

University of Wollongong Thesis Collections

University of Wollongong Thesis Collection

University of Wollongong

Year 2003

Exploration without boundaries: virtual
voyages into virtual landscapes

Hilary Frances Rhodes
University of Wollongong

Rhodes, Hilary Frances, Exploration without boundaries: virtual voyages into virtual landscapes, D.C.A. thesis, Faculty of Creative Arts, University of Wollongong, 2003.
<http://ro.uow.edu.au/theses/350>

This paper is posted at Research Online.
<http://ro.uow.edu.au/theses/350>

NOTE

This online version of the thesis may have different page formatting and pagination from the paper copy held in the University of Wollongong Library.

UNIVERSITY OF WOLLONGONG

COPYRIGHT WARNING

You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site. You are reminded of the following:

Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material. Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

Chapter 3

Landscape: Virtual and Real

This chapter examines the similarities and differences between the making or modifying of real landscape, and creating virtual landscapes like those in *Exploration Without Boundaries*. I will demonstrate parallels between making digital landscapes, and Land Art which is a sculptural and environmental art form that developed during the 1970s in the UK and US (Figure 59). These parallels lie mainly with the conceptual processes which, when creating terrains and 'earthworks' in virtual space, are similar to those involved in the making and documentation of sculpture, set design, architecture as well as Land Art.

The chapter begins with a detailed historical description of Land Art in its cultural context. Two case studies highlight the more problematic aspects of the connections between the real and the virtual in relation to *Exploration Without Boundaries* and emphasise those differences especially pertaining to the physical aspects of production, as well as eventual documentation.

Land Art is of primary importance in that it has a commonality with the construction of virtual landscapes and, like Land Art, virtual works do not necessarily need to exist within the confines of the traditional gallery system. It is an interesting proposition to align *Exploration Without Boundaries* with a parallel body of work in the physical world that involved the moulding and construction of artefacts within landscape.

Finally I provide examples of virtual landscapes reflecting Land Art, produced by Eric Wenger in 1988. Wenger originated the landscape creation software that became known as *Bryce*, which I chose as the preferred application for constructing the environments in *Exploration Without Boundaries*.

Figure 59. James Turrell (b. 1943)
Roden Crater, near Flagstaff, Arizona.
Source: Beardsley 37

3.1. Brief Historical and Cultural Underpinnings of Land Art

Gilles Tiberghien states that: “ *At that time, (the end of high modernism, at the beginning of the 1960s) art seemed to have reached its end, as if put to sleep ... the opinions of the critics were substituted for the practice of the artist, when the passion of life was such that there was no escape except through philosophy. ... During these years, feet and inches were replaced by measurements calculated in miles. ... From these works emerged the feeling of a possible yet definitive separation from the art world*” (9) (Figure 60).

Figure 60. De Maria (b. 1935), *Lightning Field*.
Source: Beardsley 61

Brian Wallis (Kastner and Wallis 25) also describes the influence that contemporary politics had on the philosophy and ecological concerns of the emerging Land Art artists as having taken the form of the popular protests against war, the nuclear threat and environmental pollution and degradation. Suzanne Lacy highlights the positive consequences of how public art in the wider environment, outside the gallery system can raise awareness of social concerns such as poverty, AIDS, greed, and imperialism among other human problems (32).

Figure 61. Robert Morris *Observatory*, 1971. The Netherlands.
Source: Beardsley 27

Leaving the confines of the gallery system and the strictures of high modernism, the Land Art movement beginning in the United States during the 1960s, aimed to do something on a much grander scale with artists becoming much more physically involved with the landscape. The first major Land Art artists were Robert Smithson (1938–1973), Robert Morris (b. 1931) (Figure 61) and Michael Heizer (b. 1944) (Figure 62) all of whom produced monumental sculptural forms in the vast deserts of Nevada and Utah. Tiberghien records that Land Art artists saw their work as sculptural and that they did not regard themselves as members of a particular contemporary art movement, however, Land Art is the convenient and preferred term for categorising those works that are made on, and with, landforms in the wider environment (13).

Figure 62. Michael Heizer *Complex 1/City*, 1968.
Source: Beardsley 15

Many examples of Land Art exist on the borders between art, architecture and archaeology. Working with, and on the land appears to draw out a dialogue with the historic or even prehistoric past (Figures 63 and 64), evoking mystical memories of long forgotten ancestry, while at the same time, embodying esoteric theories and philosophies (Figure 65).

