growing non-native species that could have a negative impact upon indigenous ecosystems.

If the developed countries start buying land from less developed countries, issues of sovereignty come into question. Could we be seeing a new form of colonialism? An implication of this is that less-developed countries will be paying for the carbon debt of the developed countries, at the cost of their development. There will be countries dedicated to sequestration, while other countries will be ‘allowed’ to continue to burn fossil fuels at the current rate (available resources permitting).

In relation to the debate surrounding Green Sinks, delegates and speakers were encouraged to write their comments;

The opinions varied:
• “…Carbon sinks are proven to be more ecologically destructive market based ‘solutions’… see this month’s issue of “New Internationalist” entitled CO₂ned.”
• “I am anxious that carbon offsetting simply confirms consumption behaviour whilst assuaging guilt. If this is a means to an end and not an end in itself bring on the next step…”
• “Planting trees to assuage our guilt is one more techno-fix for
Unfortunately, for whatever reasons, only 66.6% participated in The Artful Green Sink. As such, it is impossible to calculate the CO\textsubscript{2} cost of the conference. It is only possible to offer an estimate based on the data collected and this is also an estimated cost. The mileage information cannot be assumed as being accurate, merely the best possible estimate as calculated from the resources available during the conference.

14 flights were recorded (13.5% of the 105 attending). If we assume that all air travel was recorded, it could be considered reasonable to estimate that 80% of conference participants travelled by other means, either by car, public transport or carbon neutral.

Using the data as recorded above this equates to:

<table>
<thead>
<tr>
<th>Car &amp; Public Transport</th>
<th>CO\textsubscript{2} in kgs for air and land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delegates Participating TRAIN</td>
<td>3101.00</td>
</tr>
<tr>
<td>Delegates Participating CAR</td>
<td>5809.00</td>
</tr>
<tr>
<td>Delegates Participating by AIR + LAND</td>
<td>1652.00</td>
</tr>
<tr>
<td>Conference Speakers by AIR + LAND</td>
<td>540.00</td>
</tr>
<tr>
<td>Delegates leaving written details TRAIN</td>
<td>820.00</td>
</tr>
<tr>
<td>Delegates leaving written details CAR</td>
<td>3629.80</td>
</tr>
<tr>
<td><strong>TOTAL in kg</strong></td>
<td><strong>13,841.47</strong></td>
</tr>
</tbody>
</table>

co2balance.com appears to calculate that one tree is required to offset every metric tonne of CO\textsubscript{2} produced. Because it is not possible to buy a part of a tree, 14 trees need to be planted to absorb or mitigate the CO\textsubscript{2} cost of the conference. If each delegate were to off-set their own CO\textsubscript{2} cost, the number of trees would be significantly greater, at 109 trees.

In conclusion

Artful Ecologies indirectly contributed to an increase of CO\textsubscript{2} pollution by an estimated 13,841.47 kgs. The Artful Green Sink has illustrated that this amount could have been less. CO\textsubscript{2} emissions could have been reduced if a mechanism was in place to enable delegates to coordinate travel plans and vehicle-sharing. This is most poignantly demonstrated in the case of the Manchester delegates.

If the delegates had made their way to Manchester as outlined and travelled together in one car, carbon dioxide emissions would have been reduced by over one third of a tonne.

Interestingly those registering travel to Falmouth by air...
recognised that they were polluters, whereas those travelling by car were generally shocked to discover that a person travelling alone in a car was responsible for more CO₂ than a person travelling the same distance by aeroplane.

To help reduce the CO₂ created through travelling by car to a conference, organisers could provide a mechanism to enable vehicle-sharing. This was commented upon on the *The Artful Green Sink* image.

Planting trees as a method of carbon sequestration might mitigate the problem but it does not solve it. The issues surrounding Green Sinks also makes sequestration through such schemes difficult to implement within a conference setting – there appear to be too many questions, too much distrust and too much uncertainty for delegates to commit to CO₂ offsets.

*The Artful Green Sink* demonstrated reluctance among delegates to off-set their CO₂; and only four people donated to tree-planting schemes – two online and two through donations to a local land owner. RANE has promised to offset the speaker’s CO₂ costs and 14 delegates pledged to plant a tree, but what of the additional CO₂ in the atmosphere created by the delegates?

