

An epistolic contextualisation of an art practice that engages with temporality, memory and narrative in relation to a use of contemporary visual technologies.

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Doctor of Philosophy by publication.

Dedication

To My Family.

*I would additionally like to thank and acknowledge all the academic colleagues whose support for my research over many years has enabled and encouraged me to engage in the work that is included in this
Doctorate of Philosophy by Publication.*

I would particularly like to thank Professor Margaret Gardner, AO, Vice-Chancellor of Monash University, who was formerly my Vice-Chancellor at RMIT University and also Professor Paul Gough, Pro Vice-Chancellor and Vice President, College of Design and Social Context, RMIT University. It was their specific support and encouragement that enabled me to do this DPhil.

Finally, I would like to thank my primary supervisor Professor Andrew Spicer, Professor of Cultural Production at the University of the West of England, for his invaluable insight, encouragement and editorial skills.

An Introduction

This documentary and textual material is submitted in partial fulfilment of the requirements for the award of a Doctor of Philosophy by publication. The text begins by indicating a point of view, a point from which to see and contextualise the documented works in perspective.

In this submission I intend to draw together the common threads of a use of narrative and of investigations using technologies, which underpinned a significant proportion of my professional artistic production. This is a selective and focused submission of works, which either share or inform an interconnection of narrative and technologies. The works referred to here have been published, exhibited or demonstrated both nationally and internationally. These are research activities that I have been consistently engaged with for the past thirty years.

It is the intention of this exegesis to offer an explanation and to make a case based on these creative professional works. In doing this I intend to present a coherent thread of original research through my work that demonstrates how these creative works make a contribution to knowledge. The curated works chosen for this submission all interrelate in some way through a narrative reflective approach to a use of technology in new and innovative ways.

The thread of argument within this submission will identify and show the relationship within and between these published works and demonstrate how the works deal with a memory of time (temporality), narrative and the digital or technological.

Initially I wanted to write about my painting. I started as a painter, I continue as a painter and I have done a great deal of painting. Paradoxically, my painting practice remains absent from this submission until the penultimate section. This is because I have chosen to tell a story, through fragments of documentation that encapsulates some of my other enquires. The works within this submission represent an ongoing and consistent interest in a narrative that emerges from living within a time of profound technological change. I have, by an accident of birth had the privilege of growing up in the relative peace and prosperity of post war Western Europe, and have been able to straddle the transit line or prime meridian between a machine age and a space age, between the analogue and the digital. The works contained here start with my departure from the Royal College of Art (RCA) in 1981 and pick up from that point at which I started to make new works, after the completion of my Masters Degree in painting. The Prime Meridian is an appropriate metaphor as my first employment after leaving the RCA was as Globe Conservator at the National Maritime Museum in Greenwich. My place of work straddled that geopolitical line in the sand up amongst the cluster of transit telescopes, the Royal Observatory and Planetarium, at the top of the hill in Greenwich Park.

Chronological list of published works

Diggle, J. (1981) *Arecibo Idiocy* [mixed media and holography].

Diggle, J. (1981) *Helsinki Box* [mixed media and holography].

Diggle, J. (1982) *Belgrano Set (Mayday Mayday)* [wood and holography].

Diggle, J. (1982) *Memory Wreck Picnic Set (High Frontier)* [mixed media and holography].

Diggle, J. (1985) 'Jeremy Diggle', in Wenyon, M. and Gamble, S. (eds) *The Holographic Image. Eight Artists in the Age of the Laser*. Lisbon: Fundacao Calouste Gulbenkian, pp. 33,42.

Diggle, J. (1990) *-69202* [Cosmological model, mixed media and video installation].

Diggle, J. (1994) *Carpet Bomber* [Multimedia digital projection and screen].

Diggle, J. (1994) *Field Glasses* [Installation, Floppy Disc Artists publication]. Dollond & Aitchison, Honiton. Honiton Festival.

Diggle, J. (1994) *Paper Scissors Stone* [interactive multimedia]. Toy Box CD ROM, Video Positive, Liverpool.

Diggle, J. (1994) *Vision* [interactive multimedia installation and printer based output]. Blake's House, The Blake Society,

London.

Diggle, J. (1996) *A Year and A Day* [interactive Web and CD ROM work]. London: Arts Council of England (HUB).

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Diggle, J. *CADE 97* (1997) Directed by [CD ROM]. Brighton: Computers in Art and Design Education.

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Diggle, J. (2005) *Vermeer. Alchemy* [Lecture and exhibition],

Ways of doing (aesthetics as research). Columbia University. Teachers College. November.

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Diggle, J. (2007) *'Apoll8 home'*, Warner%ford blog/Authors notes, 16 November. Available at: <http://www.apoll8.info> (Accessed: 15 October 2015).

Diggle, J. (2007) *Vermeer: A Painter's Theory* [Public Lecture], Blow Festival 07. Massey University, Wellington.NZ. 8 November.

Diggle, J. (2008) *A conversation with Vermeer* [Multimedia Lecture], Professorial Lecture. University of Plymouth. .

Diggle, J. (2008) *Apoll8 and Narvik's Complaint* [Professorial Lecture], Blow Festival 08. Massey University. Wellington. NZ. 14 November.

Diggle, J. (2008) *A Journey to the Moon* [Multimedia Performance Lecture], Professorial Lecture. Massey University, Wellington, NZ.

Diggle, J. (2009) *'Fragmentary Glimpses of Omniana (everything)'*, in Wells, L. and Standing, S. (eds) *Relic*. Plymouth: University of Plymouth Press, pp. 76,93.

Diggle, J. (2009) *The first Moon walk reinvoked. (Luna Firma)* [Performance Lecture], Framing Time and Place. Conference. University of Plymouth. 16 April.

Diggle, J. (2010) *Apoll8llopaA* [Exhibition installation, new media and printwork]. Available at: <http://www.tc.columbia.edu/a&h/arted/events.asp?eventID=7767&m=6&y=2010> .

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Petrogkona, M., Bouma, H., van Dam, B., Libens, D., Depoorter, E. (1998) *Panorama Athens: interdisciplinary workshop october 1997*. Amsterdam: European League of Institutes of the Arts.

Edmonds, S., Sheard, G. and Haddon, C. (eds) (2006) *Goin' Solo*. Vancouver: Or Gallery. (illustration)

Mealing, S. (ed.) (1997) *Computers and art*. 1st edn. Oxford: Intellect Books.

Mealing, S. (ed.) (2002) *Computers and Art*. 2nd edn. Portland, OR: Intellect Books.

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Rombout, T. (ed.) (2006) *The Panorama Phenomenon*. Den Haag: Uitgeverij P/F Kunstbeeld, Panorama Mesdag.

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Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Section 1. A point of perspective

Oct 12.2004.16.57

From: Jeremy.diggle be4tl@mac.com

Dear Johannes:

An Intercepted report from the British Antarctic Survey at Halley Bay indicates the discovery of a suitcase in (poem-frost) colloquial for permafrost.

The yellow plastic case opens out flat and has 4 aluminium legs that can be inserted at the corners to produce a picnic table. Attached to the handle there is a small label inscribed "Memory-wreck picnic-set".

Inside there is a thirteen inch Memorex computer tape, stolen by Howard from the European Space Agency in 1981. This singular theft had led to the failure of the European attempt to launch a two-man crew in 1984 and subsequently resulted in the demise of the European space programme. Another item of interest appears to have been the thirteen fragments of wood removed from Wittgenstein's hut and fashioned into apostles and assorted Biblical characters. These however were represented in the form of a Denysyuk hologram, only visible as 'virtual images' when the sun rose 13 degrees above the horizon.

