

## Chapter 3.

### Mapping genealogies - searching nomadism.

I speculate. Mapmakers are entitled to do so, since they readily acknowledge that they are rarely in possession of all the facts. They are always dealing with secondary accounts, the tag ends of impressions. Theirs is an uncertain science. What they do is imagine coastlines, bluffs and estuaries in order to make up for what they do not know.... They do not know these things because they are constantly dealing with other men's observations, no more than a glance shoreward from the rigging of a passing ship. I try to put myself in their position sometimes. Gazing into the distance evokes a kind of frozen wonder, as if space were indeed unlimited.<sup>1</sup>

James Cowan, 1997. *A Mapmaker's Dream. The Meditations of Fra Mauro, Cartographer to the Court of Venice.*

How do we extend our vision into the natural world. How do we experience and interpret nature in human terms? How might we experience cosmic space through an understanding of space and time? In what ways is this space mapped and understood through art and science? In this chapter I discuss these questions together with the motivations and the theoretical and practical interests that have stimulated this research. I revisit the layers and linkages that have developed over time that have led me to this place, and introduce the reader to the artistic underpinnings that have influenced my work. These include an interest in certain aspects of post-minimal practice and abstraction as well as historical tropes, (particularly the Baroque aesthetic). They also involve an interest in ways of seeing and the manipulation of light and space within various practices and technologies. Mapping is discussed in terms of the way it acts as a surrogate for different models of space. In order to give the reader some clues that make sense of the way in which the current work has unfolded, I have included discussion of some of my earlier work which in various ways seems relevant.

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<sup>1</sup> James Cowan, *A Mapmaker's Dream*, p. 11.

## Reflections – a mirage of sense and perception.

I have sailed at night on the ocean where the curve of sea and sky merge in seemingly infinite depth. The sea's surface mirrors the endless expanse of cloud seen in flight beneath the upper atmosphere. This is a liminal space, in view of the coastline yet engulfed by ocean, between here and there, between sky and sea. It is a place of challenge and re-orientation. Caught up in graticule, in an electronic web, pulses and lines of light, it is an ephemeral space, attached through the Global Positioning System like an umbilical cord to a satellite orbiting somewhere 'out there' in deep space. Our existence is mapped in these webs of connections, out there, back here and in between. This vast and complex space between here and there, witnessed at sea level or high in the mountains, imparts a sense of something that seems timeless and deeply connected, chaotic and ordered, material and immaterial. Such was my experience in the Himalaya, (quoted here from my journal), where the significant elevation presented an unusually intense encounter with the night sky:

My view is through an expanse of window into the broad sweep of the night sky. It is a mirage of sense and perception. Stars descend to the horizon. They are of such intensity that even the hazy midnight glow of the chaotic city hovering in the valley below doesn't diminish them. Dominating this dark and strangely replete void is the Constellation of Orion. Here, in the thinning atmosphere, more stars are visible than I have seen by naked eye before. We are closer to the heavens. A distant jet banks to land, mistaken at first for a brilliant coloured star.

Benchen Phuntshok Dargyeling Monastery, Kathmandu, Nepal, 2005.<sup>2</sup>

Science tells us that the evidence of what is 'out there' is in us. Ultimately we come from the stars. Formed over billions of years from the explosion of super novae, their emissions dispersing biological elements through space to create living complexity. The astronomer Martin Rees seeks, through art, to evoke the fundamental biological character of everything and our place within it.

In *Just Six Numbers*, describing the nature of our universe, Rees quotes John Steinbeck from *The Log From The Sea of Cortez*:

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<sup>2</sup> Felicity Spear, *Excerpt from Nepal Journal*, 7/11/2005, np.

[m]an is ...related inextricably to all reality, known and knowable...plankton, a shimmering phosphorescence on the sea, and the spinning planets in an expanding universe, all bound together by the elastic string of time. It is advisable to look from the tide pool to the stars and then back to the tide pool again.<sup>3</sup>

My time is spent in the country under a silent, dark starred sky away from the blur and glow of the city. Like being on the ocean it is an intense engagement with the senses. De Quincey, speaking over a century ago of the unfolding nature of light and its relationship to the dark, has written:

[i]t is true that light in its final plenitude, is calculated to disperse all darkness. But this effect belongs to its consummation. In its earlier and struggling states, light but does reveal darkness. It makes the darkness palpable and visible.<sup>4</sup>

We all share the night sky. However, the view is different for those who live in densely populated parts of the earth. For them the focus on this space has shifted. At night when the earth is observed from outer space the images transmitted back reveal a veil of up-light. The view is marred by a cataract of blurring that deprives us of an intense engagement with the night sky. The 'before and after' satellite image of the failure of the power grid in the U.S.A. in 2003, *Northeastern USA taken August 13, 2003 at 9:21 p.m. EDT and August 14, 2003, at 9:03 p.m. EDT* (see fig. 35), is a potent reminder of humanity's light pollution, reflecting the demands and anxieties of the metropolis.

Kevin Murray observes in his essay *The Institute of Light* that:

with the aid of new physics light is shown to be a substance just like any other – a collection of photon energies .. bring[ing] light into the

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<sup>3</sup> As quoted, Martin Rees in *Just Six Numbers*, p.1. It is also interesting to note that in the Symposium and Workshop on Space and the Arts – 'Space: Planetary Consciousness and the Arts', conducted by Ars Astronautica, it was suggested that, '[s]pace technologies have catalyzed a radical expansion of our species' abilities to communicate, exchange and access information and this is having an exponential impact on its collective knowledge base. Looking outward, space science has discovered that the essential ingredients of life, as well as places that are potentially suitable for its development, are very widely distributed throughout the cosmos. As such, we are coming to the realization that earth – and all life that inhabits it – is part of a much larger cosmic environment and that life here is subject to changes and fluctuations that may occur many light years away.'  
[www.arsastronautica.com/texts/workshop2005.php](http://www.arsastronautica.com/texts/workshop2005.php) p.1, [accessed 31/05/05].

<sup>4</sup> Thomas De Quincey, *Works*, 16 vols, (Edinburgh: Adam and Charles Black, 1863 ), vol 7, 165, in *Transition –The Right to Form, 16/62 2000*, ed. Peter King, (Melbourne: R.M.I.T. Publishing, 2000), p. 7.

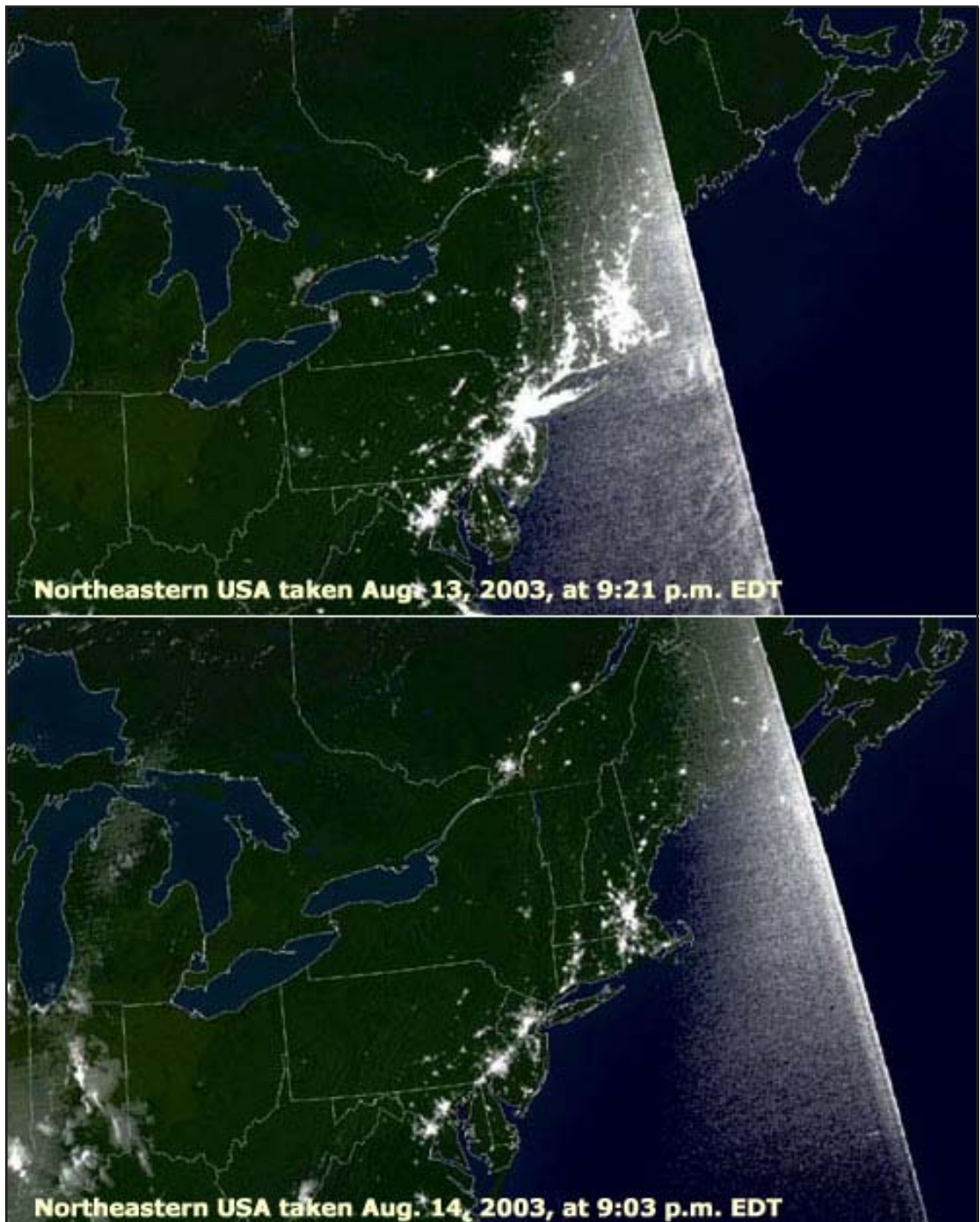


Fig. 35 *Northeastern USA taken August 13, 2003 at 9:21 p.m. EDT and August 14, 2003, at 9:03 p.m. EDT.*

information age, where medium is irrelevant as long as it carries the right message...The end is 'communication.'<sup>5</sup>

Artists who are inspired by scientific interpretations of nature are inevitably confronted with ecological concerns. The interaction between art, nature and technology serves to heighten awareness of the apparent contradictions within the rapid scientific and technological development that has reconfigured 'nature' for our purposes. In an age that is replete with both new and old technologies there is an ambivalence towards the appreciation and conservation of the natural environment. In 1993 in the exhibition *Luminaries* at Monash University, Paula Dawson's holographic maquette titled *You are Here*, investigated the representation of nature in contemporary culture. Natalie King describes the work:

[i]n the maquette, one hologram represents sea levels between two headlands, depicting the change in levels over the past 2.5 million years, while the other is the actual word 'sea level.' A fictitious room containing furniture whose placement corresponds with planets in the solar system accompanies the holograms. Through simulated lunar illumination that will be fully realized at the actual holograph site, the landscape is illuminated by the concrete and the imaginary, ...moderated by light sources as a cultural signifier, an environmental domain and an historical metaphor.<sup>6</sup>

The use of technologies associated with light reminds us of the implications of the overuse of light and energy in the world today. It also draws attention to the potential for interactions between art, science and technology that might heighten our perceptions and understandings of the night sky.

Ironically, because this space is almost completely incomprehensible to our senses our access to it is through a machine based visibility, the manipulation of light in technology. Light is harnessed by modern telescopes acting as 'virtual eyes', which enable us to experience this space through remote sensing and digital technologies. Telescopes are now attached to satellites or situated in remote and elevated places away from the glare of civilization. This complex and surrogate way of seeing is remote from the immediacy of sense experience. However, increasingly it enables us to extend our vision, probing deeper and deeper into a mathematically theorized

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<sup>5</sup> Kevin Murray, 'The Institute Of Light', in *Luminaries*, (Melbourne: Monash University Gallery, 1993), p. 7.