Jeffrey Kastner reflects: *“the individual’s connection to the environment is primary ... we worship and loathe it, sanctify and destroy it ... We aspire to leave our mark, inscribing our observations and gestures within the landscape, attempting to translate and transgress the space we find within which we find ourselves”* (11). David Bourdon interrogates the seemingly intrinsic knowledge that underpins the modification of the landscape by people throughout history, providing numerous land modification examples in the form of military ramparts, terraced farming as well as megaliths and spaces used for worship, ceremony and catharsis (10).

The archetypal resonates with prehistoric and ancient forms: spirals, barrows, mounds, mastabas, ziggurats (Figure 66) and drawn lines in the desert. Land Art artists do not merely emulate these forms, but draw from them reflections regarding time, existence and the human condition. For example, Jean-Marc Poisnot has noted the significance of both the labyrinth (Figure 67 overleaf) and the observatory (Figure 68 overleaf) in that they are complementary structures, and that both represent the exteriority and interiority of place and consciousness, past, present, and future (qtd. in Tiberghien 152).

Just as Land Art artists are sometimes involved at the periphery of geology and archaeology (Figure 69 overleaf), artists using digital and virtual technology have made considerable contributions to the recording,



Figure 63. Cave dwellings, Gôremé, Turkey.
Source: Rhodes, H. 1974

Figure 64. Stonehenge
Source: Kastner 191

Figure 65. William H. Jackson (1843-1942), *Mountain of the Holy Cross*, 1873.
Source: Beardsley 9

Figure 66. Ziggurat, Sammara 'Iraq.
Source: Aramco World 42/6/20

Figure 67. Richard Fleischner (b. 1944)
Sod Maze, h. 46cm ø 35m, 1974.
Rhode Island.
Source: Kastner 62

Figure 68. Hannsjörg Voth (b. 1940)
Himmelstreppe (Sky Stairway) 1984.
Morocco.
Source: Weilacher 57

preservation and reconstruction of archaeological sites by participating in the making of substantial historical and geological documentaries (Figure 70). These productions often have a high public profile and are now commonly featured in mainstream media. A recent example is a QTVR reconstruction of a painted wall in the amphitheatre at Pafos in Cypress, that was made up from photographs, a painting and a 3-D model of the arch.

Figure 69. James Pierce (b. 1930) *Triangular Redoubt*, 1971. Pratt Farm.
Source: Beardsley 66

3.2. The Documentation of Land Art

The only way that Land Art could be widely seen and experienced was paradoxically, back in the traditional gallery system in the form of copious documentation, photographs, film, video, location maps and installations because the originals were very inaccessible and often far too large to view in their entirety except from the air. Some earlier Land Art projects made in the desert were funded by the Virginia Dwan Gallery, which

Figure 70. Image from an educational geology video for the BBC developed in *Bryce*.
Source: Garrick Webster
3-D World 30/03/01
<http://www.3dworldmag.com/>

Figure 71. Robert Smithson
Drawing for *Asphalt Rundown*.
Source: <http://www.smithson.com>

Figure 72. Smithson, *Asphalt Rundown*, 1969. Rome, Italy.
Source: <http://www.robertsmithson.com/earthworks/asphalt.htm>

underwrote many works by Michael Heizer and Robert Smithson (Figures 71 and 72), the latter whose seminal work *Spiral Jetty* is the first case study (3.3.1) (Figure 73). Therefore, significantly, most viewers experienced the works vicariously in virtual form in the sponsoring galleries (Beardsley 16).

A major part of the concept of landscape, hence most Land Art, is mapping and territorial awareness which usually exists as either part of the documentation or as part of the work itself (Figure 74). Significantly Yoko Ono instructed participants to ‘*Draw a map to get lost*’ in *Map Pieces* (1962–1964) and Stanley Brouwn in 1962 asked pedestrians to draw directional maps (Kastner and Wallis 28).

In contrast to the earth moving activities of those in the United States, British and European Land Art artists considered the act of encroaching on, and of altering the land to any degree, to be a serious environmental concern.