If conference organisers want to reduce the CO₂ costs of their conference through carbon sequestration, they are best advised to build the cost of offsetting into the conference fee and offset the costs on behalf of all those attending. This way they can be sure that measures are taken to help absorb the CO₂ their conference is indirectly responsible for.

Each one of us can make adjustments in our lifestyles and/or offset our CO₂, with the aim to help to reduce CO₂ emissions. The question is, will we?

### Appendix of comments written on *The Artful Green Sink* image and documentation:

- John Grande – flew to London from Trudeau Airport Montreal, then train Gatwick to Truro, same vice versa – planted 120 trees in Laurentians north of Montreal… nature is art
- I will make plans to plant a tree, maybe seed a Monterey Pine as it will survive where I live, near the north coast

<table>
<thead>
<tr>
<th>Delegate 1</th>
<th>TRANSPORT</th>
<th>LAND MILES</th>
<th>CO₂ IN kgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeroplane</td>
<td></td>
<td>1 12.50kg</td>
<td></td>
</tr>
<tr>
<td>Car</td>
<td></td>
<td>96 35.00kg</td>
<td></td>
</tr>
<tr>
<td>Public transport – bus/train</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delegate 2</th>
<th>TRANSPORT</th>
<th>LAND MILES</th>
<th>CO₂ IN kgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeroplane</td>
<td></td>
<td>112.50kg</td>
<td></td>
</tr>
<tr>
<td>Car</td>
<td></td>
<td>184 19.00kg</td>
<td></td>
</tr>
<tr>
<td>Public transport – bus/train</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delegate 3</th>
<th>TRANSPORT</th>
<th>LAND MILES</th>
<th>CO₂ IN kgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeroplane</td>
<td></td>
<td>1 12.50kg</td>
<td></td>
</tr>
<tr>
<td>Car</td>
<td></td>
<td>72 26.00kg</td>
<td></td>
</tr>
<tr>
<td>Public transport – bus/train</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delegate 4</th>
<th>TRANSPORT</th>
<th>LAND MILES</th>
<th>CO₂ IN kgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeroplane</td>
<td></td>
<td>680 245.00kg</td>
<td></td>
</tr>
<tr>
<td>Car</td>
<td></td>
<td>36 4.00kg</td>
<td></td>
</tr>
<tr>
<td>Public transport – bus/train</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• I will plant two trees in Cornwall
• Reiko and Tim will pay the earth one tree in the depths of the Black Country!!!!
• Happy to offset, but should not, of course, be travelling by car. I will offset in Devon, but note that one of the main issues with offset is resolving the guilt associated with travelling. It still means that the carbon has been emitted
• Happy to offset it with Paul Chaney – recognise all is compromise but it’s a help.
• I had additional mileage, as I could not find a B&B in Falmouth that could accommodate myself and a baby under 12 months…
• Travelled by car because it’s easier than public transport! Will donate money to Paul Chaney to plant a tree on his land
• Travel from North Yorks. I regularly plant trees on my land. I am creating a series of copses
• Will plant tree locally – many hedge bank trees lost in east Cornwall over last 12 years or so
• Had to go home at lunchtime to walk my dog. Could I bring him with me for the sake of the environmental issues?
• Wanted to travel by train, but ended up camping, because of the cost of B&B and brought all the gear in a car. Would have liked to car share, but didn’t contact the organisers to sort it out. Pathetic intentions, not shifted to action
• Will both be planting out veg and fruit trees this weekend
• Walked, but would have offset if I had to elsewhere for a similar conference
• I think that the principle of taking some kind of responsibility for our harmful action with another hopefully positive action is in principle positive. It is a new approach and shows that people have guilt…
• Planting trees to assuage our guilt is one more techno-fix for the System…
• I plant and maintain a copse, so will plant an extra
• I grow trees from locally collected seeds. People can plant a tree or get me to plant one for them on my farm outside Falmouth
• Plant 1 tree at home

Kerry Morrison is an ecological artist and PhD research student at Newcastle University