<sup>6</sup> Natalie King, 'Part Two: A Contemporary Perspective', in exh. cat. *Luminaries*, eds. Zara Stanhope, Jenepher Duncan, (Melbourne: Monash University Gallery, 1993), p. 26-7.

but otherwise mysterious and unknown space. Levinson makes the point that:

[o]ne benefit of naked in contrast to telescopic vision is that things we observe with our unmediated eyes may be touched, sifted, sniffed – that is, examined by other immediate modes of human perception. In the absence of such collaborative faculties, we are prone to make assumptions about what we see via telescope far away ... The point is , until we can actually approach the questionable object directly with multiple modes of perception, our best explanations and identifications are hypothetical conjectures. <sup>7</sup>

### **The labyrinth of curiosity and desire.**

Almost two centuries ago the German Romantic landscape artist Caspar David Friedrich painted *Wanderer Above the Mist* 1817-18. <sup>8</sup> The foreground of this work is dominated by a man standing alone on a promontory, his back towards us, and his gaze, one imagines, directed towards a far horizon. A singular, dark, abstracted form against a pale and ephemeral sea of delicate veils, mist and cloud from which loom distant mountain peaks. It is a mysterious and ethereal evocation of nature that has an unsettling sense of yearning or searching. A subliminal awe and fear of the natural world lure the wanderer into the distance, into a labyrinthine space of curiosity and desire; something conceived but not yet seen. This image asks questions and implies contradictions. Here is an earthbound and solitary figure in a floating and ambiguous landscape. It is a place of mystery and desire, of containment and excess, where time and space push and pull under the strain of human aspirations. It mirrors the Kantian inheritance: rational thought in contest with the senses. The sublime continues to exert an imaginative hold on us, to move us emotionally. However, now it is difficult to experience nature except through the mediations of science, that increasingly demystify and enculturate natural phenomena.

The installations of the Danish artist Olafur Eliasson are about the phenomena of nature as we have come to understand them through natural science. His interests lie in the exploration of experience, mediation and

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<sup>7</sup> Levinson, *Real Space*, p. 75-76.

<sup>8</sup> Caspar David Friedrich, *Wanderer Above The Mist*, c. 1817-18, oil on canvas, 74.8 by 94.8 cm., Kunsthalle, Hamburg, West Germany, in William Fleming, *Art and Ideas* (United States: Holt Rinehart Winston, 8<sup>th</sup> ed., 1991), p. 486, or at [www.ibiblio.org/wm/paint/auth/friedrich/friedrich.wanderer-sea-fog.jpg](http://www.ibiblio.org/wm/paint/auth/friedrich/friedrich.wanderer-sea-fog.jpg)

representation. Taking nature rather than science as his point of departure, he appropriates and reflects the findings of natural science and transforms them into artistic and sensual experience. In an effort to signal nature as artificially mediated and constructed he creates the conditions for the heightened awareness of bodily experience. He has worked with tropes of the Northern European Romantic tradition that also reflect light, including rainbows, waterfalls and sunsets.

In 2003, I visited Eliasson's *The Weather Project*, (see figs. 36,37) at the Tate Modern in London. On entering the dark chasm of the monumental space of the Turbine Hall I was immediately enveloped in a fine mist imbued with a glowing yellow light that filled the space. These were representations of the sun and sky that drew attention to the fundamental act of perceiving the world around us, as well as the fact that like the weather, they are always in a state of flux. At the far end of the Hall, high on the wall, was a semi-circle form made up of hundreds of mono-frequency lamps, (the structure and apparatus being visible from below). The arc was repeated in the ceiling which was covered in a mirrored surface. It produced a sphere of dazzling radiance linking the real space with the reflection. Whether standing on the lower floor or on the connecting bridge, I saw myself and others like tiny ants mirrored in the ceiling. The whole space was mapped in light and reflection of which I was a part, giving one a sense of the mutability of space and the senses. The intention was to heighten awareness of our lack of control over nature, and to make the viewers conscious of the act of seeing themselves interacting with a mediated 'nature.' (At another level it was simply a stimulating experience for the senses that also caused me to question the presentation of art and the structures that support it).

Eliasson evokes the possibility of the sublime. However, he also demystifies it through creating empirical evidence. He presents such phenomena as fabrications of nature which are part of the social and human world. In this way he heightens our awareness of nature and our perceptions of it in an artistically experiential space. This does not mean that representation and mediation are not occurring in the viewer. Rather, by exposing the representational layer in the work, which reduces the danger of manipulation, the viewers are made conscious of the conditions of seeing and what is



Fig. 36 Olafur Eliasson, *The Weather Project*, 2003, (detail), lights, mirrors, dimensions variable, Tate Modern. London.





Fig. 37 Olafur Eliasson, *The Weather Project* 2003, (detail), lights, mirrors, dimensions variable, Tate Modern, London.

involved in the act of seeing. Madaleine Grynsztejn suggests that Eliasson makes the viewers aware of their interactions in space through exposing the material structural components and devices. These create the atmospheric phenomena that the viewer experiences. She notes that in this way:

Eliasson deliberately interrupts any sense of an unmediated relationship to or transcendental contemplation of 'nature' that would ally his work with the Northern Romantic tradition. At the same time, at the level of affect, his works audaciously and paradoxically carry for us an emotional charge both transcendent and actual...[he] generates a special attention that is at once and paradoxically phenomenological and transcendent...Neither object or subject is permitted to return to some hypothetical pure or 'original' root condition; on the contrary, nature, culture and self are presented in all their material impurity, contingency and intense presentness.<sup>9</sup>

Today the horizon has expanded exponentially. The idea of 'nature' is increasingly filtered and mediated through 'culture,' its technologies, and the construct of science. Henri Lefebvre describes nature as having become:

a negative utopia: nature is now seen as merely the raw material out of which the productive forces of a variety of social systems have forged their particular spaces. True, nature is resistant, and infinite in its depth, but it has been defeated, and now waits only for its ultimate voidance and destruction.<sup>10</sup>

Martin Heidegger warned that, 'the destiny of Modern people [will be] to capture Nature as resource – to render the world-as-picture – [to] valorize the technologies that enhance vision.'<sup>11</sup> The uneasy space of curiosity and desire remains. Now as the astronomer John D. Barrow observes, '[w]e feel like the Universe's only child, and that has many consequences.'<sup>12</sup>

Daniel Goods, an advanced concept architect who has conducted research at NASA's Jet Propulsion Laboratory, investigates this sense of isolation in relationship to the search for new planets. He creates installations that assist people to question their relationship to the universe intuitively. For his current project *Star Field*, he interviewed an eclectic range of people of

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<sup>9</sup> Madeleine Grynsztejn, 'Survey –Attention Universe:The Work of Olafur Eliasson' in *Olafur Eliasson*, (London: Phaidon, 2002), p. 49.

<sup>10</sup> Henri Lefebvre, *The Production of Space*, Trans. Donald Nicholson-Smith, (U.S.A., U.K., Australia: Blackwell Publishing, 1991), p. 31.

<sup>11</sup> Pickles, quoting Heidegger in *A History of Spaces*, p. 81.

<sup>12</sup> John D. Barrow, *The Artful Universe*, (Oxford: Clarendon Press, 1995), p. 44.

different ages, genders and ethnicities to discover their views on whether we are alone or not, suggesting that most people believe that there is something beyond our senses. He suggests that:

[e]very person is innately disposed to search for community of some kind...We desire to find others who think and are inspired by similar things. We, as humans on earth, need to know if we are one of many beings in the universe or freaks of nature blown and tossed by the galactic winds.<sup>13</sup>

His installation, designed for public places, is planned as a multimedia three dimensional schematic of stars. He uses audio interviews, helium balloons with internal lights and sensors fixed at different elevations through which spectators can walk. The number of spectators determines the amount of light emanating from the balloons.

In 1961 the French artist, Yves Klein, made a work which was intended to remind us, as Storr recounts, that the human's leap into the void is a 'metaphysical rather than a scientific fact.'<sup>14</sup> This coincided with the first Soviet cosmonauts finally being sent into space. Exploring the textural objectivity of painting by using various materials to mould their surfaces, his work *Planetaire Bleu*, (see fig. 38), Storr describes as:

like a section of a topographical map of an unidentified mountainous region that could be at the highest altitudes or in the oceans's lowest depths. Dusted with his trademark IKB (International Klein Blue), this map conflates mass and light, material tactility and dematerialized opticality, finite objecthood and infinite space.<sup>15</sup>

A leap into the void, a void paradoxically replete with light, raises questions. What does it mean to be part of the expanding cosmos, and to understand that nothing is permanent? When we look into the night sky are we aware that we are seeing beyond our genetic programming, looking through time into a remote past? There is little to assist us to see beyond the horizon and understand distances on astronomical scales. Our knowledge is by necessity filtered through technology. Our earth-bound cues, such as linear or atmospheric perspective or motion parallax, mostly do not apply to our experience of the sky. We know about the motion of the planets but the

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<sup>13</sup> Daniel E. Goods, 'Revelations at the Jet Propulsion Laboratory' in *Leonardo*, Vol. 38, No. 5, p. 380.

<sup>14</sup> Storr, 'The Map Room', p. 21.

<sup>15</sup> *Ibid.*, p. 20-21.



Fig. 38 Yves Klein, *Planetaire Bleu*, 1961, pigment and synthetic resin on board, 31 by 24", courtesy of Sidney Janis Gallery, New York.

ground on which we stand seems still. However, through the process of making art I am exploring the possibilities of experiencing the cosmos in other ways that go beyond mere understanding.

Making contemporary art is a process increasingly interested in a critique of technology and its potential to disassociate from human experience. In her essay for the exhibition *The Labyrinthine Effect*, the curator Juliana Engberg comments on this move by artists into a wider field of activity that includes computer technologies, physics, biology, economics and the like. She suggests that the model of the labyrinth is a 'rhizome' structure ( as proposed by the philosophers Deleuze and Guattari),<sup>16</sup> describing it as a metaphor of spatialization evoking the increasing complexities of contemporary life. She writes:

[i]n application the rhizome has become the world-wide web, the telephone system, video games, inter-active cinema, and of late we have re-embarked on a new kind of searching nomadism in various fields of study. Physics, maths, economics and biology all now rely upon the interconnectedness of things to investigate ever-growing other connections. DNA for instance has opened up the labyrinthine world of the human body as constructed like a rhizome<sup>17</sup>

### **Unstable territories.**

A century ago the renowned physicist Albert Einstein radically changed the way we think about 'objective' external reality when he proposed the theories of special and general of relativity. He demonstrated that matter and energy are interchangeable, and space and time are not absolute as previously believed. They are purely relative phenomena. How can we understand this notion of relativity ? Marianoff explains it simply:

[w]e would never know the motion of a train that ran smoothly at a constant speed unless we saw moving objects through the windows. And we could never discover the forward movement of the earth if we could not see the heavenly bodies.<sup>18</sup>

Einstein, by conducting thought experiments that imagined the observer's viewpoint, showed how the constant speed of light, (nothing can travel faster

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<sup>16</sup> Deleuze and Guattari, *On The Line*, p.47.

<sup>17</sup> Juliana Engberg, *The Labyrinthine Effect*, exh.cat., (Melbourne: Australian Centre For Contemporary Art, 2003), p. 3.