Oct 11.2004.16.61

From: Johannes.Vermeer. bel8td@mac.com

Dear Jeremy:

Hwæt!*

1: A Point of view.

What have I been doing?

Hwæt! This is the story.

How I feel privileged to have grown up in a time of change, which has allowed me to develop as an artist and to practice in an era that straddles the analog and the digital. In one of my most recent narrative works (*Apoll8*), I develop a central character called Howard Warner%ford who says in a correspondence with this author; -

“All I can say is that I am glad that I started this journey before the personal computer was invented. That I grew up as a member of the last crew to span the ‘before and after’, who were able to think and breathe in a world without digital communications. Life was, I think, more sensuous and tactile, conversational and vivid. I was able to develop a mind which was not cluttered with perverse thoughts from out of the omnipresent-web of interference and noise. I could believe in stories and imagine darkness.”

Howard Warner%ford. *Apoll8 A Journey to the Moon.*

These introductory paragraphs point towards and indicate the underlying and resonating connective strands in my work, those between temporality, narrative and technologies. The fourth interconnectivity, the glue as it were, binding these outputs together and that gives them a three-fold structural relationship of compatibility is a containing framework of memory. This connects the distant things that are identifiable as the works, which interrelate through a kind of internal “String Theory” of memory, and of course I borrow this term poetically, from a theoretical framework of fundamental physics, as if there is something unifying everything. There is also something fundamentally epistollic within this selection of works. They are like messages in bottles, memoranda and pictograms in the sands of time. The epistolary washes through these curated outputs and the works themselves over a prolonged and sustained period of time. These research outputs are metaphorically like driftwood bobbing on the edge of the tidal ebb and flow of my practice. These manifestations, the artefacts, the engagements, have washed up like memory-wrecks temporarily stranded on a variety of distant shores. If, to extend the metaphor, consideration is taken into account for the time over which I have made and thought about these narrative works as an ebb and flow across a temporal ocean, then my outputs are a kind of flotsam and jetsam, drifting memory-wrecks, that have come to rest or have been stranded on these shores. These boundaries of an ocean of thought and actions are at once distant and remote but also closely bounded and connected by narrative, technology and

temporality. Within these works there is a web connecting everything across the constant background of a passage of time. An analogy, a technological parallel to this, would be our daily connectivity in our contemporary terrestrial world, by cable and wireless, fibre optics and digital telecommunications. Here we are rarely entirely alone and we find ourselves increasingly having to occupy more than one place at one time. Although a lot of what I have done and continue to do is not included here, much of my documented evidence-submission can be categorised as a selective collection of fragments of everything.

Because most of my art work that is represented here is narrative and derives its origin from internal dialogues and conversations that arise from using and engaging with digital and time-based technology, I have chosen a strategy within this exegesis to incorporate a series of epistollic exchanges as headers to each section or relevant descriptions of the work. The particular nature of these epistollic conversations evolved from a number of lectures, in which I have used the device of a correspondence with Vermeer as a vehicle for externalising some of my inner thoughts, as analogous references to the dialogue that exists within my own mind, about the impossibility of being in two places at one time.

1.1: This is the memory structure.

My work weaves a narrative through time, both in resistance to and facilitated by technology. Technology in my work has been used primarily as an investigative tool, an area of

adaptive language, in short a means to an end and a medium or vehicle to carry meaning. And this meaning is both reflective of the technological medium and existentially co-dependent upon the conceptual possibilities of technology as a vehicle for memory. Much of my work could not and would not exist outside the technologies. Aspects of technologies have also become the subject of many of my works, as memory of technology, as technology of memory and as a physical manifestation of a technological epistolary narrative of my times.

When a memory surfaces at the forefront of my consciousness and appears in focus, what I term a memory-wreck metaphorically washes ashore. The memory when it has been translated into a manifest object has become temporally stranded and fixed for a period of time. The manifest work is a point of definition, a documentation of it at that point, but the idea and the content do not necessarily remain stranded like the artwork and can be set adrift again. And, like anything remembered but released, it may, eventually, over time arrive somewhere else, mutated and modified by its own remembrance and become washed up once again, to be fixed in a new interpretation, for a duration, as another piece of work. This position of memory in my work takes as a premise the idea that a thing remembered is a thing altered by the very act of remembering. For the sake of simplicity within this narrative and epistolary exegesis I am choosing to identify three closely interrelated structural anchor points within my practice, against which I believe the selected outputs all

correlate in at least two and often all three ways.

1.1a: A memory of time. (A time of memory)

This is the narrative of temporality when subjected to the invention of the imagination and made manifest in both subjective and objective actions through time, becoming the stuff of meaning, becoming the content of the art.

1.1b: A memory of narrative (a narrative of memory)

In my work when a story is told, a story is remembered and the original narrative may escape or be altered through the transmuted form of making and telling, but the shell or exoskeleton of the original remains. Much of my work relates to the physical by-product of the telling of a narrative through a technology. I am not only interested in the communication of an idea or a message through narrative, but in the transformation that takes place in the process of communication and across time.

1.1c: A memory of technology (a technology of memory)

The use of a technology within my work that both creates the capacity to carry meaning forward and reflect upon that technology's capacity to contain and facilitate the retrieval of the meaning in my work. These works sometimes predict and work within certain technologies to contain a trace of themselves as the technology falls behind its avant-relevance to the moment. This is particularly so in relation to failing or altered memory as exemplified by digital technologies that

outstrip their capacity to recover their own data, as new iterations and versions of hardware and software limit the capacity for archival retrieval. When these three elements work effectively, this enables the artist and viewer to act upon the information over time. Through making art, I have found a vehicle by which I can externalise or represent a memory and I have used my art practice to create works, which encapsulate a memory of time and narrative, which utilises the emergence and early adoption of technologies that have the capacity to carry or contain memory. A technology of memory generally also contains within itself the three additional elements of registration, recording and retrieval. These are the building blocks of a technology of memory. Registration, which is a means of encoding information through perception and physical encounter that enables the transition of stimulus in the outside world, both physical and chemical to be transmitted to our senses and recorded. Recording, which requires the storage of the registered information to be made available for retrieval and recall. And lastly retrieval and recall, the means by which we become conscious of the memory, or automatically and instinctively deploy the stored information.

1.1d: Chronological sequence.

The contextualising narrative outline descriptions of the works contained here, within this submission, are presented in closely related clusters of chronological sequence and assume the three elements of interconnectivity as previously mentioned.

A memory of time. (A time of memory),

A memory of narrative (A narrative of memory),

A memory of technology (A technology of memory).

I take the position that at least two out of three of these elements are contained within each cluster of the works cited in the exegesis. There are clear connections and synergies between these works and as time has passed within my practice some works or clusters of works could easily be described as having elements of interdependency. It would be quite possible and maybe even wise to change the sequence of the description of many of the elements of these individual works, to alter the chronology, to overwrite the memory. However I feel that it would be a conceit to construct multiple navigations of the works based entirely on hindsight within the context of this exegesis, which attempts to present the works objectively and not to create a new work of fictitious connections. I have therefore chosen to place the works in a close chronological sequence, so as to make the developmental journey through these works as transparent as possible for the reader/enquirer. In section (2) of this submission, following on from this section, I will occasionally embed navigational links that I feel are appropriate to enable key themes, interconnectivity and emergent interdependencies to be linked outside of this chronological textual sequence. Having said all of the above, there has inevitably been some slippage between times and sequence in the compilation of this simple text, which has arisen through an attempt to cluster together some

works that share significantly more thematic, formal or technological characteristics than others.