Figure 73. Some of Smithson’s documentation of *Spiral Jetty*.
Source: Kastner 192

Figure 74. Nancy Holt (b. 1938), *Map to locate buried poem*.
Source: Kastner 86

Richard Long (b. 1945) (Figure 75), who is represented in my second case study (3.3.2), believed that photographs and logbooks of a particular journey should be at the core of the work, and that the only modifications to the landscape should be markers of repositioned coloured stones, or up-ended rocks along a chosen path. Like Smithson, Long also brought small items from the trip into the gallery. Hamish Fulton (b. 1946) was even more rigorous in these concerns, and believed that the mapped journey, logbook and photographic material should be the only existing record of the fact that an expedition had been made (Beardsley 42–44). So as can be seen also in the following case studies, documentation is at the heart of most Land Art.

Figure 75. Richard Long (b. 1945),
Walking a line in Peru 1972.

Source: Beardsley 41

Figure 76. Robert Smithson,
Spiral Jetty, 1970.
Rozel Point, Salt Lake, Utah.
Source: Kastner 22

3.3. Case Studies of Contrasting Works by Two Land Art Artists, Robert Smithson (1938–1973 US) and Richard Long (b. 1945 UK)

3.3.1. *Spiral Jetty* (1970) by Robert Smithson

Location and Construction

Spiral Jetty (Figure 76), built in 1970 at Rozel Point, Great Salt Lake, Utah, is a spiral 450m long by 5m wide consisting of Mud, Precipitated Salt Crystals, and Black Basalt Rocks.

This enormous project was sponsored by the Virginia Dwan gallery, requiring two dump trucks, a tractor and a front-end loader, took 292 truck hours and 625 hours of labour to shift 6,783 tonnes of black basalt. The earth was scooped from the beach, the trucks backed up the outline of the spiral, and the material dumped in place (Kastner and Wallis 58).

The site is remote (Figure 77) and almost inaccessible as a recent visitor to the site graphically recounted: *“after 0.7 miles, turn right (just before corral); after three miles you enter onto Promontory Ranch (no turns possible); after 2.5 miles, enter Rafter S Ranch’—but the condition of the road forced us to go slowly, and suddenly tenths of miles seemed like miles. I became disoriented and a little panicked. No one had told me that the area was so completely secluded—there was no one in sight for miles—and I envisioned getting a flat or bursting an oil pan and being stranded out there in the doldrums, beyond cell-phone range”* (Figure 78) (Israel).

Rozel Point is a polluted industrial wasteland, which Smithson describes thus: *“An expanse of salt flats bordered the lake, and caught in its sediments were countless bits of wreckage. Old piers ... trapped fragments of junk ... products of a Devonian industry ... great pleasure arose from seeing all these incoherent structures. This site gave evidence of a succession of man-made systems mired in abandoned hopes”* (Figure 79) (Shapiro and Smithson 218).

Figure 77. Location map of *Spiral Jetty*, Golden Spike National Historic Site visitor center.

Source: http://www.nps.gov/gosp/tour/jetty_directions.htm

Figure 78. *Spiral Jetty* now underwater.

Source: Nico Israel
<http://www.artforum.com>
Accessible from
http://www.firstpulseprojects.net/spiral_jetty/travelogue.html

Documentation and Rationale

As with many works of Land Art, the only way that most viewers would ever be able to appreciate *Spiral Jetty* was by means of documentation: that the work is so well known can in many ways be attributed to the fact that Smithson was also a prolific writer, expounding many interesting theories, making him much sought after in the art world. He had a fascination with destruction, cataclysmic events and entropy.

Smithson describes his choice of landscape in almost poetic vein, a remote and inaccessible derelict area on which to build a work: he may be alone, or most probably accompanied by some labourers, a photographer, friends and helicopter/light aircraft pilots, yet the impression is given that he is the traditional lone conqueror, the explorer, exploiter of lands against all odds. Anything or anyone else is incidental to it. This all has a sense of drama, the destruction and changing of the already devastated land. There is nothing gentle about it, the violence of the descriptions, the work of the trucks, the way the land has been laid waste – a complete negation of the picturesque and an infatuation with entropy.