<sup>18</sup> Dimitri Marianoff with Parma Wayne, *Einstein – An Intimate Study of a Great Man*, (New York: Doubleday, Doran and Co.,1944), p. 46.

than the speed of light, 300,000 kilometres per second), could create strange phenomena in objects moving close to that speed. Objects would appear to shrink along the direction of travel, while time appears to stretch and slow down for it, and this effect is relative to the observer's viewpoint. Astrophysicist Janna Levin puts it simply, 'Time dilates, space shrinks, and mass grows as we near the speed of light.'<sup>19</sup>

Physical space as Einstein described it, has been pictured as a vast membrane or a rubber sheet which can be distorted or depressed by a bowling ball. Wertheim explains further:

[a]ccording to Einstein's equations, the more massive a body, the deeper will be the 'depression' it creates in space, and hence the greater will be the force of gravity in its vicinity. Physicists refer to this distorting of space as its 'curvature.' In general relativity then gravity is just a by-product of curved space....and every star in the universe makes its own curved depression in the spatial membrane which takes on the character of an undulating landscape ... because space is a membrane shaped by matter, when the distribution of matter changes so does the landscape.<sup>20</sup>

It is thought that our experience of gravity is our fall along these natural curves as this diagram of *Distorted Space-Time* demonstrates. (See fig. 39). Similar to the ripples in a pond, gravitational waves are ripples in spacetime. Spacetime warps in response to the distribution of matter and energy. The contact of these waves is the gravitation between bodies. It is a relative force, a distortion in space and time in the presence of matter. Matter tells space how to curve. Space tells matter how to move. Einstein described this spacetime continuum as three dimensions of space and one of time, (a fourth dimension). We not only locate ourselves in space but also in time. We can view the stars from the same location on the hill as our ancestors did centuries before, but we are not occupying the same location in 'spacetime.' In a cosmic space that is restless and constantly moving, when and where things happen is purely relative to the observer. Scott McQuire suggests that the understanding that we are dependent on the observer's frame of reference as Einstein proposes, determines that:

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<sup>19</sup> Janna Levin, *How The Universe Got Its Spots – Diary of a Finite Time in a Finite Universe*, (London: Phoenix, 2002), p. 34.

<sup>20</sup> Wertheim, *The Pearly Gates of Cyberspace*, p. 173.

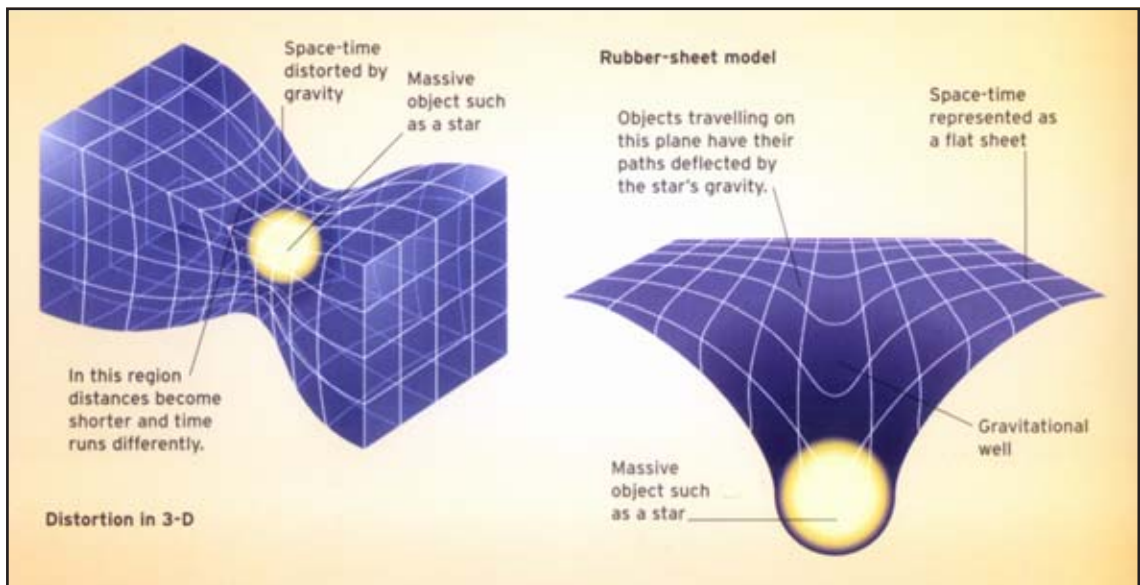


Fig. 39 Distorted space-time.

[s]pace is increasingly experienced as ex-centric rather than absolute – the stable centre of the classical world can no longer hold. In comparison to the integral spatial envelope of the classical world, modern spatiality has, seemingly inevitably come to be conceived in *relational* terms ... characterized by unstable and shifting relations .<sup>21</sup>

Time and space are modes by which we think, tools for thought, rather than conditions in which we live. They are arbitrary inventions, props for our thinking. Merleau-Ponty observes that to think in this way is not to reject scientific research, but to reject its dogma, and allow for the role of human perception and variety in human experience. He observes that,

[t]he physics of relativity confirms that absolute and final objectivity is a mere dream by showing how each particular observation is strictly linked to the location of the observer and cannot be abstracted for this particular situation; it also rejects the notion of an absolute observer. We can no longer flatter ourselves that, in science the exercise of a pure and unsituated intellect can allow us to gain access to an object free of all human traces, just as God would see it.<sup>22</sup>

The emanation and manipulation of light is a fundamental part of the process of mapping phenomena in the night sky. It could be thought of as mapping a network or fabric of light, just as the process of mapping reveals different models of the fabric of space. Newton's earlier model of a static, geometric and infinite universe was a rigid, rectilinear space. In this space, he proposed that light travels in straight lines and the heavenly bodies are governed by the law of gravity (obeying the law of universal attraction). This force explained the elliptical path of planets and the movement of bodies in space. By contrast, the new physics in Einstein's relativist universe proposes that space and time are part of each other and distorted by matter. Now relationships between space, time, matter and gravity are proposed in a non-Euclidean framework of expanding space. In this universe curved space-time acts like a lens bending and redirecting light, as imaged in this video still *Infinitely Curved – The Newtonian System and the Relativist Universe* 1992 (see fig. 40). In developing my work I was mindful of the way in which these models and processes have interacted to map and reveal cosmic space. The digital prints work with fragments of these models. Referencing time based media such as time lapse photography, and the emanation of light, the patterns,

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<sup>21</sup> Scott McQuire, 'Space Creation: Lesson from the City' in exh. cat. *Deep Space*, p. 68.

<sup>22</sup> Merleau-Ponty, *The World of Perception*, p. 44-45.



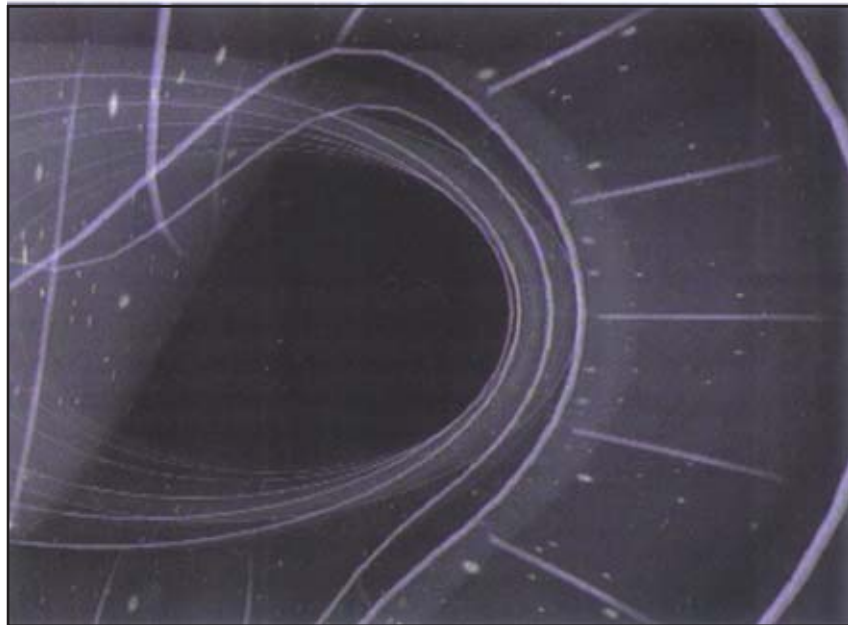
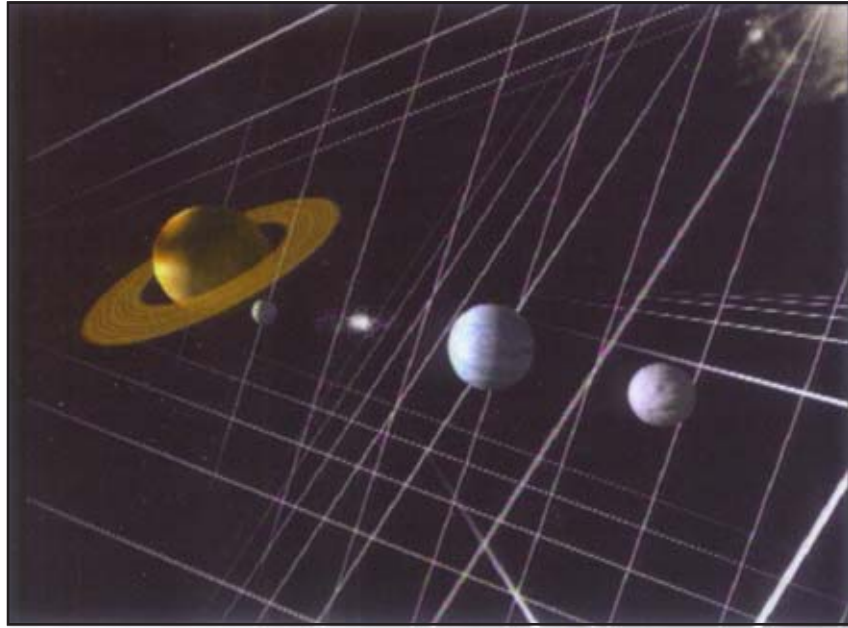


Fig. 40 L. Delesalle, M. Lachieze-Rey, J.P. Luminet, *Infinitely curved – The Newtonian System (above) and the Relativist Universe (below)*, 1992, video still.

strips, flecks, and curved lines, play with the idea of gravitational distortions, warping, pushing and pulling matter in spacetime.

What Einstein also proposed was that light behaves both like a wave and a particle. Matter is made up of atoms which are individual quantum such as electrons, protons and neutrons. When we observe light and matter, depending on the experiment, they will act either as a wave or as a particle. Its specific form appears to depend on how light and matter are measured and observed, choosing at random from the possibilities available. A quantum entity can spread into a blur of uncertainty and be in two places at once. We can only know the probability of its happening. It may be that quantum theory is presenting us with an array of parallel and possible worlds. Damien Broderick describes the way in which quantum theory activates this simultaneity of possibilities:

[w]hen a particle of light darts from a lamp to this page and then back to your eye, it always takes the path of least action, the shortest possible route. But in doing so, according to quantum theory, it actually took all possible pathways, which scrunched together to take that single shortest trip. What's difficult to grasp about this bizarre perspective is that everything in the cosmos functions by these quantum rules. Underneath the everyday stolid, sensible world, true reality is this hissing, seething fury of alternatives, jammed on top of each other. To describe it physics needs not just bits, the yes/no, one/zero binary choices of arithmetic and computer science, but qubits, units of information that contain both yes and no, one and zero.<sup>23</sup>

Subjective decisions about how to conduct experiments with light as a wave or a particle determine whether light appears as one or the other. The act of observation determines how the quantum event will present itself. The paradoxes in Einstein's theories of relativity and Niels Bohr's quantum mechanics, (particle physics), come together in Bohr's theory of complementarity proposed in 1926. Leonard Schlain observes that Bohr:

specifically addressed the paradox that light appears to be both wave and particle, but this theory can be applied equally well to dichotomies of space/time, right/left, and art and physics. He appreciated that observer and observed are also a reciprocal, indivisible pair, and proposed that there can be no such thing as objective reality .... The theory of complementarity fuses the *out there* back together with the *in here* ...John

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<sup>23</sup> Damien Broderick, *The Sum of the Cosmos*, Review of 'Programming The Universe: A Quantum Computer Scientist Takes on the Cosmos' by Seth Lloyd (Jonathan Cape 2006) in (The Weekend Australian, July 22-23, 2006), p. 12.

Wheeler, Bohr's student, echoing this sentiment proposed that mind and universe are also a complimentary pair; since neither could exist without the other.<sup>24</sup>

So here I stand, under the night sky, between 'out there' and 'in here,' between objectivity and reflection, looking into a distant, intensely complex and mysterious void. This has caused me to speculate on the 'searching nomadism' that has stimulated this research.