In addition to the evidenced works under consideration within the following selected and sequential portfolio, there is much which remains untold and many additional works that simply have to be cast adrift from this process. However I have included some images and references to other pieces as the following sections unfold. These are not included as a diversion but as part of the background radiation and context demonstrating that there are other dimensions that inform these selected pieces.

* “Hwæt! We Gar-Dena in gear-dagum, þeod-cyninga, þrym gefrunon, hu ða æþelingas ellen fremedon!” Anonymous. First line of the Beowulf.

Section 2. The scope of the submission

Oct 12.2004.16.61

From: Jeremy.diggles@plymouth.ac.uk.

Dear Johannes:

Designs and a plan for an astronaut sarcophagus came to light in the house of a former NASA employee Chuck T L St John. Chuck had worked on the project from the beginning. The small portable version shown here was first deployed in 1969. This unofficial photograph shows an Apollo astronaut (probably Armstrong) carrying the coffin on the Moon. It is believed to contain the ashes of a number of astronauts. The coffin design is based upon a precise geometry and can therefore be expanded to contain complete remains or samples of any size.

The plans described have been removed from his home and a franchised company has rendered C.T.L St. John for interrogation.

...Further to this Johannes, I must reiterate that I can't include everything. It would be pointless. There are the paintings, the performances and exhibitions that, like so much peripheral detritus, accumulate around a practice. You have left so very little, not even a drawing has survived and we still speculate on how you did it. I have my own theory on which I

have spoken at too great a length, in too many far flung places, to very small audiences. But still I keep the faith that you didn't use a camera. I know the women are your wife and your daughter and that the letter remains the same. Your small intimate paintings are meant to act as reflections of the interior and in creating these I know you painted those very same reflections.

2: The memory of time. (a time of memory)

This is the temporality and it is both mundane and profound. In these works I take the position that every memory remembered is reformed and altered. The making of the work, the act of remembering, alters everything subtly. Remembrance, less we forget, marks a distance between an event and a future place in time and space, between a point in time, the moment of becoming and the refreshing. My narrative of a memory of time is predicated upon there being a blurring of the borderline between false, modified and actual memories. These works share in common much to do with that apparent tipping point 50/50 on the grey scale, 50K between a black and a white. But also the very act of making in real time, in the moment, is in itself a time of memory through a subjective and reflective action, where the act of conscious making brings about a dialogue of reflection back upon itself through the act of making. Mark making influencing mark making, words and images affecting order, composition and meaning.

2.1: The memory of narrative (a narrative of memory)

Stories told and retold. Stories remembered and reformed again and again in the telling. As with much art practice, my work involves transformative processes. Ideas and narratives are both invented and reformed through a process of making, which changes and evolves intention through the almost inevitable response to materials and occurrence of building, through a reflective response to the making of marks and construction of forms. There is a direct correlation here with the subjective reflective actions as mentioned previously as a time of memory. More centrally the making of meaning in my work involves the making of memorial-narratives that open out a telling of the story. These works narrate, witness and reflect an essence of their memory origins, often revealing or inventing memories that have become lost or amended amidst the inevitable noise and disturbance of the passage of time. So, what is the narrative of memory within these works achieving? The works manifest the memory; they become in some way the discarded exoskeleton of the narrative of witness; a shed skin, a trace. The works embody a narrative of memory and their very existence counteracts forgetfulness.

2.2: The memory of technology (a technology of memory)

My work is associated with and primarily informed by a subjective desire to work with the available contemporary technologies of my time, but particularly technologies that have emerged as tools for visual and artistic conceptual enquiry. I do however have a greater subjective than objective

engagement with these technologies. It is within the aspect of technological memory and as a result the memory of technology that I am particularly drawn to the interdependent aspects of registration, recording and retrieval. Here, I am engaging in the experiential knowledge that to register, record and retrieve by technological means, can, in itself, alter what it is that you record and change the memorised information through the act of retrieval.

Registration and encoding through technologies of time-based phenomena such as sound, movement and light, along with meta-data and the potentials of retrieval through recording, have developed into mixed and multi-media interactive works. These fragments of everything, which the technology enables as a tool, are supplemented and delivered through retrieval and recall systems that have influenced the outputs and the ways in which some of the works are interacted with or used. These instances of retrieval have formed aspects of the nature of the enquires presented here as art works in documentation.

Much of the work presented is made in the context of the fallibility of retrieval and is sometimes predictive of, or directly responsive too, problems of retrieval and recall as well as the space and time between transmission and our sensory registration. For instance one of the great ironies here, for me, is that much of the work that I did in the early days of multimedia has become impossible to access through upgraded iterations of the software and hardware. The manufacturers and developers no longer support earlier operating systems

and programmes. The work now requires an archaeology of retrieval and often alternative technologies to view or experience the original work, and in so doing alters the work and recontextualizes the conceptual content.

Within the scope of this exegesis I generally want to avoid autobiography, but I do recognise that the works inescapably encapsulate much that is also autobiographical. However, I hope the works themselves carry sufficient ideas to transcend the mundanely, autobiographic inevitability of just a reflective practice, and that these works and ideas communicate something of their complexity of narrative memory through technology in time.

At the beginning of the introduction to this exegesis a character creation of mine writes to say that he is glad to have been born before the time of the personal computer, to have grown up in the analogue age. The character is Howard Warner%ford and he goes on to express that he is also privileged to span both the analogue and the digital, to have the opportunity to place one foot in each camp. It should be explained that the original Howard Warnerford evolved as a central character in my first online hyper-text narrative, which was called the *Salmon Fishing Woman*. Howard Warnerford had a job; he was as curator conservator of globes at the National Maritime Museum in Greenwich Park, the home of the Prime Meridian. Warnerford's character evolves through a number of iterations and reappears as central to a recent work called *Apoll8*. By the time Howard Warner%ford reappears in

Apoll8 he has acquired the (%) between Warner and Ford. As he says in the text of *Apoll8*, he has become 60% Warner and 40% Ford. This character is a prime cypher for the carrier of meaning through temporality, narrative and technological memory in my later work. He is of course very close to being me.

2.3: A brief and only autobiographical statement.

“Give me a child until he is seven and I will give you the man.”

attributed to the Jesuit Francis Xavier.

My father was a research chemist at ICI. When I was small it was still the early years of the Cold War. I can remember the day that the washing wasn't hung out at home because of the Cuban missile crisis. These things defined the meaning of events in my early years. The first memory that I have, in as much as I am sure that this is true, is a memory that whilst on holiday at Swanage in the summer of 1956, my eldest brother was locked in a play hut by my middle brother. I was only eighteen months old and can't possibly have anything but a received memory of the drama that unfolded; my memory has been received through a retelling of the event. Then on my first day at Sunday school in 1959 there was a boy that I made friends with but I would never see again because his father died in an industrial accident at de Havilland. One of my other early memories is that of the sound of the Blue Streak rocket engine being test fired at de Havilland. I could hear it from the back garden of the house that I grew up in, in Welwyn Garden City. The Blue Streak, which was developed to be a

delivery system for the British nuclear warhead, had a colour code designation blue in keeping with other cold Cold War rainbow codes for weaponry in use at the time. The Blue Streak would eventually become a primary research development vehicle for one of the rocket stages of the European Space Agency's efforts to develop launch capacity in the later 1960's.