Spiral Jetty was inspired by the site itself which was a place of failed oil mining relics. Smithson's records show an awareness of the geological, and historic significance of this place as he states that not only does the spiral shape (Figure 80) imitate the local topography, but also invokes a Spanish myth of a whirlpool in the centre of the lake, which purportedly connected to the ocean via a subterranean channel. Smithson was also aware of the parallel with the microscopic spirals occurring in the crystalline form of the salt as he describes: "*The Spiral Jetty could be considered one layer within the spiralling crystal lattice, magnified trillions of times.*" This innate understanding of the fractured features of landform almost anticipates the discovery of the fractal algorithms later employed in realising virtual geology (Figure 81), as well as the self-similarity of large and small features in the landscape: "*A bleached and fractured world surrounds the*

Figure 79.
'Abandoned hope...'
Source: Nico Israel
<http://www.artforum.com/>

Figure 80. Robert Smithson
Spirals
Source: <http://www.smithson.com>

artist. To organise this mess of corrosion into patterns, grids and subdivisions is an aesthetic process that has scarcely been touched.”
(Beardsley 20).

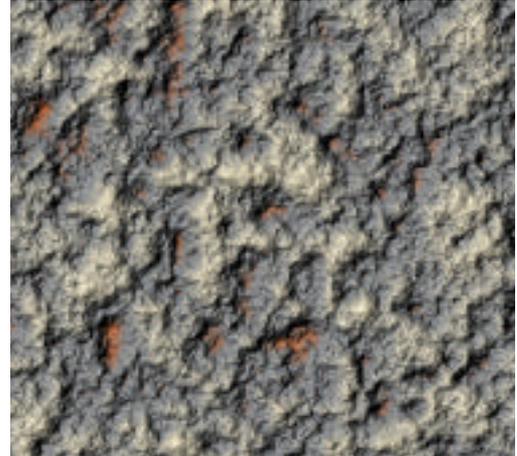


Figure 81. H. Rhodes. Fractal texture for surface of terrain, 2002.
Source: Rhodes, H. 2002

Figure 82. Richard Long
California Wood Circle, 1976.
Source: Beardsley 44

3.3.2. Richard Long (b. 1945), *Pick Up Sticks* (1980): a Study in the Art of Travel

There are considerable differences between the large scale works of Smithson and that of Richard Long, a British Land Art artist who expressed his love for the landscape by walking in it, and whose great concern for the environment is borne out by the fact that his art is constituted by the records, photographs and maps of his journeys over land, rather than by invasive changes to the land itself. Long’s art also involved the installing of some smaller items in galleries, such as rocks and twigs gathered from the walks. Long’s changes to the environment were more incidental: along the journey he often rearranged detached elements like branches, stones, and he constructed cairns that marked his presence in the region (Figure 82).

Long's interest in the global environment is demonstrated by his having set out on walks in many parts of the world, through desolate places in Scotland (Figure 83), the Himalayas, Peru, Bolivia and North America. In the manifesto-like *Pick Up Sticks* (1980), Long describes his intimate involvement with these places and what connecting with the land means to him.

Figure 83. Richard Long
A Line in Scotland Cul Mór 1981.
Source: Beardsley 43

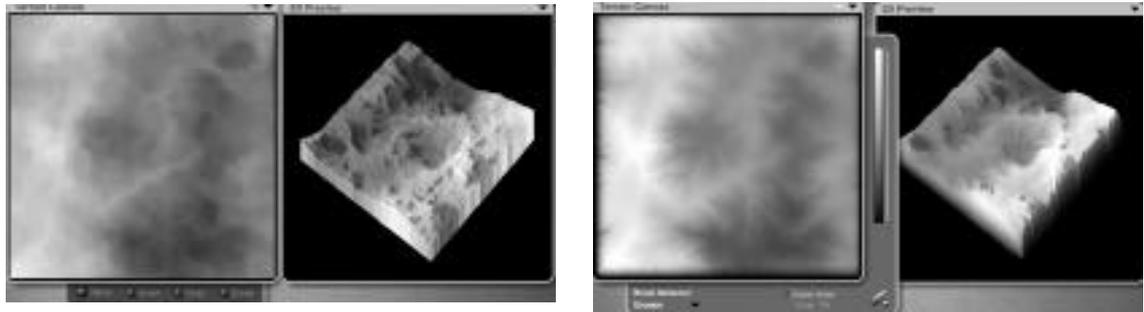


Figure 84. Sculpting the land: simulating erosion in *Bryce*, which may be animated over time.
Source: Rhodes, H. 2002

3.4. The Digital and the Physical – Creating Virtual Land Art

Exploration Without Boundaries is a virtual environment, and yet in some ways the discovery and manipulation of virtual worlds has some parallel experiences when interacting with the real world, for as the artist becomes subsumed in the worlds of texture, atmosphere and landscape, the scene begins to unfold through endless manipulations, changes and alterations as the desired forms begin to emerge (Figure 84). Although one can never fully experience the wide-ranging tactile relationships the traveller has with the land, the virtual artist can still have the distinct impression of becoming part of the scene and begins to live in that environment as if in a dream, no less fantastic than Smithson's dramatic visions at Rozel Point.