### **The impulse to map.**

The impulse to map, the cartographer Brian Harley suggested, has probably always existed in human consciousness, and he noted that, 'the mapping experience – involving the cognitive mapping of space – undoubtedly existed long before the artefacts we now call maps.'<sup>25</sup> The astrophysicist Paul Davies maintains that '[o]ur mental processes have evolved as they have precisely because they reflect something of the physical nature of the world we inhabit.'<sup>26</sup> What is it then that drives us to map and manipulate space? Is there a mapping impulse in human consciousness that causes us to dissect the visual and search for descriptions of the world? Is the entire cosmic code mapped within us? Levin argues for this suggesting:

just as our genes carry the memory of our biological ancestors, our logic carries the memory of our cosmological ancestry. We are not just imposing human-centric notions on a cosmos independent of us. We are progeny of this cosmos and our ability to understand it is our inheritance.<sup>27</sup>

Is the process of mapping, as an analogous structure for our world, always already existent in the territory of our minds? Bateson has suggested that:

[w]e say the map is different from the territory. But what is the territory? Operationally somebody went out with a retina or a measuring stick and made representations which were then put on paper. What is on the paper map is a representation of the man who made the map; and as you push the question back, what you find is an infinite regress, an infinite

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<sup>24</sup> Leonard Schlain, *Art and Physics. Parallel Visions in Space, Time and Light*, (New York: Quill William Morrow, 1991), p. 430, 431. It was Max Planck, another pioneer of quantum mechanics who proposed that the energy possessed by matter can be changed into radiation only in discrete chunks or *quanta* and not as a smooth continuous wave.

<sup>25</sup> Brian Harley, 'The History of Cartography,' vol.1, eds. Woodward and Harley, Chicago 1987, in John Noble Wilford, *The Mapmakers -The Story of the Great Pioneers in Cartography – From Antiquity to the Space Age*, (London: Pimlico,2002), p. 13.

<sup>26</sup> Paul Davies, *The Mind of God*, p. 24.

<sup>27</sup> Levin, *How The Universe Got Its Spots*, p. 58.

series of maps. The territory never gets in at all.... Always, the process of representation will filter it out so that the mental world is only maps of maps, ad infinitum.<sup>28</sup>

Our understanding of cosmic space is increasingly being mapped out in an electronic space of data and complex and changeable networks. The link between physical processes and computation is more and more in evidence. In a brief tracing of a human version of the evolution of the universe rooted in mythology and then machines, the physicist Broderick, observes that:

James Jeans, an early cosmologist, declared that the universe was more like a great thought. Today there's a computer on every desk top and in every mobile phone, so it's not surprising that the great thought starts to look like pure information. And not your father's information, the sort in the library. This is information with a vengeance: qubits, quantum information from parallel worlds.<sup>29</sup>

As a painter working in a broader field of media, I have noticed in many instances that, rather than an analogue of the experience of nature, the surfaces of images are increasingly looking like a computational or an operational surface. The process of mapping has also been likened to working with an operational surface. The American artist Julie Mehretu works in this way. Her work has a layered complexity related to imagery generated by computer graphics, and it demonstrates a formal command of complex graphic and spatial techniques. She describes a fictional cosmology and a hybrid complexity that draws on cartography, architectural drawing, urban maps and abstract painting. They are what she describes as 'psychogeographies.'<sup>30</sup> Brandon Taylor describes her huge five and a half metre painting *Retopistics: A Renegade Excavation*, (see fig. 41), from 2001:

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<sup>28</sup> Gregory Bateson 'Steps to an Ecology of Mind' quoted in Muniz, *Reflex*, p. 159.

<sup>29</sup> Damien Broderick, *The Sum of the Cosmos*, p. 12.

<sup>30</sup> Mehretu exhibited in *GNS Global Navigation System* in Paris, curated by Nicholas Bourriaud at the Palais de Tokyo, [www.palaidetokyo](http://www.palaidetokyo) in 2003. *GNS* raises the hypothesis that topography is a major element in contemporary art and a key to understanding it.' *GNS* raises an important question: what motivates artists, employing a broad range of means to REPRESENT today's world while the media overwhelm us with images of the planet? 'Using processes involving inquiry, exploration and investigation, the artists taking part in *GNS* proceed by collecting data in order to produce forms, subsequently working from information that is 'processed' in a variety of styles, from diagrams to documentaries, painting to installations. 'Maps, charts, satellite images, still photos, sampling, social studies, diagrams and tables – never has geography played such a significant role in art today ... In an age that witnessed the voyages of Magellan and Sir Francis Drake, artists contributed to discovering a planet that was largely unknown, whereas artists of our day and age travel over a globe whose least square meter (or nearly) has been surveyed, crisscrossed by communication networks and scrutinized by hundreds of satellites.' Nicholas Bourriaud. [www.laurette.net/projects/2003/gns.htm](http://www.laurette.net/projects/2003/gns.htm) p.1 [accessed 31/08/04].



Fig. 41 Julie Mehretu, *Retropisitics – A Renegade Excavation* 2001, ink and acrylic on canvas, 2.59 by 5.49 m, U.S.A.

[w]e see ink sketches of familiar buildings, overlain by delicate biological forms and curved lines, overlain once more by splinters of solid, translucent, or architectural fragments rushing in to our field of view....Reverberating with echoes of Russian Suprematism ...while at the same time trumping even the grandest mural scale of the American Abstract Expressionists, such paintings demonstrate by visual conviction alone that abstract art as a category is far from dead... [and] [i]t is the Baroque entanglement of the very small and the very large in Mehretu's work that lends it contemporary force...<sup>31</sup>

To explore and critique visuality, painting has for a long period been engaged with mechanical devices such as the camera obscura, and later photography. This is a continuing interest in my own practice. The exhibition (*painting*) at Monash University Museum of Art in 2000, proposed that painting has continued to be influenced by new imaging technologies. A range of work was exhibited by artists who have redefined their practice in this context. The works in this exhibition, as the curators suggest, ' [present] the premise that painting now appears the most appropriate medium for creating hybrid images and for recording the effect of electronic media on contemporary culture.'<sup>32</sup>

In discussing the impact of new imaging technologies the digital artist Humphries has noted that:

digital imaging, with its facility for sophisticated photo-realistic fantasies and virtual worlds engages the viewer in an indeterminate struggle between what to believe and what to doubt. The rapid advances in digital technology have not only extended ways of seeing, understanding and representing the world through new imaging technologies, but they have also redefined the ways in which we understand and relate to existing media.<sup>33</sup>

Mixing mythology and science in an ironic and playful way, American artist Matthew Ritchie, attempts through a more personal and idiosyncratic vision, to unravel the vastness of the universe. With the idea of mapping the origins of the universe, and using a broad range of media, he has been working on a long term project incorporating into his work all governing theories of existence. This is based on the idea of the universe having its origins in the

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<sup>31</sup> B.Taylor, *A New Complexity:1999-2004 Art Today*, (London: Laurence King Publishing, 2005), p. 219.

<sup>32</sup> Troy Ruffles and Sarah Ryan (*painting*), exh. cat.,(Hobart: Plimsoll Gallery, 2000), p. 2.

<sup>33</sup> Tristan Humphries, *Transformations Australia*, p. 6.

theory of the Big Bang. Working with a range of diagrammatic illustrations, drawings and paintings, Possidente describes his work:

[i]nto the vastness of such explorations he infuses a dose of soap opera, comic book action and historical art references. Each elemental force is given a personality and background story with colours representing different players.[His] work is sprawling and overwhelming, much like his subject matter.<sup>34</sup>

The search continues for new topologies that might unravel both macro and micro space by mapping a new labyrinthine topology, a different kind of territory, an unfolding ‘terra incognita.’

### **Soundings.**

Modern physics has dominated our thinking and filtered the world through a mathematical lens of selected and deeply constructed images. Lefebvre reminds us however that, ‘[s]pace considered in isolation is an empty abstraction; likewise energy and time.’<sup>35</sup> In the course of this writing I revisited a catalogue essay by James McGregor for the group exhibition *Liquid*, at the Geelong Gallery in 1999. In describing my work, he found a resonance with science and history. He observed that the ‘installation exists somewhere in the space-time continuum of modern physics and cybernetics. History and contemporaneity collide in a web of times and spaces.’<sup>36</sup> The Dutch contemporary artist J.C.J. Vanderheyden describes the way in which artists reference history observing that, ‘[t]he contemporary artist makes use of history, of tradition, not by quoting senselessly, but by effectively conquering a new place and winning a new time: a place of one’s own, a time of one’s own.’<sup>37</sup>

Where once the Renaissance perspectival point of view situated us at a central point in space to stand and look, now we inhabit space in multifarious ways. My interest has centred on the relationship between pictorial space (a virtual space), its illusory potential, and the dialogue with physical space. I

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<sup>34</sup> Bernarde Possidente, ‘Genetic Mapping: I Map Therefore I Am’ in exh. cat. *The World According to the Newest and Most Exact Observations- Mapping Art + Science*, (New York: The Tang Teaching Museum and Art Gallery at Skidmore College, 2001), p. 68.

<sup>35</sup> Lefebvre, *The Production of Space*, p. 11

<sup>36</sup> James McGregor, in exh. cat. *Liquid – Beyond The City Limit* (Geelong: Geelong Gallery, 1999), np.

<sup>37</sup> J.C.J. Vanderheyden, *The Ideal Place: Time Lost And Time Won*, Ed. Nicola Kearton, (England: Art and Design Profile, No.42), p. 81.

attempt to locate connections and disconnections of sensation and sensibility between historical and contemporary models of the visual and spatial. Through installation practice my work has focused on painting, photography and digital manipulation, and the relationships and tensions between figuration and abstraction. The Baroque aesthetic has been a continuing reference for me. This model attempts to meld form and content. It reveals enigmas and intense psychological states emphasized by disjunctive and innovative explorations of light, optics and illusionism. It is characterised by multiple and many layered variations on a theme, anamorphic distortions and orthographic projections. It involves the theatrical manipulation of space in architecture: the theatricality of embodied experience. Tom Conley describes the Baroque as:

a trope that comes from the renewed origins of art and has stylistic evidence that prevails in culture in general. Under its rubric are placed the proliferation of mystical experience, the birth of the novel, intense taste for life that grows and pullulates, and a fragility of infinitely varied patterns of movement. It could be located in the protracted fascination we experience in watching waves heave, tumble, and atomize when they crack along an unfolding line being traced along the expanse of a shoreline; in following the curls and wisps of colour that move on the surface and in the infinite depths of a tile of marble; or as Proust described, when we follow the ramifying and dilating branches of leaves piled in the concavity of the amber depths of a cup of tea.<sup>38</sup>

In what scientists are revealing now as a chaos governed universe, the Baroque, as an artistic system, expresses multiple voices and extremes. It has assumed new relevance to the experience of life associated with complexity and its consequences. The focus is shifting in the contemporary milieu and in a cinematic way spatial ambiguities across a range of experience question what is physical and what is illusion. These conditions have lead me to work with various techniques of observation and representation in the traditions of painting and photography. These have then evolved into wider operations. Many artists however, have moved away from paint as a medium. They pursue the concept and idea of painting through other media in various hybrid practices. As Juliana Engberg says in her essay on the work of Nike Savvas:

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<sup>38</sup> Gilles Deleuze, *The Fold – Leibnitz and the Baroque*, fwd. and transl. Tom Conley University of Minnesota Press: Minneapolis, 1994), p. x.