In these recollections, as with much of my creative work, I am an unreliable narrator. But these are the facts that surface in my memory and these are the memories that I carry with me and I know them to be true. The earliest false memory, one that I can identify as a fictitious self-invention, is one of a parachutist landing in the same Welwyn Garden City back garden where I could hear the Blue Streak engine, on a Sunday afternoon, in the summer that I was four years old. But this false memory became my first narrative and although I know it never happened it may as well have.

The temporality of my work is naturally closely connected to the timeline of my life experience and much of the content of the work is reflective memory. Some of the work is re-invented memory and some manifests false memory. The retelling and act of remembering recreates memory and subtly changes the narrative of fact and place as stored in the repository of the self. The work that I make becomes the evidence of fictions and the product of experience.

As a child I was fascinated by time and by time keeping. I worked with time, with its measurement, by experimentation,

counting backwards and forwards. I could fix broken watches and I designed gyroscope driven aeroplane detectors that swung as pendulums from the washing line in the back garden. I was fascinated in the rhythm of the week, the regularity of the bell and whistle at infant school that denoted periods of assembly, play, class length and home time. My understanding of the temporal advanced and changed also with my first telescope, which was given to me on my seventh birthday in 1962. I had by this time become an avid and somewhat obsessive fan of the space race. My two elder brothers both had microscopes for their seventh birthdays. My present, however, was a liberation from the bounds of earth, at least in my imagination and I could look up and out to an infinity rather than down and inwards to a pinpoint of stuff. For me this was profound and enabled my imagination to develop narratives of space and time. I didn't understand then that infinity stretches in both directions.

At home, the narrative of time passing meant laundry and cold meat on Mondays, through to white fish on Fridays, shopping trips into town on Saturdays and roast meat followed by the weekly bath on Sundays. There were of course the regular parental arguments that would kick off like clockwork every Sunday afternoon. Watching the new electric clock on the cooker in the kitchen and the standard gift of a watch-of-my-own for my eighth birthday and reading about radioactive decay, I would move into the year of 1963 fully primed and ready for the arrival of the Beatles.

Section 3. Mixed Media Holographic Works

Monday, 22 March 1661 From: Johannes.Vermeer.

bel8td@mac.com

Terrific like a lion....

Misheard, I always thought your name was Jez, but now you've gone and changed your name again and taken everything we ever owned.

I'm wondering, should I stay or should I go to Upper Street in Islington, where the hope is anchored, ...feeling good down by the red light of the Island Queen?

Today, in chalk, "*Cosmic Anti-dust*", I have scribbled a message to you on the wall that divides my house from his. Regardless of the gentry who will follow and have gas and electricity and plant their plane trees, "it's there for you to read".

... and they will say I never left drawings.

J

3: Mixed media Holographic works completed between September 1981 and 1983.

The mixed media Holographic works presented here were completed between September 1981 and 1983. These works developed the integration of elements derived from the emergent technology of holography and its availability for the first time for creative exploration by artists, into mixed media narrative compositions. My holographic works integrate elements of this virtual imagery technology through montage to create narrative, personally reflective pieces of relief-based art. I was fortunate enough to be one of the first six artists in the UK, funded by the Arts Council, to be able to take part in the original Goldsmiths holographic workshop. The holographic facility was established by Michael Wenyon and Susan Gamble in 1980. The holographic works that I produced initially, through access to equipment and instruction at the workshop and then subsequently through independent hire of the facility for my own special developmental projects, eventuated in the making of a series of new art works. These pieces were first shown in a one person show at the Holographic Workshop Gallery at Goldsmiths in the later part of 1981. The works subsequently formed part of *The Holography Show*, the first holography art show to tour the UK.

Further to this, these works that I continued to develop and refine were included in the first major museum exhibition of art-based holography in Europe, at the Gulbenkian

Foundation Gallery in Lisbon (see catalogue in evidence portfolio). The exhibition was called '*8 artists in the age of the laser*'. A selection of the holographic works that I made at this time were also exhibited at the Royal Photographic Society in Bath and at Light Fantastic in London, followed by a one person show at Gied Jaspers Gallery in Amsterdam 1983.

My particular technical approach to the holographic process was based on a form of reflection holography invented by Yuri Denisyuk in 1962. This is a process, which enables the registration of interference patterns generated by recording an object, using an expanded laser light source, that is then recorded directly onto a light sensitive emulsion. The recorded interference patterns reconstruct the original object image under coherent white light conditions. This establishes a three dimensional record of an object in space and in essence reconstructs a memory of the original object that was at one point in time present at the moment of exposure of the light sensitive emulsion to laser light. My works used holographic images of objects, which I had made and constructed to act as integrated elements within a larger complex composition of montaged and collaged real artefacts. The resulting art works enabled the positioning of 3D holographic imagery in relation to other elements to construct composite arrangements of real and virtual objects occupying different spacial planes.

The holographic elements are objects that are both apparently present and absent, within another dimension of time and space, to indicate a reconstructed memory of the absent

original objects. The holographic objects themselves becoming cyphers for memory within the meaning of the compositions. The interplay of real and virtual objects both in front of and behind the picture plane and in some instances with animated movement, which is achieved by reversing the holographic image to create hyper spherical movement, enabled the development of subtle narrative interplay and motion within these compositions. This registration and retrieval of the originating object through holography uses the technology as an essential element in the meaning of the works. Arguably these works alongside the work of Andrew Logan were the first British artist works to completely integrate holographic material as a fully integral conceptual element. My use of holography here is as an essential formal narrative device of memory, within the construction of a narrative mixed media work of art.

I do not intend to write extensively about each individual work as these pieces all relate collectively to the three indicated structural anchor points, within my practice, of *a memory of time, a memory of narrative and a memory of technology*. There are a number of these works that are represented in the two catalogues cited within this submission as documentation, some of which are individual stand-alone works e.g. (*Helsinki Box*), (*Arecibo Idiocy*), (*Belgrano Set*) and others which are both individual and form a series, such as the *Memory Wreck Picnic Sets*.

3.1: Helsinki Box, which is a memento mori, a reflection on mortality and upon the transience of love and its continuing echo as memory. This narrative cabinet-work represents a young mans journey to Helsinki in pursuit of unrequited love. The holographic element in this work is mounted as an integral element in both the front facing and inner facing sides of the opening door to the cabinet. The different holographic imagery that appears on both sides of the cabinet door appearing to occupy, impossibly, the same physical space as one another. This superimposition creates a virtual conundrum only achievable through holography. The conundrum being that the holographic virtually real imagery is occupying one and the same real space as the contents of the cabinet when the door is closed, whilst also occupying one and the same virtual spaces, on both planes of each side of the cabinet door. In the *Helsinki Box* each of the object elements of the cabinet are working as an interrelated and holistic whole in a decipherable and symbolic narrative. At the heart of the piece, in amongst the real objects contained by the cabinet, is an unopened letter, a real unopened letter, an epistolic communication to the artist not to journey to Helsinki. It is the use of this unopened and unread letter, a failure to communicate, which is the key element in the meaning of this work, which acted as the starting point and genesis for many future works. There is no accident that it should be the first work to be individually mentioned and illustrated as part of the material that forms this exegesis. It encapsulates a layered use of technology, narrative and memory and centers around a

epistolic communication.