Designing the appropriate landform for a particular virtual world is not unlike looking for a suitable site in the real world; it is serendipitous, yet deliberate as certain terrains may be chosen at random or from a palette of different fractals to give different types of attributes.

The earth may be moved in the virtual world, but not with trucks, and there may never be a place to visit as everything in the virtual world is ephemeral and could be lost forever, a place of bits and bytes on a disc in a computer but, as in Land Art, full documentation can bring a site to life in the gallery.

Working with digital media may at first appear to preclude the sheer dirt and sweat involved in the real physicality of construction. How can one compare the experience of dredging lakes and excavating rock with that of sitting on a chair in a room, facing a monitor, typing commands and moving an input device around for hours on end? It would thus appear that the process of digital entry to create virtual landscapes would be the antithesis of going out and interacting with the wider world.

However, the commonality between these seemingly opposed media lies in the conceptual or design ideation stage, which is at the kernel of the creative process. This process itself is vital to both Land Art and virtual landscape moulding. Also the initial visualisation stage is very similar for both media, only the final output being dependent on different resources, technology, practical skills and technique. There are striking similarities in the conceptual realisation of Land Art artworks and virtual worlds. Although Land Art may present all magnitudes of unprecedented physical problems, both Land Art and virtual art demand the discipline of being able to plan and think in four dimensions. Apart from the three physical dimensions of space, the element of time affects everything including our survival in the real world, as well as determining the length of time-based events in the virtual.

As demonstrated by Long's walks, the making of Land Art can in some cases be a lonely activity carried out in remote places, but large sculptural Land Art projects usually entail the involvement of considerable numbers of people. In contrast, I produced *Exploration Without Boundaries* alone, with all concept development and production of the digital work being carried out completely unaided, taking place in a state of suspended disconnection from real surroundings. This is how I like to work, with little or no outside intrusion during the creative process.

Finally, one very useful mutually positive relationship between the virtual and the real, is that Land Art and public works may be realised in a virtual context so that potential problems (Figure 85) may be addressed prior to construction, and in a similar vein, virtual imaging is now a popular and non-invasive way of realising archaeological sites as described in 3.1.

Figure 85. Richard Serra (b. 1939), *Tilted Arc*. Cor-ten Steel, 3 Plates, 4m x 40m x 65mm. Removed after local protestations. Source: Beardsley 129

3.5. Viewing Virtual Places and Land Art

Land Art has been categorised by Tresilian (Ascott 170) as being open in form, i.e. one of its special characteristics is that it extends beyond the human cone of vision in all directions. The spectator is completely surrounded by the environment, rather than having a limited field of view provided by a 2-D wall painting or static projection. Paradoxically, in certain 3D applications, apart from objects having the usual virtual depth in cubic Cartesian space, there is a provision for the inclusion of infinite planes in any orientation; this also means that the scenes themselves may extend infinitely in all directions.

In *Exploration Without Boundaries*, I have simulated this effect in the virtual realm by constructing 360° cubic dioramas of the landscapes, yet it is ironic that the viewer sees at any one time, only a section of the entire wrap around image on the 2-D plane of the computer monitor. However, many become fully immersed in this simulated 3-D world that appears to have a depth beyond the small screen.

It is also quite simple to output a stereo print from any 3-D application by rendering two images of a given scene from slightly different camera angles, the stereo effect seen by just crossing one's eyes. I have already successfully generated stereo prints and movies from *Exploration Without Boundaries*, which would be very effective if projected using virtual reality technology like *The Wedge* (2.5).

3.6. Eric Wenger (b. 1960), Land Art and Bryce

Eric Wenger was the first to design a high quality landscape imaging application with a graphical user interface for the Macintosh, the prototype of *Bryce*. Born in France, Wenger was the son of a geologist and having travelled through many interesting terrains and landforms, he later saw an opportunity to create realistic landscape images on computer (Kitchens and Gavenda 9–10). Residing in California, Wenger now develops synaesthetic software for the interaction of visuals with sound for his company, *U&I Software*.