[w]hile it is not a painting in the traditional use of 'paint' it is nevertheless a painting in spirit. One which unpacks and repacks the multitude of procedures that a painting operates in order to produce its visual effect and psychological impact.<sup>39</sup>

Nike Savvas', in her 2005 exhibition titled *Atomic: full of love, full of wonder*, (see fig. 42), suspended one hundred thousand coloured balls at different heights and depths, that were gently vibrated by fans. This caused a kind of optical mixing, creating a contemplative and transcendent space that alludes also to spectacle and distraction. Engberg's comments about her work have, in part, resonances with my current work. She suggests that:

Savvas' project also alludes to the way in which the science of optics has constructed our vision, reaching new heights in Byzantium, Modernity and our current digitally organized world. But her project is to assert sensuality over clever yet brittle science. In fact her quest to emphasize aesthetics over mechanics might be construed as a form of nostalgia for the deep delights of a Rothko, for the sight of the sublime landscape, or a passion for painting in general.<sup>40</sup>

The conceptual and the abstract have been major players in the evolution of art practice in the twentieth century, bringing together art and philosophy. The mid-twentieth century practice described as Minimalism moved away from a focus on the autonomous art object and its internal relations. Instead it focused on an engagement with the subject as spectator, on materiality and process, space and light. Reductive forms were preferred, as well as the monochrome, repetition, the grid and geometry. The aim was an art of literal physicality and mechanical impersonality. It was an effort to limit metaphorical readings, rejecting the art object as an independent, fixed entity and the vehicle for abstract ideas or emotions. As Robert Morris observed, '[this] new work takes the relationships out of the work and makes them a function of space, light and the viewer's field of vision.'<sup>41</sup> Post-Minimal practice however, readmitted the personal and the metaphor. It began to critique the authoritarian and sometimes brutally austere rhetoric and form of the 1960's. With this came an engagement with a more open-ended application of minimalist precepts.

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<sup>39</sup> Juliana Engberg, *Nike Savvas, Atomic: full of love, full of wonder*, (Melbourne: Australian Centre for Contemporary Art, 2005), np.

<sup>40</sup> *Ibid.*, np.

<sup>41</sup> Robert Morris in *Olafur Eliasson*, Madeleine Grynsztejn, Daniel Birnbaum, Michael Speaks, (London: Phaidon, 2002), p. 44

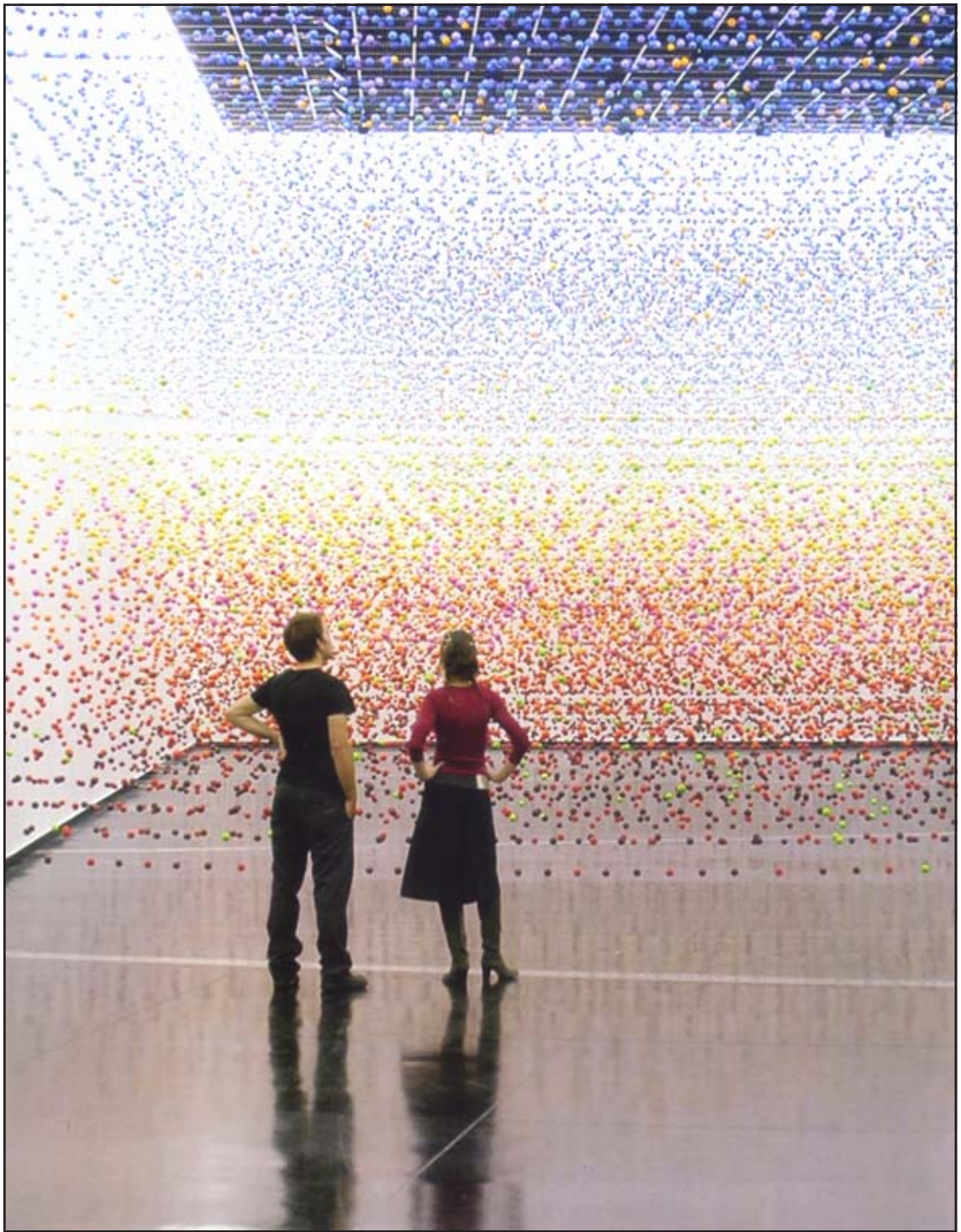


Fig. 42 Nike Savvas, *Atomic: full of love, full of wonder*, 2003, polystyrene, nylon wire, paint, electric fans, dimensions variable, Australian Centre for Contemporary Art, Melbourne.

The phenomenological and perceptual issues however that arose from these earlier influences were a focus in work of the Australian artist Howard Taylor. He took a somewhat different approach from his mid-century contemporaries, who were experimenting with formalist non-referential abstraction. Although continuing his associations with geometric abstraction and minimal art, he also combined an interest in the illusory potential of the painted surface through the manipulation of light and colour. His work draws on the experience of visual phenomena in the natural environment. In his 1970 work *Columns*, he experimented with the idea of painting three dimensionally. He constructed three reflective steel cylinders of subtly varying colour on the upper halves, with rhythmic black diagonal bands running around each one, the lower halves being completely black. These works were full of movement and interacted with the viewers movements in both a visual and physical way. Taylor describes his motivations for the work:

[m]y aim is to attempt to find, in a three dimensional form, a very simple solution to what I have experienced either in the bush or just in nature. I spend time looking at the colour of the bush – the light effects on the trees, foliage at different times of the day. My work is a sort of abstraction of these observations.<sup>42</sup>

Practices such as Taylor's, emerging from earlier influences, have influenced my work. I have sought to position myself between painting and sculpture, using three dimensional objects that resemble sculpture but are in fact conceptually closer to contemporary painting. Coupled with this I have been interested in the German artist Gerhard Richter, who in the latter part of last century worked with the dualities of painting and photography. He has questioned representation across a whole field of figuration and abstraction. His abstract paintings he suggests, are 'complex and discontinuous narratives. They have a structure of irresolution and seem to live on the edge of emergence into meaning.'<sup>43</sup> He describes them as 'fictive models' 'because they make visible a reality that we can neither see nor describe, but whose existence we can postulate.'<sup>44</sup>

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<sup>42</sup> Howard Taylor, quoted in *Howard Taylor – Forest Figure*, Ted Snell, exh. cat., (Perth, Western Australia: Freemantle Arts Centre Press, 1995), p. 110.

<sup>43</sup> As quoted, Gerhard Richter in *Gerhard Richter Paintings*, interview with Benjamin Buchloh, ed. Terry Neff, (M.C.A. Chicago: Thames and Hudson, 1988), p. 40.

<sup>44</sup> As quoted in *Biennale Of Sydney 2000*, Jutta Nestegard, essay on Gerhard Richter ed. Ewen Mc Donald (Sydney: Biennale of Sydney Ltd., 2000) p. 105

During the twentieth century the ground has shifted from the deconstruction of appearances to the deconstruction of meaning in which the self and its position in the world seem to have no fixed centre. Through experimentations with medium and process, artists today, not unlike scientists, deconstruct the nature of the image and the nature of evidence. Within current theories they examine the ontology of the art work, the significance of context and site, the nature of matter and space, and the role of the spectator. These activities raise questions. What now is reality and what is representation? What is map and what is territory? Such questions relate to social and technological change, and to constantly changing codes and signifying practices. Things are being deciphered in relation to a broader network of relations. Baudrillard has claimed that:

[L]ate twentieth century communication and information technologies have produced such a blurring of what is real and what is representation that the two can no longer be distinguished... It is [he says] ... 'the real and not the map whose vestiges subsist here and there'. .. [suggesting not] that the world is scarcely more than a vast simulacrum, but rather that the act of differentiating between the real and the representation is no longer meaningful.<sup>45</sup>

Increasingly the contemporary sensibility of artists and the public at large is being filtered through what he describes as the 'hyper real.' Often assisted with complex technologies, Baudrillard maintains that this notion has colonized nature, reality and our consciousness. It has created an increasing demand for novelty, or the sensational and the spectacle; the 'hyper real', as a simulation of the real.' Deleuze maintains however, the need to reconcile these two positions, the real and its simulation. Colebrook explains further:

Deleuze's notion of the simulacra both resists the nostalgia that would want to go back to a time when life was 'more real' *and* rejects the idea that we now live in a postmodern world of mere images with no real causes. For Deleuze the simulacrum or image is real, and life is and always has been simulation – a power of production, creation, becoming and difference. The idea that all we have are mere representations or constructions of the world seems to posit some real world that is lost or unavailable. The simulacra for Deleuze however, is neither a recent nor a merely cultural event. The simulacrum is not the loss or abandonment of the real; it *is* the real.<sup>46</sup>

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<sup>45</sup> Corner, 'The Agency of Mapping' in Cosgrove, *Mappings*, p. 222.

<sup>46</sup> Colebrook, *Gilles Deleuze*, p. 101.

In the process of making work for this research project I have taken on the role of editor, appropriating, recycling and re-contextualizing many visual references and found images that are already circulating through various information networks. Many of these are the result of computerization and technologies involved in mapping, observation and image capture; technologies that have contributed in one way or another to the evolution of new realities. In fact the night sky distanced as it is from the full range of our sense experience is largely understood through an unfolding reality or simulacrum.

### **Retrospective projections.**

Projections can be forecasts. They can also be ideas or emotions transferred on to something or someone else, either consciously or unconsciously. In mapping, as in life, projections are an inexact science. For example, in the Western mapping of topographical space, a projection is a mathematical device used to represent the earth or a celestial sphere on a flat plane. We need to understand the language to translate it conceptually because we know in our minds that the earth is spherical. Yet in reality it seems rather flat. However, as with art, these projections serve to model ideas about space and its relationship to concept and context. These are images formed in the mind, within a certain cultural milieu. In the process of decoding the language they are able to be transformed into material realities.

Experimenting with installation to manipulate space and explore ways of seeing, my practice has shifted between painting, and photography. I have often used what is now regarded as 'fossil media',<sup>47</sup> media that has rapidly become outdated. These include pin-hole photographs, photograms, contact prints. These photographic works have often been digitally manipulated. The paintings have an industrially constructed, object-like dimension to them. I have also used industrial strength cardboard cylinders, reflective plastic domes, mirrors, and perspex and cardboard tubes. The art work as object, and the manner in which the visual image enters our consciousness, (increasingly through the process of mechanical reproduction technology), generated an interest in Minimalism's critique of originality. This involved

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<sup>47</sup> Arpad Bak, 'Dead media project: an interview with Bruce Sterling', in *C-theory. Theory, Technology and Culture*, (online magazine, vol.22, no.1-2): [www.ctheory.com/](http://www.ctheory.com/).

working with process, series and proliferation, fragmentation, abstraction, repetition and modularity. I began working with installation (as an extended field of painting, as a condition of painting), and experimenting with these ideas. In different ways I was generating interactions with the viewer. The works were often situated in space in a way that would render negotiable the boundary between the art-object and the physical and spatial nature of the site. Some of these experiments I revisit now as a way of lending context to my current work. Paradoxically they are more like retrospective projections. They shift back and forward, not really pinned down to a particular time, still existing as material, and as memory.