3.2: Arecibo Idiocy is a work of integrated holographic elements and sculptural construction. The work builds upon and utilises the binary code message transmitted into space by the Arecibo Radio telescope on the 16th November 1974. The entire piece acts as a narrative platform for a critique of the questionable rationality of the purported attempt to send an epistle to communicate with alien life forms in deep space. The premise behind the making of this narrative sculptural work was that the object itself was just as likely to be physically intercepted in time and space, decoded and understood, as was the original binary transmission of the radio message. The Arecibo binary code transmission can be seen as a three way epistle with and between its originators, a global audience and a sci-fi alien future. The work represents a transmission, locked in a Mobius loop, of terrestrial communication and deep space background noise. This work embodies and keeps the message on terra firma and waits for an audience to find the message contained within. The original transmission was, of course, more of an exercise in American propaganda than a serious attempt at communication with aliens. However, the concept of communication by an elite with an unknown and unknowable alien-other still has ramifications today. The debate is still very much alive within the communication with extraterrestrial intelligence community known as CETI or SETI. The most recent high profile input to the debate *at the time of writing this*, comes from Prof. Stephen Hawking. He has argued that everything should be done to avoid

communication with aliens, whilst endorsing the new *Breakthrough Initiatives* announced in July 2015 at the Royal Society in London.

<http://www.space.com/29990-stephen-hawking-intelligent-alien-life-initiative.html>

<http://www.breakthroughinitiatives.org>

This work eventually travelled to a number of exhibitions in addition to the museum show at the Gulbenkian Museum in Lisbon. It was selected to become part of a curated travelling exhibition in the USA called *CRASH*, which was an early touring exhibition of internationally selected computer generated and computer related art.

There are two holographic elements within the composition of this object. One of the two holograms is inverted and reversed to create a pseudoscopic image, which has apparent movement and rotation and this in combination with the hologram above creates a visual model of hyperspherical space, a representation of memory shifted in dimension and time, constantly moving in opposition to the viewer and evasive.

This work simply embodies the message and says that there is as much chance of this object arriving at a point in time and space, where it will be treated and understood by extraterrestrial intelligence, as the original radio transmission. The radio message is made physical and travels with the planet on its journey through the solar system, through space and time towards another audience, our future alien selves. The

work becomes a relic, a husk of the idea, the physical by-product of the telling of the idea.

This particular work was later cited in the text of the catalogue for an exhibition at the Bloomberg Space gallery, London, in the exhibition '*In Plain Sight*' (Oct-Nov 2004).

<http://www.bloombergspace.com/exhibition/plain-sight/>

3.3: The Belgrano set, which is built as an inverted suitcase and literally bent back upon its hinges to form a shelf, presents a tableau relating to the sinking of the battle ship ARA General Belgrano in the Falklands war by the submarine HMS Conqueror. Although this work presents a quite different story, about a different kind of communication, the holographic element within the work performs a similar function within the composition as the holographic elements within the Arcibo piece. During the Falklands War, the government denied that it had been possible to communicate directly with the South Atlantic fleet. However the Argentine battle ship the *Belgrano* was sunk on direct orders from 10 Downing St. The work connects the story of the telephone, the submarine and the ship. It leaves behind an exoskeleton, the snakes-shed-skin as it were of the narrative. The holographic image connects the elements of the composition and creates a dimensional shift between objects in time and space.

3.4: Memory Wreck Picnic Sets. These works are simple autobiographical reflections of a time of growing up in the 1960s and they refer to my childhood obsession with the first manned orbital space flights by both the Russians and Americans. The suitcase container is a direct reference to the small oxygen suitcases that astronauts used to carry when boarding the space capsules prior to flights or testing. The suitcase reference is specific to one of my earliest memories, of asking my mother what was in the suitcases and her reply, because she didn't know, was "Sandwiches dear", hence the Picnic Set. The Memory Wreck part of the title for this series of works comes from the inclusion in the assemblages of Memorex computer tapes. These tapes came from the European Space Agency and represent a direct and real connection to space exploration and memory.

The physical objects within the Memory Wrecks are fragmentary assemblages of original materials or replicas of objects from childhood memory. Such materials included pieces of an old bathroom towel, a fishing rod, a plastic robot and a dusting brush. The assemblages also montage new contemporary materials making compositions that connect both the now and then, but inevitably expose a somewhat unreliable narrator. The use of holography acts as a dimensional shift both literally and metaphorically. The actual holographic images enable the use of pictographic cyphers to activate elements of the narrative within the compositions whilst also metaphorically encapsulating another dimension of memory, presented as a portal or as a key to the other

elements of the piece and to unlock meaning.

3.5: As a memory of time. (a time of memory)

In these pieces the narrative of temporality when subjected to the reinvention of the imagination and made into art works becomes both subjective and objective recollection. These are edited highlights of half remembered events, or in fact often reinvented events. The content of these holographic constructions derive from recall and often specifically encapsulate selective memories of childhood and the transition to adulthood. These memories of a time that has past have become the stuff of meaning. They build upon the autobiographical story of the formation of self-identity. They are reflections about moments in time, at a moment in time. They are a conversation with myself, through a reflective conversation with an audience, through the use of a technology of reflection holography. This form of holography is known as the Denisyuk single beam process as opposed to the other main form in use at the time, known as transmission holography. The simple technical difference between the two available techniques being that transmission holography requires a laser beam to reconstruct an image, whilst reflection holography reconstructs under white light and therefore allows the work to be viewed under relatively normal light conditions such as in a gallery. In the works documented here, the narratives are either recollections of the early days of manned space exploration, which coincided with my childhood or they are critiques of contemporaneous events

such as the beaming of the binary signal into deep space, the militarisation of space or the sinking of the *General Belgrano*.

3.6: As a memory of narrative (a narrative of memory)

In my work when a story is remembered it is of course re-told and the original narrative may escape or be altered through the transmuted form of making and telling, but the shell or exoskeleton as it were, the shed snake skin of the original remains. Much of my work relates to the physical by-product of the telling of a narrative and becomes a deposited memory trace. I am not only interested here in the communication of an idea, a story or a message through narrative making, but in the embodied transformation that takes place in the process of communication across time. These works are intended to carry forward recollection and memory in much the same way as a time-capsule is intended to isolate materials at a moment in time, and to place them in a vehicle for rediscovery, even archaeological retrieval, at some future moment.

3.7: A memory of technology (a technology of memory)

All the holographic works cited deal with this element of memory. One of my overriding passions is an engagement with and through emergent technologies.

These works unapologetically play with the medium in a celebration of the extraordinary privilege of getting my hands on the technology at such an early and virgin state as a visual art medium.

The work, however, deals specifically with the inevitability of the half-life of a technology; it narrates the temporal limitations of various technologies and points towards our culturally absurd elevation of each and every technology as the smart new answer to everything. These works consciously point to the obsolescence of the material technology. The holographic elements are made of glass and chemical film, they are fragile and the images on them are absurd visual cyphers to unlock meanings and readings of the other assembled objects within the collaged and montaged assemblages. The computer tapes within some of the works point to obsolescence. Memorex computer tapes that come from the European Space Agency are sandwich wrapped in tin foil, without a machine to read them they are useless, without a tape to read the machine is useless, the data contained on the tapes is time limited; they become something else. Here, in addition to the holographic material, I use the physical and visual potential of the tapes as cyphers. They are Memorex tapes, they give their name to the works, Memory Wrecks.