In 1998, Wenger displayed on a web-page a set of six (five shown here) engaging 3-D virtual landscapes recalling work by Robert Smithson, Richard Long, and Christo (Figures 86–90). The scenes were introduced thus: *"I have started a new series of 'virtual' land art installations. All are done 100% in Bryce. I would love to have*

Figure 86. Eric Wenger, *Spiral*, virtual Land Art, 1998.

Source: <http://www.metasynt.com/BRYCEART/PAGES/galleryBryceEric.html>

submissions from other Bryce Artists on the same theme” (Wenger).¹

It was these very examples by Wenger that raised my awareness of, and led me to examine further, the parallels between working in the real environment (Land Art) and the making of virtual landscapes.

This was the first time I had read a direct reference to Land Art written by a 3-D digital artist and it is particularly significant in that Wenger chose such a theme. After enquiring of Wenger the reason for his choice of Land Art as a subject, he replied with the following email (August 2001):

“I think they were done in summer 98. I didn't see actual land art pieces, but lots in books. (As you might know I studied in an Art school and did 5 years of Art history) for the little story I took 4 prints of those fake land art images at burning man 98 (Figure 91 overleaf) and buried them partially into the black rock desert dried lake soil after protecting them with transparent plastic. Parts of the pictures were visible, emerging from the ground. It was quite surreal. The “installation” was small and didn't attract much attention. But it was fun. After the burn I buried them completely so they still sit there somewhere hidden in the playa ground. My only land art piece ever, a micro land art piece. Maybe more conceptual art than Land Art actually. Putting little fake land art pictures into a immense real and beautiful landscape as a land art piece in its own. Very perverse.

Figure 87. Eric Wenger, *Stone Circle*, virtual Land Art, 1998.

Figure 88. Eric Wenger, *Spiral*, virtual Land Art, 1998.

Figure 89. Eric Wenger, *Coloured shapes day*, virtual Land Art, 1988.

Figure 90. Eric Wenger, *Coloured shapes night*, virtual Land Art, 1998,

So why did I do these... Of course this work was a little “clin d’oeil” to more serious land art form by the artists you mentioned.”

Figure 91. Burning Man festival from the air – where Eric Wenger buried the prints of his virtual Land Art.

Source: Sterling 194

3.7. Bryce as the Ideal Software for the Creation of *Exploration Without Boundaries*

I became intrigued with the possibility of creating virtual worlds after seeing some outstanding examples by the developers of *Bryce*, notably Eric Wenger (Figure 92) and Kai Krause (b. 1957) in *Design Graphics* in 1994 (10) and instantly knew that with this software, I would be able to realise for the first time some of my dreams in a way that no other medium had hitherto been able to express.

Figure 92. Eric Wenger (b. 1960), *Rocks and Ice*.

Source: Bryce II CD

Making worlds and landscapes in *Bryce* engenders a feeling of primal creation and *Bryce* seems to be the only software program that engenders this illusion. Working with *Bryce*, one imagines that one becomes situated inside a world within the screen where it becomes possible to shape landscapes and landforms, change the texture of the land and drape survey maps over landforms from actual digital elevation data. All of this contributes to an experience of adventure in which both the sublime and unexpected may be encountered. With this software, it becomes possible to experience the pleasure of creating virtually real and alien atmospheric worlds, and to record them with almost the same ease as taking a photograph or depicting a scene in traditional media.

The interface of *Bryce* has been designed in such a way that it gives the artist the tactile impression of sculpting with form and light because terrains are sculpted by painting variations in greyscale to achieve height or depth. Meanwhile, the results can

be monitored in a preview window showing the rotating 3-D simulated terrain that updates in real time during painting. Nearly all of the landscapes in *Exploration Without Boundaries* were made in *Bryce* and complex 3-D models were imported into the scenes from modelling applications. A few of the scenes have been made in a similar landscape imaging software product, *Vue d'Esprit* as this application had the desired atmospheric effects for those particular environments.

In contrast to the Brycean experience, most 3-D software packages do not encourage spontaneous creativity, but tend to elicit a more programmed approach through calculation and data entry, and although these are useful for building complex mechanistic models, the process is more akin to draughting in that the interaction is more indirect, consequently removing spontaneity from the process.