### **Projection 1.**

In a series of works, some of which became the solo installation *Hyphen*, at West Space in 1999, the paintings I constructed were overlaid with minimal abstract and anamorphic painted images. These images were referenced from pin-hole photographs and fragments of mechanically reproduced art historical images. The simple optical principle of the pin-hole camera or 'camera obscura' is the foundation of photography. My camera is a simple box, (a 'camera obscura' or 'dark room'). Light beams enter a small hole, projecting an inverted image from the source of the light onto the inner and opposite side of the box. There, light sensitive film is fastened. It absorbs the light and records an image when treated chemically. The paintings were spare and object-like planks or panels. By reversing the process and rendering the result in paint, they mirrored photographic qualities while at the same time acting as a critique of the process of mechanical reproduction. The surfaces were monochrome and sometimes reflective, sombre and luminescent, with ribbons and flares of light. The works were modular, fragmented and serial forms. Some were wall-mounted, some leaning or freestanding. They reflected off each other to interact with space and the architecture of the site, inviting a physical engagement with the viewer.

Some of these works were assembled as a three dimensional floor model like a monolith or a raised sarcophagus. (See fig. 43). These works had a sub-text of loss. The references to photography served to re-enact the past as memory. The surfaces were both opaque and transparent. They had an enigmatic play of light and dark patterns, juxtaposing folds with convex and



Fig. 43 Felicity Spear, *Hyphen*, 1999, installation (detail), oil in canvas on panels, floor piece, 150 by 230 by 35 cm, Westspace Gallery, and Gossard Building Gallery, RMIT University, Melbourne.

concave grids. Appearing like an anamorphic and tessellated floor they referenced Vermeer's seventeenth century Baroque paintings and the Cartesian grid. In a paradoxical way this piece behaved both as an object in and of space. It was a material reality, referring to the manipulation of vision in an immaterial virtual reality which was simulated on the surface of the canvas. This created a tension between flatness and illusion. In the catalogue essay, *Hyphen- a place between histories*, Anna Clabburn gives a sense of the how the works unfold:

[w]e are never quite relaxed in Spear's environments. On the contrary, her low lying boxes, attenuated pillars and leaning serial forms are intended to conjure a sense of unease – as if to catch us in a time warp, our bodies folding and bending within an architecture of art historical memory. These objects flow between past, present and back again – defying logical and temporal boundaries.... each piece is calculated almost mathematically to create a physical and intellectual tension..... In generating and abstracting her images digital manipulation provides a 'third hand' that facilitates a connection with the reality of reproduction – a phenomenon which she actively critiques.<sup>48</sup>

## Projection 2.

The complete body of these works was later situated in St Stephen's Church, Richmond in a different configuration. I described it as a *Sounding*, testing the resonances that the work might have with the site. In fact, I decided to experiment with literal sound for the opening of the exhibition. The Baroque flute and recorder player Greg Dikmans, (the Elyseum Ensemble), played works from the sixteenth, seventeenth and twentieth centuries. The performance referenced the enmeshing of Baroque music with historical architectonics. It also alluded to the disjunctions, the theatricality and the dialogue of signs and multiple voices which were revealed by the juxtaposition of the works with the site. I placed a small text on the glass portico inside the entrance. It merged with the reflections on the glass and the work and architecture within.<sup>49</sup> (See fig. 44). The works, inserted into the layers and sensibilities of this space, appeared as signs or marks. The

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<sup>48</sup> Anna Clabburn, Catalogue Essay for *Hyphen – a place between histories*, at West Space, Melbourne, solo exhibition 1999, np.

<sup>49</sup>  
Falls shadow  
between place time  
darkness be  
light  
silence





Fig. 44 Felicity Spear, *Sounding*, 1998, installation (detail), mixed media, dimensions variable, St. Stephen's Church, Melbourne.

intention was to change the sense of the site and shift and diffract pre-conceived notions of this space. The installation enabled the viewer to navigate through the architecture and the trappings of the site, interacting with the works from different positions and viewpoints. What was suggested here was a different mapping of this place, and the way in which our interactions with art and the site might provoke other associations in time and space.

### **Projection 3.**

Photography could be regarded as an aide-memoire, reconstructing the past in order to talk about other permutations of time and space. Roland Barthes describes it as 'reality in a past state: at once the past and the real.'<sup>50</sup> However, the digital manipulation of photography now contests the reality value of the photograph. For the site-specific installation *Lodged* at Temple Studios, which I created in company with the British artist Sarah Winfrey, we mapped the literal and metaphorical associations of this space, peeling back the layers in order to expose the site. My work involved two wall-sized, digitally manipulated photocopied works made from pin-hole photographs of the exterior of this old Free Masons building. These were overlaid with associated and subtly subversive text. (See fig. 45). Each work consisted of four long panels pinned to the wall, one above the other, to complete the whole. The exterior of the building was collapsed into the interior, inhabiting a dark and cave-like space from which our illuminated images emerged. They appeared as if from the shadowy edges of a pin-hole photograph or the camera itself. Writing about this work Brenda Ludeman observed:

[t]he use of photosensitive paper allows for the slow revelation of the alternating patterns of light and dark, [and] the resulting image has a distinctive fluid quality. It prefaces an uncertain zone that is contingent on the availability of light. This is a realm in which both the historical and the new co-exist.<sup>51</sup>

The digital manipulation of these photographs (created with the basic technique of the pin-hole camera), enabled a critique of, and experimentation with, the observer, and representations of physical and psychological space.

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<sup>50</sup> Roland Barthes, *Camera Lucida – Reflections on Photography*, Trans. Richard Howard (London: Vintage, 2000), p. 82.

<sup>51</sup> Brenda Ludeman, in *Lodged*, exh. cat, (Melbourne: published by the artists, 1998).



Fig. 45 Felicity Spear *Lodged*, 1998, (detail), *Evidence*, mural size photocopy of digitally manipulated pin-hole photograph, three sheets, total sheet size, 360 by 720 cm, Sarah Winfrey, *Intimate Apparel*, 42 by 35 cm, *Check*, 33 by 33 cm, radiographs and fluorescent light, Temple Gallery, Melbourne.

Muniz has noted that ‘obsolete media seem to represent “truth”, or at least integrity, in the face of emerging new media. One way or another, the picture within the picture is always pointing out how we – or our media – look at ourselves as we climb the ladder of image technology.’<sup>52</sup> Perhaps the act of being engaged with the process itself does express a form of truth? There is no lens in this camera and the tiny hole through which light travels provides infinite focus. I was required to ‘see’ using intuition and experience to learn what it could reveal. These photographs were influenced by the artistic-philosophic concepts that circumscribe painting. I was interested in re-examining, both through process and context, earlier prescriptive models of seeing and organizing space using photography. Jonathan Crary, commenting on the uses of the camera obscura over time, describes it as:

a complex social amalgam, maintaining that the optical device and the observer cannot be separated. The camera obscura is what Gilles Deleuze would call an *assemblage*, “something that is simultaneously and inseparably a machinic assemblage, and an assemblage of enunciation.” An object about which something is said and at the same time an object that is used.<sup>53</sup>

An exploration of context takes place in conjunction with the photographic ‘process’, the paintings revealing smooth surfaces, ribbons of light and veils and shadows. Ironically, new technology seems to have brought photography closer to painting, the gesture of hand and brush being mediated through new forms of digital technologies.

#### **Projection 4.**

*Illuminating Evidence* was an installation at the Geelong Gallery in 2000, in collaboration with the Sarah Winfrey, who again used digitally manipulated x-rays of found material in light boxes and display cases. This installation was

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<sup>52</sup> Muniz, *Reflex*, p.113.

<sup>53</sup> Jonathan Crary, *Techniques of the Observer – On Vision and Modernity in the Nineteenth Century*, (Cambridge, Massachusetts, London, England: MIT Press 1992), 30,31. While conducting research at the National Maritime Museum at Greenwich in the U.K. I encountered a camera obscura, which was installed in 1994 in a small summer house adjacent to Flamsteed House, named for the first Astronomer Royal who set up his observatory there... On entering a small dark chamber through a curtain, a panning mechanism travels from side to side in an arc capturing views of the Museum and the River Thames on a circular screen at waist height in the centre of the room.

created as a forensic investigation and emanation of the often hidden history, materiality and physical construction of the spaces of the 'museum.' I used various photo-based processes, object paintings, (columns and wedges), and mirror pieces. Like a form of mapping, these were inter-related. They behaved like clues that could be decoded to reveal the space, the art and the architecture. The viewer was directed through the Gallery encountering distortions, hidden views and peripheral glimpses through reflected light. (See fig. 46). This set up an experience with the play of literal and metaphorical space. I produced digitally manipulated photocopies of long exposure pin-hole photographs of the pre-renovation interior and exterior of the Gallery and secreted them in the space. These disoriented and ultimately distorted images were situated in a constructed, free standing 'archive' room within the walls of the larger Gallery. Lesley Harding writes:

together with her three wrapped columns [the photographs] resound with the temporary nature of history, the way the passage of time is only relevant when remembered ...taking in Spear's photographs was a bit like sensing a ghost, a relic of a life or an era now finished ...(perhaps...) privy to another memorial snapshot of the next moment in that history.<sup>54</sup>

They were viewed in a haze of red light through small peep-holes with extended viewing tubes of varying focal lengths. (See figs. 47, 48). The red light, which references the technology of the dark room process, (the safe light), has been a recurring device in a number of my monochrome object-paintings.

This small room, inserted in the larger space, which was in turn a space within the larger space of the whole gallery, was part of a layering of space in which hidden information unfolded from ever-decreasing envelopes. Whether voyeur or detective, the peep-holes allowed the viewer to look through the layers of time and place, to be both distant and proximate. Peter Hill described the experience:

[i]nside the archive room you realize it is divided in two. Light filters downwards from one half. You notice peep holes drilled in the walls. You notice light boxes and later inspection will reveal radiograph images from the collection. Everywhere history is folded through technology and read

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<sup>54</sup> Lesley Harding, 'Illuminating Evidence, Felicity Spear, Sarah Winfrey - Watermarks: Crossings, Carolyn Lewens, Neil Stanier.' Review in *Artlink*, ed. Stephanie Britton, Vol. 20, No. 4, (Adelaide: Art Link, 2000), p. 71.



Fig. 46 Felicity Spear and Sarah Winfrey, *Illuminating Evidence*, 2000, (detail), constructed room, mixed media, dimensions variable, the Geelong Gallery.



Fig. 47 Felicity Spear, *Illuminating Evidence*, 2000, (detail), view through peep hole of constructed room, photocopy of digitally manipulated pin-hole photograph of room in Geelong Gallery.



Fig. 48 Felicity Spear, *Illuminating Evidence*, 2000, (detail), pin-hole photograph of room in Geelong Gallery.

through your individual sensibility....as you walk from the small white cuboid into the larger white cuboid [the] layer of meaning falls away from [the] layer of seeing.<sup>55</sup>

The manipulation of light and space gradually revealed the collapsing boundaries between exterior and interior, exposing what might be hidden from view. What was also exposed were different elements of time: the real time of the viewer's experience, and the layers of time evident in the form and content of the work. This included the durational quality of the still photograph. Alongside was documentation of the process, which recorded the length of the photographic pin-hole camera exposures, ranging from fifteen minutes to four hours.