The use of technology within my work creates both the capacity to carry meaning forward and reflect upon the technology's capacity to contain and facilitate the retrieval of that meaning in my work. The work predicts and works within certain technologies to contain a trace of themselves as the technology falls behind its relevance to the moment, in relation to failing or altered memory, exemplified by digital technologies that outstrip their capacity to recover their own data as new iterations and versions of hardware and software

limit the capacity for archival retrieval. The work presents a failing memory.

Publication documentation is contained in the eBook and evidence portfolio of this submission.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. (1981) *Arecibo Idiocy* [mixed media and holography].

Diggle, J. (1981) *Helsinki Box* [mixed media and holography].

Diggle, J. (1982) *Belgrano Set (Mayday Mayday)* [wood and holography].

Diggle, J. (1982) *Memory Wreck Picnic Set (High Frontier)* [mixed media and holography].

Diggle, J. (1982) *Memory Wreck Picnic Set (Astronomy Set)* [mixed media and holography].

Diggle, J. (1982) *Memory Wreck Picnic Set (Picnic Set)* [mixed media and holography]

Diggle, J. (1982) *Memory Wreck Picnic Set (Fishing Set)* [mixed media and holography]

Wenyon, M. (1982) *The Holography Show/ exhibition catalogue*. Available at: http://wengam.com/PDFs/holography_show.pdf

Gamble, S. and Wenyon, M. (eds.) (1985) *A Imagem Holografica Oito Artistas Na Era Do Laser*. Available at: http://wengam.com/PDFs/imagem_holografica.pdf .

Section 4. Cosmological model

Oct 12.2004.16.57

To: Jeremy.diggle be4tl@mac.com

From: JVermeer@Liden.ac.nl

Jeremy I received this from someone else?

I would like to add this to the video surveillance and Dawlish page that I sent last night.

It's part two of three parts to the contents of the suitcase.

Thanks,

Faith.

“These two suitcases, each of which contained twenty-two different photographs of video surveillance cameras, formed an integral part of a larger collection of objects. 1,920 assorted objects were traced and assembled in this room in Dawlish. The objects were arranged as a precise cosmological model. Theoretical physicists and cosmologists subjected the model to intense observation over twenty five years. The model was documented and re-documented 100,000 times. The street outside was relayed live into the model and taped, without interruption, through-out this entire period.

After several unsuccessful attempts to have the research published in the journal *Nature*, the Government funded a

transfer of the model to a research facility nearer the Greenwich Meridian.

I don't understand what this means, perhaps you do?

Yours Johannes

4: -69202 A Cosmological model.

Continuing the theme of the potential or even latent obsolescence of technology, this work takes as its starting point the death of a star, a Supernova event, which happened in the Southern Hemisphere skies and that was first observed on the 23rd February 1987. This Installation piece came about as a response to this Supernova SN1987A Sanduleak -69° 202, which had been a blue supergiant on the outskirts of the Tarantula nebula in the large Magellanic Cloud. The actual Supernova, the death of the star, had taken place long before the evolution of humanity and I was interested in the paradox of the evolutionary time scale involved that had enabled us to observe this extinction event. A paradox because it is only events like Supernova that create the potential for all carbon based life forms such as us to exist. This Supernova event became a significant focus for astronomers globally because it was the first observable by the naked eye since 1604 and therefore the first observable using the scientific methods and the advanced technologies of post Industrial Revolution computational modernity. This meant that all the appropriate new technologies of physics and astronomy could be deployed to understand and interpret the event.

4.1: Therefore, this work which was developed over a period of time within a fixed space, the ground floor studio in a house in Dawlish, between 1987 and 1991 represented and embodied a process of construction and arrangement of a cosmological model constituted from everyday objects, the antique and the contemporary. The work explored impermanence and I was interested in the effect of the passage of time upon organic and non-organic objects, upon the hand made and the machine made and upon the technologies of their production. This is an absurdist narrative construction; it is a critic of materialism and the idea that there can be any form of permanence. The work gathers together multiple objects from different times and places and maps and constructs compositional and placement relationships between the objects. The method of placement, arranging and organising the object in relationship to one another, was achieved through a lengthy time-based process of divination and aesthetic contemplation. The method of decision making used in the placement and arrangement of the objects involved throwing darts at a dart board across the physical space of the studio within which it was constructed. This was a contemplative and somewhat absurdist meditation as a means to decision-making, a form of divination that I used to focus my thought process on the task of placement and arrangement. Essentially each aesthetic and compositional decision was achieved as a result of judgement channelled through the game of darts. This was not the application of the conventional rules of darts, the throwing and the target simply acted as a process for focussing the mind. The intention from

the outset was to gather together a collection of materials, artefacts and objects of technology in one space and to find an arrangement of these objects in the space. The objects selection and arrangement would make meaning and the placement could be mapped. On completion, the composition of elements could be moved and reconstructed at a number of different sites in accordance with the map. The time based conundrum of permanence and impermanence, its temporality was significant and present in the absurdity of the process of mapping and reconstructing on more than one site. The reality of the absurdity of permanence is that one arrangement of objects in space, no matter how well mapped, can never be realised as an actual reality at another site, place or time. The objects will have moved and travelled in time and space and regardless of the accuracy and attention to the detail of reconstruction, the second or subsequent manifestations of the composition will always be different. The simulacrum is a deceit. However, the act and the contemplatory discipline of transposing one composition from the original site to a second site would add meaning through the reconstruction of memory within an inevitably different context. The second iteration itself would also be mapped and lead ultimately to a third construction and a further addition of meaning. All this occurred whilst the objects of the composition themselves change through time, through the degradation as time passing.

4.2: As time of memory

This work involved a long process of construction. The method of decision making was based upon the movement and arrangement of objects in relation to one another over an extended period of time. The divinational decision making process was adhered to through a durational contemplative engagement with the objects in the space within which the construction and composition was being made. The space itself was understood and navigated by the process of throwing darts not only as a thought process but as a means of determining and understanding the space. Ultimately the final arrangement of objects became as much a tangible and physical manifestation of the memory of the activity as it did an object-construction of art.

4.3: As a narrative of memory

The iterative reconstruction of the result of the original activity of the making of the compositional work at another site creates an embodied narrative memory of the original. The new version develops a variant of the narrative of the physical and intellectual activity involved in the first iteration and builds additional memory-narrative into the work to be carried forward to its next reconstitution.

4.4: As a technology of memory

The very premise of the work, the building of a response to an astronomical event observed and studied from Earth as a an event of extraordinary scientific and astronomical significance, engendered a reflection upon technologies and science and led to my inclusion of both old technologies and new technologies as integral material aspects of the composition. The use of video and photographic recording, within the works construction and the inclusion of objects such as microscopes and radio/CD player, some brand new others obsolete directly uses a memory of technology and technologies of memory. These are integral to the work and its existence as model of memory.

Exhibition documentation is contained in the eBook evidence portfolio of this submission.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. (1990) -69202 [Cosmological model, mixed media and video installation]. Dillington House.

Diggle, J. (1991) -69202 [Cosmological model, mixed media and video installation]. Pheonix Arts Centre Galleries.

Section 5. Multimedia Works

Oct 12.1664.17.07 From: Johannes.Vermeer.
bel8td@mac.com

In a garage in Gent, beneath the street sign 'Reginald Warnerford Straat', a surrealist suitcase has been found. It contains a package of 500 postcards depicting Clinton and Lewinsky, the head of an earless Mickey Mouse, a cigar and photographs of planes and other unrelated materials. On the back of these postcards has been printed an explanation of the true meaning of the René Magritte painting of a pipe "Ceci n'est pas une Pipe" 1926.