Bryce's fractal based 'deep texture' synthesiser is one of the best procedural texture generators available and with it there is the possibility of producing an infinite variety of grainy, geometric and organic surfaces and materials. The high definition images produced are made possible by the super-sampling of its ray tracing: this is one reason that *Bryce* is deemed a notoriously slow renderer, favouring quality over speed. Kai Krause (Figure 93) considers the overnight use of the computer for rendering purposes as well as a clear description of the power and differences provided to the *Bryce* user:

"Give us your Macintosh while you sleep and we will create a piece of beauty with it.

"... we focused on a feature set with that very assumption: to trade time for beauty. We are not interested in 10 minute renders. ... we are not interested in making cheesy QuickTime aliased tunnel fly-throughs either.

*"Eric wanted **all out war** on the challenge to render as close to realism as he knew how. ... when you discover the secret levels of depth in the catacombs underneath Bryce, you realise how deep he went to make that happen."*

"These are no mere polygons with pictures of rock wrapped around them..."

"This is no sphere with a gradient playing 'environment'..."

"There are no rectangles with stock photograph skies put at the back of your view..."

"This is all different..."

Figure 93. Kai as Adobe *Photoshop* icon.

Source: Bill Nieffeneger, illustrator and author of *Photoshop Filter Finesse*

“...What Eric has achieved is very special. I have used virtually all of the existing 3-D programs out there all the way up to the multi thousand dollar SGI packages. And yet I find myself inexplicably drawn back to Bryce, since it has a soul, a look, a feeling.

“After a while you will be able to tell a “Brycean” sky and you will look out of airplane windows and see the earth as just so much of a rendered sphere with terrains.

“Our beta testers have many times tried to adjust the settings of the reality surrounding them”.

Krause goes on to say that *Bryce* is not all that unique — *“It’s not that Bryce is somehow so unique that everything in it has never been done before. It’s more how it’s doing it all that is so enchanting. Not that it doesn’t have quite a list of truly unique features and proprietary algorithms in there. But I think your enjoyment of the program is going to come from inside: playing God rolling the dice, rolling hills, icebergs”* [emphasis my own] (Krause 10–12).

Although much of Kai’s comments appear to be hyperbolic in tone, almost to the point of fanaticism, all of his comments are valid, and especially salient are those referring to the way that the virtual world builder’s view of the real is changed forever once having acquired a Brycean inspired heightened sensibility.

It can be seen that making virtual worlds allows a considerable range of creative freedoms that are precluded in Land Art. Firstly, creating virtual landforms will never alter the actual landscape unless the work is later developed in the real world, and the virtual landscape can remain in its digital state ‘indefinitely’ and unlike real Land Art, virtual landforms cannot degrade over time *per se*, unless programmed to simulate erosion and other such geological events (all reversible) over time.

Producing digital media consumes relatively small amounts of energy and works can be printed, or put on videotape or film, neither is it necessary to get planning approval for digital works, and the act of constructing in virtuality can be as equally pleasurable as building in the real world. Anything that software permits is possible, so the virtual proclaims the ultimate freedom to create, the digital work being both ephemeral and permanent, hence digital work may reflect and recreate the real by simulation of the practical as well as the impossible.

3.8. Poem: *Pick Up Sticks*

In order to illustrate the parallels between Long's work regarding journeying through the real world and my own travels in the virtual world, I have taken the liberty to paraphrase the text of *Pick Up Sticks* as an adaptation, and set it alongside the Long's original (Kastner and Wallis 242). Long describes his experience of going on these walks, how the walk progresses, his involvement with the objects in the landscape, the forms of landscape and mapping the terrain covered. In contrast, the adaptation considers my parallel experience of creating such virtual landscapes from memories of travel, as a form of experiential re-interpretation of Long's manifesto. Notably, his final stanzas express strikingly similar views to my own and therefore remain unaltered.