### **Projection 5.**

During residencies in Paris at the Cité des Arts I mapped the perimeter of the building at different times of the day with pin-hole photographs. These photographs revealed the image as if through a peep hole, where soft focus shadowy edges surround the clearer and more illuminated centre. They involved a large degree of chance because of the unsophisticated nature of the camera, (mine is a cigar box), some revealing ribbons of light. Later I referenced these in long multiple panel paintings. (See figs. 49, 50). Like the surreal sense of the voyeur this project reminded me of the 'flaneur' navigating a path aimlessly through the streets of early twentieth century Paris. It was a chance wandering and a wry observing of the atmosphere of the streets.<sup>56</sup> An activity akin to what the French Situationists in the 1950's and 1960's described as the 'derive,' '... or the dream-like drift through the city. It was a mapping of alternative itineraries, subverting dominant readings and authoritarian regimes.'<sup>57</sup>

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<sup>55</sup> Peter Hill, 'Illuminating Evidence – Felicity Spear, Sarah Winfrey,' in exh.cat. *Watermarks: Crossings, Carolyn Lewens, Neil Stanyer, Illuminating Evidence, Felicity Spear, Sarah Winfrey*, (Geelong: Geelong Art Gallery, 2000), p. 15. These installations can be seen at <http://home.vicnet.net.au/~geelart/>

<sup>56</sup> Later, for a zine exhibition I made a zine titled 'Voyeurism,' using pin-hole photographs taken through the windows of the Cite des Arts, accompanied with a subversive passage of text from George Melley and Michael Woods, 'Paris and the Surrealists.' Thames and Hudson, 1991. I also produced a handmade book for a book exhibition containing hand tinted pin-hole photographs taken on the edge of the River Seine titled 'en automne'.

<sup>57</sup> Corner, *The Agency of Mapping: Speculation, Critique and Invention*, in Cosgrove, *Mappings*, p. 231.





Fig. 49 Felicity Spear, *Paris*, 1997, pin-hole photograph, 12 by 18 cm.



Fig. 50 Felicity Spear, *Untitled*, 1997–2000. oil on canvas on panels, perspex tube, laser printed images, dimensions variable.

Associated with this was another installation in Melbourne at Stephen McLaughlan Gallery in 2000. Titled *Fenestration*, it was an exploration of light and site using pin-hole photographs and painting. The focus was on single and double exposures of windows, and through windows, at disorienting angles. These images were taken from the interior and exterior of the gallery and the Nicholas Building. I juxtaposed two paintings, made to the same dimensions as the windows, with two mural sized pin-hole photographs. Over time what has evolved from these projections is a tendency to think increasingly about the behaviour of light, and its involvement in the physical and psychological associations and tensions that enable us to construct or define space. What had entered my practice was a process of mapping through the exploration of spatial relationships, as well as an engagement with spaces that are hidden from view, or cannot always be experienced directly through the senses.

### **Projection 6.**

In 2002 a sailing experience along the east coast of Australia shifted me into a physical and psychological zone that confirmed these tendencies. It has since grown into a wider field of activity. This was a space experienced over distance, of the ocean and the night sky. A sky which had over time already increasingly entered my purview. Navigating space, moving through space from one point to another, is a set of experiences that involves expectations and decisions. Often in its course one encounters unexpected territories and disquieting sensations. The implications involved in charting new territory underscore the ever-present possibility of disruption. They create a tension between our dependence on models and mappings for guidance, and our vulnerability in the face of the unpredictable. The transition between spaces, or the superimposition of one upon another as movement unfolds, is a point of challenge and re-orientation. It is this threshold of change that signals the potential for the emergence of new territories

In 2002 I developed the installation, *Traversing Space*, working with the

navigational model of the sextant,<sup>58</sup> aerial views and a local landmark, the You Yangs Hills. This had been a significant vantage point for two cultures in collision: the Wathaurong Aboriginal people, and exactly two hundred years ago for the explorer and navigator Matthew Flinders. The work referenced, in part, a scientifically oriented mapping of space using optical instruments, light reflection and mathematical navigation. It also juxtaposed different points of view, aerial and multiple perspectives, revealed through the changing location of the observer.

I constructed wedge-shaped paintings that in form referred to the angles of Euclidean geometry, (and to optical and mathematical navigation). The surfaces revealed long silhouettes of the distant horizon. Across these was a highly reflective paint surface in single, thin, horizontal bands. These bands interrupted the ordered, instrumental viewing process, presenting a more conceptual horizon. Elevated high on the walls of the gallery the paintings wrapped around them like an undulating topography or a dislocated horizon. A small mirror high on the wall reflected further silhouetted horizons on the deep returns of the paintings which were otherwise not visible. (See fig. 51). The use of reflected light captured the horizon revealing unseen information. Embedded in this coded space, forming a dialectic between the 'subject,' the space and the surroundings, was an 'other' hidden code, another orientation, waiting to be deciphered.

Derived from sections and fragments of my own ground and aerial photographs, I made contact prints from black and white, transparent and opaque, positive and negative images, some being superimposed over others. (See figs. 52, 53). Many of these photographs had been taken from a 1937 Aerial Observation Base plane in which a friend flew me over the Hills. These contact prints were both aerial and land-based, close in and far away. They became abstracted and patterned grids in which I also inserted photograms made from fragments of navigational instruments and maps of the area.

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<sup>58</sup> The hand held sextant, using a split mirror, measures the degree of angle by which a star or the sun is above the horizon. The angle depends on the observers' position, their latitude, (degrees north or south of the equator). Latitude makes a difference to how high in the sky a star will appear. Longitude, (degrees east or west of the Prime Meridian at Greenwich), is fixed by comparing the local time with Greenwich Mean Time. Where stars appear from east to west is determined by the seasons of the year and the hours of the day. By then referring to corresponding tables and charts navigators fix their position.



Fig. 51 Felicity Spear, *Traversing Space*, 2002, installation (detail), oil on canvas on panels, mirror, dimensions variable, Stephen McLaughlan Gallery, Melbourne.



Fig. 52 Felicity Spear, *Traversing Space*, 2002, installation (detail), *Map I-X*, contact photographic prints, mirrors, 164 by 93 cm overall, Stephen McLaughlan Gallery, Melbourne.

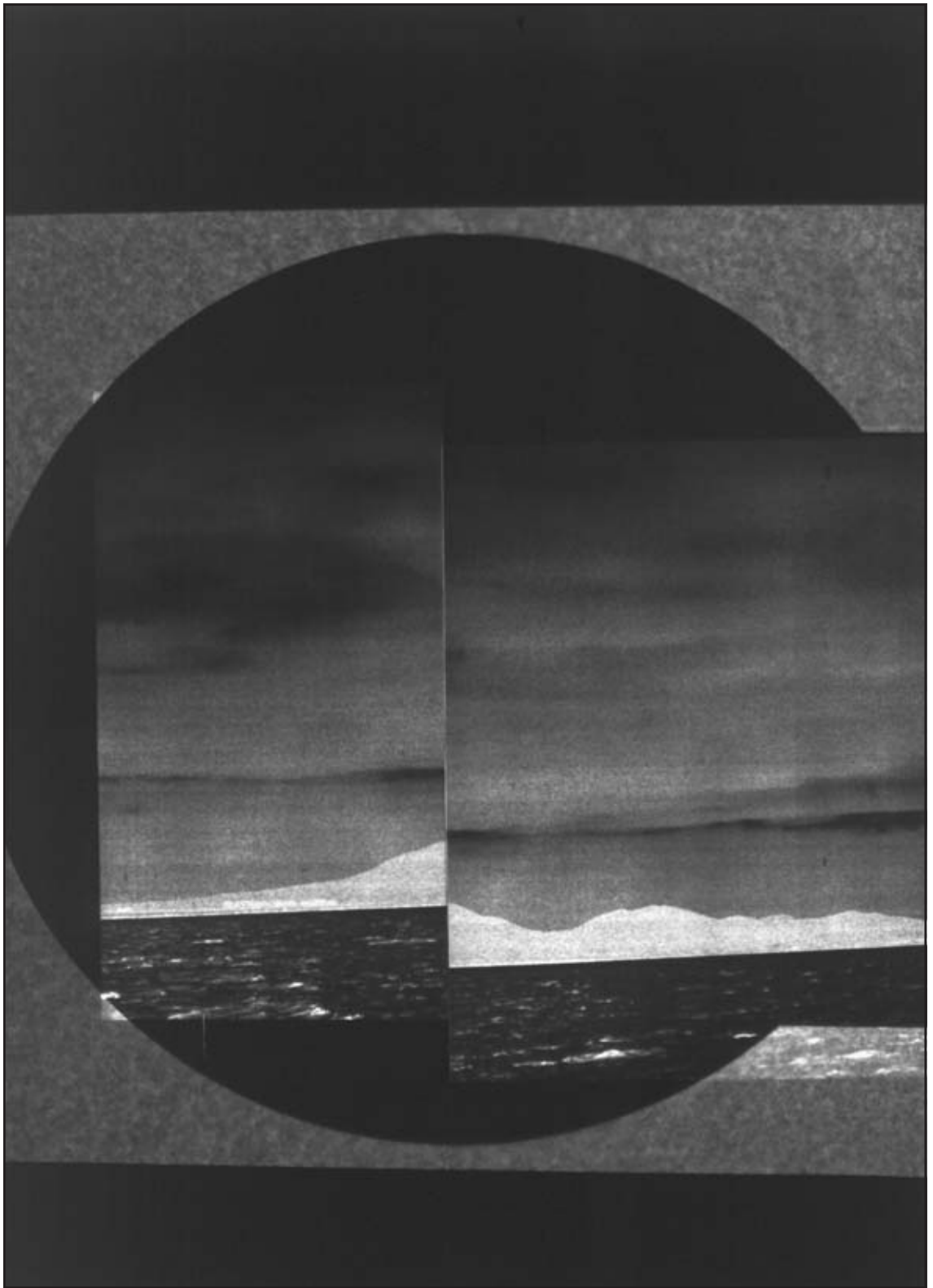


Fig. 53 Felicity Spear, *Traversing Space*, 2002, installation (detail), *Sighting*, contact print of paper negative, analogue photograph, 40 by 30 cm, Stephen McLaughlan Gallery, Melbourne.

The grid map configuration of these photographs, both engaged with and subverted traditional readings. I placed mirrors within this grid in which the paintings along the walls appeared, reflected and distorted at various angles. Images in real time and space were captured reflecting back into these darkened fragments. (See fig. 54). This opened up the containing Modernist grid to the surrounding space beyond the frame and invited the viewer to engage in a formal, perceptual game between historical and contemporary notions of space. By connecting the process of mapping to the act of observation my intention was to generate an understanding of the way in which mappings reveals space. Pam Clements writes that:

[Spear's work] explores and interprets the art of seeing ... from the use of optical instruments to the effects of light and reflection.... The viewer is drawn into a spatial narrative that extends over real time and references the past.<sup>59</sup>

### **Coded Space.**

Michael Vale in writing about this exhibition observed that:

[a]s a metaphor for our personal experience of inevitably being the centre of the world for all our orientations, Spear's installation succeeds in underlining the limitations of perception. Our own survival hinges on a system of experiential snapshots which, we hope, act as representational clues of the larger world beyond our view ... the artists [is] ... a perceptual codebreaker, disseminating arcane or cryptic information into more digestible forms of communication, acting as a translator of perceptual experience into readable language.<sup>60</sup>

Codes form complex linkages between the past and the present that unpack place and experience, the relationship between the visible and the invisible, the proximate and the distant. Henri Lefebvre proposes that space is always read and understood through codes:

[a]n already produced space can be decoded, can be *read*. Such a space implies a process of signification. And even if there is no general code of space, inherent to language or all languages, there may have existed

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<sup>59</sup> Pam Clements, 'Traversing Space' Reviews in *Eyeline – Contemporary Visual Arts* No. 50, (Brisbane: Eyeline Publishing Ltd., 2002-3), p. 47.

<sup>60</sup> Michael Vale, *Felicity Spear: The Artist as Codebreaker* (Michael Vale, unpublished: Melbourne, August 2002), np.