Although it has universally been accepted as a classic statement of 20thC painting, interpreted as meaning ("This is not a pipe it is a painting"), the true meaning has been overlooked.

In the 1920s "pipe" was a common slang expression in Belgium, for oral sex.

The real meaning of the painting is therefore:-

"This is not a pipe, it is a blow job"

5. Paper Scissors Stone, Vision and other works.

Here I cite a number of individual multimedia works, which were either published, commissioned and/or exhibited between 1994 and 1997. These works explore a range of narratives and conceptual explorations of the emergent multimedia within the capacity of the personal computing available at that time. These works were innovative and at the forefront of British multi-media art making. The works demonstrate a progressive engagement with, and development of the use of, multimedia as a publishable and exhibitable art form. Later in this section I also cite the commission for Computers in Art and Design Education, *CADE Conference CD ROM*, 1997 and briefly discuss the development of the web based narrative the *Salmon Fishing Woman* 1999. In addition, I will also briefly indicate the multimedia work commissioned by the Arts Council of England, *A Year and a Day* 1995/6, a description of which will be expanded upon in the next section (6). Finally, I will also cite the CD ROM publication for the *Athens Panorama* 1997 and documentation for the Millennium Panorama 2000, which also relate to the evidence section (7).

5.1: There has been an interesting challenge here in presenting this selection of works, a challenge which builds upon the emerging theme of obsolescence that I have touched upon in preceding sections. The challenge here is one primarily of documentation. Ironically, given that my claim here is that these works of multimedia are innovative and original much of the technology and software that was used to make them no

longer functions, it has become obsolete. Trying to present these works as documentation has proved difficult because of the problem of finding available operating systems and hardware that are still capable of playing them. At the time of their making it really wasn't obvious quite how quickly the software being used would transform and move on so that software manufacturers and the Mac Operating System would no longer support or enable access to read or play the material. I have had to resurrect a 1999 iMac in order to run these original works and create documentation. And even then, this is problematic as this machine is in many ways more powerful and the operating system too fast for the programming, which was made several years before this machine was released. At the time of writing this I have had to choose a strategy of video-clip recording snippets of the originals in action on the 1999 iMac. There are no alternative contemporary versions of the software available that produced these works, which can allow the effective playing or transfer of the work to new operating systems. Through necessity this has been used as a means of representing the material, but it does not allow for any contemporary user-interaction with these multimedia works. They exist here in this format as demonstrable illustrations of the original works. It is a poignant, poetic illustration of one of the core aspects of my work *a technology of memory* that evolutionary technological change creates a fundamental problem of access to memory.

5.2: Field Glasses, Floppy Disc Artist publication and Installation at Dolland & Aitchison Optometrists, Honiton Festival 1994.

Field Glasses, (an artist publication) was a by-product of an installation piece at the Honiton festival in 1994. This work is briefly described here and cited in the context of this submission because it was a transitional and gateway work that led onto further multimedia works. The installation piece involved the placement of a pair of First World War binoculars in the display window of the opticians Dollond & Aitchison. The Binoculars were presented in a similar way as they may have been showcased in a museum. A short descriptive text was placed directly beneath the binoculars which explained and implied that the binoculars had been found relatively recently in an archaeological excavation on the site of a battlefield in Belgium. The text also described that the field glasses had been encased in mud and given to me as a restorer to clean. *I had previously held a position as a conservator at the National Maritime Museum, London.* The claim that I made in the text was that I had noticed an image in the eyepiece-lenses of the binoculars and that by using a holographic technique I had managed to extract the image and preserve it both holographically and digitally.

The image I claimed to have seen was of a pair of eyes staring into the lenses, the implication being that the image extracted was a captured moment of death and that this image had been recordable because of the circumstances of death and

extractable through the application of a combination of new technologies. On either side of the binoculars were placed a set of digitised images representing the extracted image of the eyes. The accompanying text also implied, within the short narrative, that these are the eyes of an unknown soldier. In doing so I made a connection within the work that implied memorialisation, because we choose as a culture to remember the actions of the identified dead through an iconic memorial, to an anonymous individual casualty of war.

It is a simple story of imagination, but one which played with the possibility that because an expert in a conservation technology, who has credibility, claims something to be true, it is true. It is also a piece that through storytelling creates an image in the mind of the observer. The work exists in the mind's eye and not in reality. This work is truly transitional and it marks the bridging point between the holographic work and the digital work. As a direct result of this work I was approached to make a piece of site-specific artwork for the Blake Society at Blake's House in central London. The new piece would form part of a series of works to mark the bicentenary of the publication of William Blake's *Songs of Innocence and Experience*.

5.3: Vision: Interactive Computer Multimedia and Installation work. Blake's House, The Blake Society, London, 1994. Cardiff Art and Time festival Cardiff School of Art and Design 1994.

Vision is a work which was made specifically to be sited at Blake's House in London to mark the bicentenary of the publication of *Songs of Innocence and Experience*. The work is my first fully interactive multimedia piece. It is represented here in this short documentary video clip of the piece in action. This work is innovative in that it is an early example of interactive computer art making. It is a work which was site-specifically located and also user operated as an inter-active digital printing press. The objective of the work was to represent what Blake, if he had been alive today, may have been doing as a designer and printmaking. The work, which involved the installation of the computer and a digital colour printer in Blake's house, acted as a contemporary equivalent to Blake's printing press. The work enabled the visiting audience to interact with the multimedia work by navigating the piece using the mouse. If the user clicked the mouse on any image, the digital printer would capture that precise moment and print it out. This enabled individually unique prints and potentially printed books to be generated. The particular significance of this work lies in its site-specificity and the link it made between interactive virtual navigation and physically manifested output. The work engages the user in an interactive narrative experience that generated a physical memory of the interaction as print.

This work which was designed to represent the various transitions within Blake's *Songs of Innocence and Experience*, referenced the contemporary world as if Blake was alive today. The work deals with memory, *a memory of time, a memory*

of narrative, a memory of technology, in that it creates a narrative space within which the viewer and user can interact.

The work reinforces the narrative integration of memory through choice and represents this choice and interaction by the presentation of a printed copy of the moment of decision making. This also forms a feed-back loop directly through the context and placement of the installed work in Blake's house to the earlier printing process and art making aesthetic of Blake in his own time and workshop. The user understands this physical and historical placement within which they are and the work engages the user on site through access to an entirely new and contemporary interaction. The memory of technology, the printing press as a technology of memory, which is what it has always been, is made explicit through the once technologically revolutionary, but now tradition printing press, having been replaced by the digital.

The narrative of temporality and technology, as applied to Blake's *Songs of Innocence and Experience* when subjected to the invention of the imagination and users choice through interaction, is made manifest in both subjective and objective actions through time, a moment of decision, a click of the mouse. This interaction becomes the stuff of meaning, becoming part of the content of the art.

5.4: Paper Scissors Stone, Toy Box CD ROM, Video Positive, Tate Gallery, 1994.