The Virtual World: Adaptation of *Pick Up Sticks*, Rhodes

I like complex, reflective, meditative,
quiet, intense art
I like the complexity of thinking
The complexity of texture
I like fractal materials, the infinite choices
Especially the textures, I like the idea
That texture is what the world is made of
I like the arcane twist of a Möbius strip
I like technique with sensibility
I like the way the degree of visibility
And forms in my art are
controlled by serendipity
The fact that it is neither public nor private and
can never be possessed
I like to use the symmetry and asymmetry of patterns Throughout the infinite,
the virtual world and time Through boundlessness and the infinite
Between impossibilities of textures and endlessness
I choose the grid and electrons because
they can do a job that cannot be done otherwise
My art is remembering what it is like to work in the real world
Remembering the varied fractals of the earth's own cloth
My art has themes of texture, memories, motion,
Mathematics, geometry, dreams, places and freedom
My work is about memories,
dreams, distance and place
My work is virtual, illusory and Alchemical
It is about virtual rocks, non-time,
exploration and remembered journeys
My work recalls the urban, the romantic
It is of the apparition of memories in virtual space
The natural world has been
subsumed by the exploitation of
Property and Energy
My work is neither near nor distant
It is all ephemeral
It can be a replicated image and the simulated
Objects are created in an imaginary world
My images are facts from places
Places that can never be visited
but are almost tangible
And the souvenirs are always available on demand
My virtual work can never really be possessed or owned
Only the images recorded may be
The mountains and roads are in common memory

The Real World: *Pick Up Sticks*, Long

I like simple, practical, emotional,
quiet, vigorous art.
I like the simplicity of walking,
the simplicity of stones.
I like common materials, whatever is to hand,
but especially stones. I like the idea that stones
are what the world is made of.
I like common means given the simple twist of art.
I like sensibility without technique.
I like the way the degree of visibility
and accessibility of my art is controlled
by circumstance, and also the degree to which
it can be either public or private,
Possessed or not possessed.
I like to use the symmetry of patterns between time,
Places and time, between distance and time,
Between stones and distance, between time and stones.
I choose lines and circles because they
do the job.
My art is about working in the wide
world, wherever, on the surface of the earth.
My art has the themes of materials, ideas,
movement, time. The beauty of objects, thoughts, places
And actions
My work is about my senses, my instinct, my own scale
and my own physical commitment.
My work is real, not illusory or conceptual.
It is about real stones, real time, real actions.
My work is not urban, nor is it romantic.
It is the laying down of modern ideas in
the only practical places to take them.
The natural world sustains the industrial world.
I use the world as I find it.
My art can be remote or very public,
all the work and all the places being equal.
My work is visible or invisible. It can be an
object (to possess) or an idea carried out and equally
shared by anyone who knows about it.
My photographs are facts which bring the
right accessibility to remote, lonely
or otherwise unrecognisable works. Some sculptures
are seen by few people, but can be known about by many
My outdoor sculptures and walking locations
are not subject to possession and ownership. I like the fact

But exist only in virtuality
My sculpted worlds are virtual objects
Without gross physical labour
I think them and conjure them into being
As an alchemist turns rock into precious metal
The maze is the printed circuit that carries the electrons
Which alchemically change the textures in these landscapes
As an artist I can create worlds and walk in virtual memories
A true understanding of land can never be
As its texture and composition is infinitely self-similar
I may be the first to see
The birth of a virtual mountain
A walk though boundless vistas
expresses space and freedom.
Hilary Rhodes

that roads and mountains are common, public land.
My outdoor sculptures are places.
The material and the idea are of the place;
sculpture and place are one and the same.
The place is as far as the eye can see from the
sculpture. The place for a sculpture is found
by walking. Some works are a succession
of particular places along a walk, e.g.
Milestones. In this work the walking,
the places and the stones all have equal importance.
My talent as an artist is to walk across
a moor, or place a stone on the ground.
My stones are like grains of sand
in the space of the landscape.
Richard Long

3.9. Conclusion

In this chapter I have illustrated similarities between the making of Land Art and constructing landscapes in the virtual world pertinent to the viewing and documentation of both real and virtual environments. Like Land Art, *Exploration Without Boundaries* considers conditions in the real world and raises awareness of ecological concerns. Differences between Land Art and virtual landscape imaging relate mainly to the physical aspects of production.

The development of *Bryce* by Eric Wenger is of primary importance in that with this application, it was possible to construct highly detailed and realistic environments. It is notable that Wenger early on appreciated the relationship between the construction of real worlds and virtual worlds as shown by his adaptation of Land Art in his virtual landscapes.

The following chapter deals with navigation and mapping in the virtual realm and provides an overview of the development of navigational gaming. I also provide a comparison between *Exploration Without Boundaries* and other CD ROM productions.

Endnote

1. Full transcript of email in appendix with initial query.