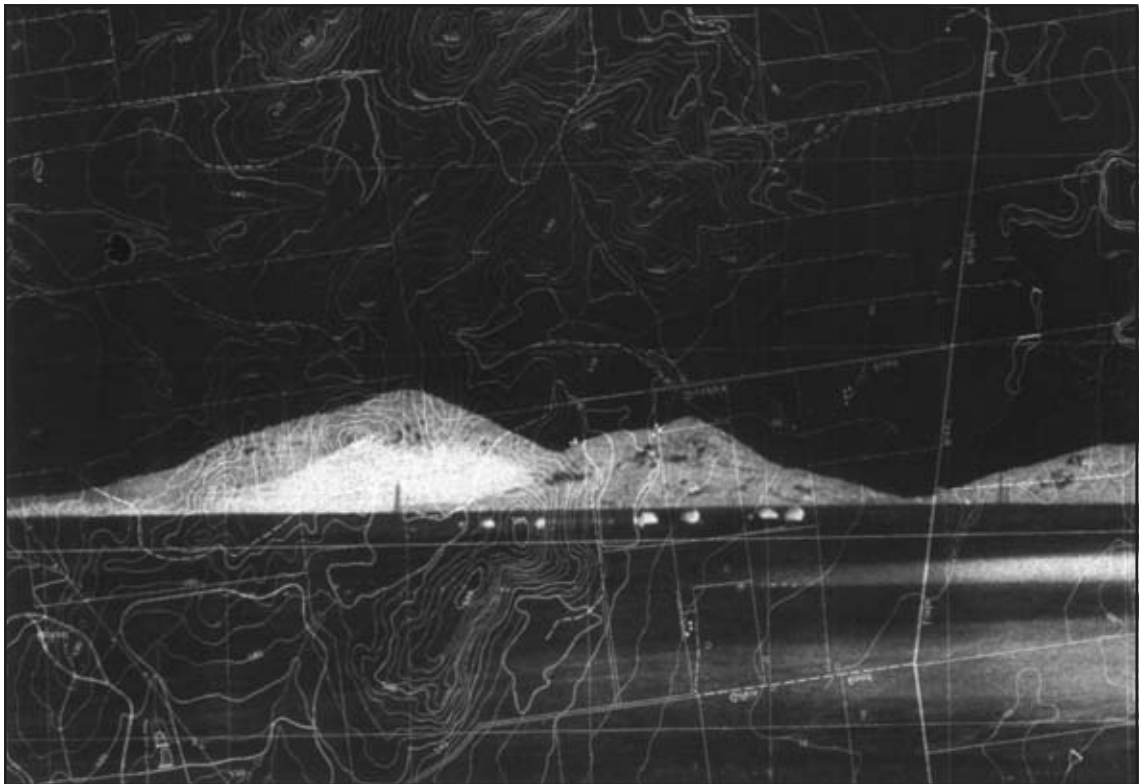


Fig. 54 Felicity Spear, *Traversing Space*, 2002, installation (detail), *Untitled*, contact print of negative analogue photograph and map, 30 by 40 cm, Stephen McLaughlan Gallery, Melbourne.



specific codes, established at specific historical periods and varying in their effects.<sup>61</sup>

In order to discuss the elemental 'intelligence' of the body within the space it occupies David Ryan writes of Henri Lefebvre's description of the spider weaving its web, suggesting that:

the reciprocal relationship between the body and its surrounding space as the movements of the body impact on space and the space impacts on the body – is readable through gestures, marks and traces. There is always movement between the social implications of a space and its formal structuring, between the 'institution' in its broadest sense and the gestures or behaviour it initiates.<sup>62</sup>

Remembering and experiencing space through the relations and interactions between things suggests that the act of mapping, like memory, might be embedded in our genetic code. It is a metaphor for our experience of space: a surrogate of space.

### **Mapping – finding, creating, revealing.**

Wertheim has observed that 'what is universal is that conceptions of space and conceptions of self mirror one another.'<sup>63</sup> The making of this installation was a continuing process of thinking about our experiences as reflections of our own spatial schemes. We are the products of these spatialisations. In contemporary life we are aware that space can be traversed at the speed of light. Victor Burgin suggests that:

[i]n the modern period, space was predominantly space traversed. ... In the "post-modern" period the speed with which space is traversed is no longer governed by the mechanical speed of machines such as airplanes, but rather by the electronic speed of machines, such as computers and video-links, which operate at nearly the speed of light. A mutation in technology therefore has, arguably, brought the *technologism* inherited from the spatial perceptions of modernist aesthetics into line with the perceptions of modern physics.<sup>64</sup>

What has emerged from this understanding has changed the way we think about physical space and interact with technology. We have come to believe

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<sup>61</sup> Lefebvre, *The Production of Space*, p. 17.

<sup>62</sup> David Ryan, 'Transverse Space,' *Contemporary Visual Arts*, ed. Keith Patrick, United Kingdom, Issue 27, p. 35-36.

<sup>63</sup> Wertheim, *The Pearly Gates of Cyberspace*, p. 308.

<sup>64</sup> Burgin, *In/Different Spaces*, p. 43.

now that there is no ultimate and singular vision of space. Rather we are engaged in an open ended process of discovery as we negotiate shifting conceptions of space and time. It is proposed now that all of time, like space, must exist in some sense all at once in an expanding universe of changing shape and form. In the space of electronic communication networks and virtual reality the experience of time has become fleeting and ephemeral. Paul Virilio sceptically suggests that, 'the matter time of the hard geo-physical reality of places gives way to this 'light time' of virtual reality which modifies the very truth of all durée.'<sup>65</sup> David Cook further explains Virilio's view:

[t]he Bergsonian duree itself is transformed into the light interval, into 'exposure' intervals, away from the experience of time in its past, present, future modality. Along with the change in time goes the physical world. The loss of mass/matter, the very stuff of the commonplace, is the fundamental charge against the postmodern cybernetic world.<sup>66</sup>

Like mapping, the practice of installation art is about the absolute relativity of each of its parts. A relationship is activated between literal and depicted space, the space in which the work is placed, and that space which the work makes for itself. A space where nuances and clues embedded in the work unfold in the virtual spaces of site and surface. Cosgrove suggests that the flexibility of mapping now has an affinity with installation, observing that:

[a]rtists today exploit the technical power of computers to construct art objects out of spatially referenced data that can be manipulated across the screen. Mapping has become an installation art.<sup>67</sup>

Such practices have tended to make more conventional mapping techniques of more interest, and it is possible that a revisiting of history may reveal new contemporary readings.

Mapping is a process of creating as well as revealing. The act of mapping has the potential to suggest new propositions and new territories within past and present ones. This reflects the capacity of mapping to re-formulate not just the physical terrain, but the hidden forces beneath the physical surface of

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<sup>65</sup> David Cook, *Paul Virilio: The Politics of Real Time*: [www.ctheory.net/text.file.asp?pick=360](http://www.ctheory.net/text.file.asp?pick=360) p. 20 [accessed 6/5/03].

<sup>66</sup> Ibid., p. 20.

<sup>67</sup> Cosgrove, *Mappings*, p. 6.

a space.<sup>68</sup> If our innate capacity for mapping involves forming reciprocal relationships with our surroundings then it also involves participation in the act of 'finding.' Finding the interrelationships of things in space, and the effects produced by their interaction. Finding such relationships in 'outer space' Paul Levinson suggests is motivated by the fact that:

we go into space to see not only what's out there, but back here. In the case of near-space or space-Earth, 'here' and 'there' are almost in the same place. 'There' is only a slight distance from 'here' from the perspective of the universe... In the case of further outer space, or space further out, we see different things about us when we look back-we see more of the universe.<sup>69</sup>

Paul Virilio has likened living in space to the movements of a dancer. Investigating what he described as the 'oblique function', he suggested that 'every dimension of space becomes a modification of the body ... Living in space is a dance.'<sup>70</sup> The 'oblique function' involved working with slanted surfaces, mobius strips, cylinders, curves ovals and circles, swirling up and down in centrifugal motion. The point of the mobius strip was that it was non-orientable, having no real inside or outside, both sides constituting a continuous surface. Virilio was interested in critiquing what he described as the 'tyranny of the right angle.'<sup>71</sup> He maintained that one could not develop a non-Euclidean architecture for contemporary times unless one engaged with space-time. To explore this disruption of Euclidean space I have been working with object-paintings in the form of tall cylinders for a number of years. These works are circled by networks, strips or rings of light that move up and down the surface. They are marked by the movement of light as it is transmitted, stretched or distorted by gravity. They are frozen in a moment of time but continually spiraling in a circular motion around the object.

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<sup>68</sup> In Leonardo/OLATS – Observatoire Leonardo des arts et des technosciences, Annick Bureaud, in 'Space Art: Defining a New Territory' notes that, "Cyberspace is becoming a new powerful environment for the mind, social relations and constructions, collective intelligence. Metaphors from outer space are sometimes used by artists and theorists dealing with this world: for instance, the disorientation that one can experience in today's Internet Web is compared with the disorientation felt by the astronauts in weightlessness where there are no ups and downs: [www.olats.org/setF3.html](http://www.olats.org/setF3.html) p.1, [accessed 31/05/05].

<sup>69</sup> Paul Levinson, *RealSpace*, p. 72.

<sup>70</sup> Paul Virilio/ Sylvère Lotringer, *Crepuscular Dawn*, Trans. Mike Taormina, (Los Angeles, New York: Semiotext(e) Foreign Agents Series, 2002), p. 36-37.

<sup>71</sup> Ibid., p. 40. Einstein's *Theory of Relativity* shows that time and space are inextricably connected. Time has shape. One cannot curve space without involving time as well.

From the physical parameters of our three dimensional physical and mental space, cosmologists and mathematicians have struggled to provide a way of envisaging in concrete form the fourth dimension, or  $n$ -dimensional space. The artist however, is freer to roam in the territory of non- Euclidean spaces. To transcend such parameters requires an engagement with space, with the material, the temporal and the conceptual. It requires moving beyond literality and materiality into a more abstract space that questions conventions. D. L. Pugh recalls Friedrich Nietzsche's critique of the complacency of perspectival models saying:

[e]ach of us at any instant experiences only a fragmentary point of view, one among multitudes, and Nietzsche encourages us to develop "more eyes" with which to observe the world. While such open ended observation may be disorienting, Nietzsche claimed it was nothing new.

"Are we not plunging continually?  
Backward, sideward, forward, in all directions?  
Is there still any up or down? Are we not straying  
As through an infinite nothing?"

Nietzsche's "perspectivalism" also meant that well-worn perspective devices, - Gothic flattened two-dimensionality, Renaissance three dimensional vanishing points, undulating haptic Baroque physicality, and non- Euclidean hyperbolic space – could now somehow be employed all at once.<sup>72</sup>

My intention has been to find new ways of understanding the relationship between personal experience, artistic practice and mapping processes in order to examine other perspectives and ways of seeing. In this chapter I have discussed the motivations and the theoretical and practical interests that have stimulated this research. I have commented, in a more idiosyncratic way, on the personal influences that my experiences of the night sky have had on the recent direction of my work. In part this has to do with the way in which we use technology to construct and interpret what is described as the 'natural world.' I have written about artists who, in diverse practices engage with the process of mapping to reconstruct space in their own idiosyncratic ways.

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<sup>72</sup> D.L. Pugh, 'Bill Viola, *pneuma*, 1994,' and quoting Friedrich Nietzsche, 'The Gay Science,' (Random House, Vintage Books, 1974), p. 181, in *Searchlight – consciousness at the millennium*, ed. Lawrence Rinder, (San Francisco: Thames and Hudson/California College of Arts and Crafts, 1999), p. 87,91.

Discussion of the way that space and time have been re-thought in light of Einstein's Theories of Relativity, and ideas in quantum physics, have proposed the exploration of non-Euclidean models of space and drawn attention to the behaviour of light. Light has become integral to observational, imaging and remote sensing technologies, and increasingly involved in the mapping of the night sky. It has come to dominate our lives in forms of spectacle or security. In order to understand the way in which we are motivated to map, re-invent and negotiate space, I discuss the possibility for interactions between art, science and technology in a wider field of interests and operations. Finally, by revisiting some of my earlier work in the context of recent Western influences in art, I have attempted to indicate the markers that have pointed me in the direction of my current research.