This piece formed part of a series of the earliest UK artists interactive works to be published. It was included as part of the CD ROM Toy Box, and also the exhibition of these works at the Tate Liverpool within the Video Positive festival 1994. This was the very first entirely interactive piece of multimedia authoring that I had made to specifically run as an element of a CD ROM publication, whilst at the same time operating as a fully stand-alone interactive screen based work. The piece takes the traditional game of counterpoint, chance and decision making, Paper Scissors Stone and builds it as an interactive video art work. The original work allows interactive decision making by the user who has to navigate intuitively how to use the piece. The interaction relies upon the intuitive deployment of aspects of memory and trial and error to self-teach the method of playing. The work attempted to build in various choices that enable the user to navigate their way to the end of the game. The piece can be played repeatedly with different scenarios arising out of different durations.

If the user navigates her way through a series of on screen events the work eventually plays itself out by revealing a series of video clip edits. The edits are a result of a feedback loop related to the decisions or interactions made by the user. Like the game, it has no particular meaning, it is what it is, a series of chance juxtapositions. The user plays the machine, the

machine compiles the sequence and the user creates a meaning from that sequence. This work specifically builds upon a relationship and expectation of the technology in both time and memory. It implies that the machine remembers the choices made by the user and subsequently in consequence, as a technology of memory, arrives at a visual narrative. The work plays upon a memory of a childhood game and recontextualises it within a new technology and plays a game of counterpoint to the users expectations.

5.5: Carpet Bomber. Interactive Computer Multimedia and projection installation work. Cardiff Art and Time festival Cardiff School of Art and Design 1994. Cinema projection, Gent, Hogeschool Gent (Royal Academy of Arts), 1996.

Carpet Bomber was produced as a reaction to the first Gulf War and developed as both a screen-based and projection based work of physical interaction. The work has multiple reactions to programmed events triggered by moving the cursor through various roll-over events or pre-programmed time-out progressions. Essentially the work responds to and interacts with movement. The work is loud and aggressive as a sensory phenomena but there is also a built in repose to the piece.

Carpet Bomber was designed to create a desire within the users interaction to find places or moments of calm. This work creates a war game environment that juxtaposed Persian carpet design with aircraft technologies such as Stealth and Black Hawk. Within the carpet motifs are hidden dormant

combat simulation events, images or actions that the user navigates. Within the carpet designs there are multiple trigger points that react to roll-over events and create animations or sound effects. The overriding physical experience of the piece is determined by extreme audio events. The user quite literally needs to find quiet places within the work in order to think. The overriding implication of the work is that there is no quiet place or sanctuary to be had, only momentary glimpses of peace. This was the first interactive screen and full projection work that I produced and the first work to use both a traditional mouse and which would also conceptually allow alternative space sensors to activate the work.

5.6: CADE CD ROM. Computers in Art and Design Conference 1997. Interactive Computer Multimedia.

This CD ROM was produced and designed by myself as the official digital CADE Conference proceedings.

Firstly, I think it is interesting to refer back to my opening paragraph of (5.1): above, in that there is an irony here that has to do with having to use video-clip's, recorded from the screen of an old iMac, to show these works in operation. Here the irony is particularly poignant in that the *CADE CD ROM* was produced in 1997 in order to challenge the then ubiquitous use of older generation Mac computers in the UK's Art and Design Schools. What was prevalent was that the teaching of the new media in Art Schools was generally being thought of as an avant-garde but essential contemporary process. However most institutions and in fact users were

working with machines and software that could barely keep up with the exponential change in the media. This CD ROM was produced at the time using the most advanced Mac computer platform available and as a result deliberately required a fast Mac computer to run it. If there was a criticism of the CD ROM at the time, it was that few users had the equipment to access and run it's contents. It was quite literally, for a year at least, ahead of its time. That being said, a 1999 iMac provides a perfect means to access this 1997 publication now for the purpose of documentation.

The CD demonstrated here in the video clip was a comprehensive 'conceptual conference on a disc'. The actual conference took place in Derby. This CD presented the conference papers, the keynotes, a list of contributors and background material. It also presented a gallery of digital print works and a full record of proceedings as well as a digital art work by Richard Poval and Jools Gilson-Ellis called *Mouth Place*.

My innovation in the making of this CD ROM was to attempt to represent all the material of the conference within a creative and aesthetic interactive multimedia environment. The most significant inventive and original contribution was the 3D virtual modelled conference-space. This virtual space is represented as a floating cruciform pier space somewhere out at sea, *frequent conference attendees might recognise the metaphor*. The user navigates a series of audio recordings by moving the cursor around the screen to interact with an animated and

moving light, which appears to travel along the pier structure, like tuning into a radio. By landing the cursor on the light you effectively tune in and listen to a random set of different audio recordings. These audio recordings range from full research paper deliveries from the conference auditorium, through to interviews with delegates and other background conversations. The CD ROM becomes a virtual visit, a representation of what it was like to be there.

Technically the particular virtual navigation that I designed into this CD ROM presents the Conference as a totality and breaks the convention of a linear navigation of proceedings and replaces it with a non-linear virtual 3D spatial navigation. I would argue that the interface design in particular enables a memory of time and thereby creating a new narrative potential for the access of the memory of an event through the subject technology of the event.

5.7: Panorama Athens CD ROM, Interactive Computer Multimedia publication. European League of Institutes for the Arts. 1997/8

This *Panorama Athens CD ROM* is a comprehensive institutional publication, a digital book of a major ELIA art project in Athens in 1997 that I designed and authored as a multimedia publication to accompany the book *Panorama Athens*.

I will write further in section (7) about the panorama, but the CD ROM is presented here in video clip form as

documentation of the publication.

This is the first fully interactive multimedia publication by ELIA and involves a full and comprehensive documentation of the Panorama Athens Project. In this work I present an innovative solution to the documentary process of an arts project as a CD ROM publication. The CD comprehensively and elegantly uses the technology to narrate a simple story about the panorama project. It uses the technology to good effect to bring together a series of documents and descriptions within one cohesive memory event.

5.8: The Salmon Fishing Woman. Web based narrative. 1997/2004.

The Salmon Fishing Woman was a web based narrative that was conceived and started development in 1997. The work went through various iterations until 2004. The website in its time developed an extended web-based narrative and experimented with the idea of the internet as a story telling environment.

This work became a vehicle for exploring the potential of web based narratives and was an early precursor to e-book publishing. The work also initiated my interest in creating narratives which could only result as the direct consequence of working in this medium, and is the originator and precursor of latter works such as *Apoll8* and *Narvik's Complaint*, which are described in a later section of this exegesis (11)&(12). *The Salmon Fishing Woman* internet narrative became referenced as

part of a series of lectures and conference presentations, including being the primary subject of my first inaugural professorial lecturer at Robert Gordon University, Aberdeen, in 2000. The hypertext narrative also formed the central piece of a presentation at the Trace (Incubation) Conference, at the University of Nottingham, 2002 which was an international conference on writing and the internet. ([link here](#)).

<http://tracearchive.ntu.ac.uk/incubation/presenters-2002.cfm>

<http://tracearchive.ntu.ac.uk/incubation/abstract-2002.cfm?presenter=106>

The Salmon Fishing Woman narrative was an early exploration of the idea of an avatar on the internet and the creation of virtual identity. The web site also created an extensive network of links, which blurred the boundaries between the real world and a fictitious narrative web based reality. It is *The Salmon Fishing Woman* narrative, which extended my interests in the narrative device of letters and the epistolic that would latter manifest themselves in the works (*Apollo and Narvik's complaint*). These two large works are described and referenced in sections (11/12) later in the submission.

The narrative that emerged in the development of *The Salmon Fishing Woman* centres on a number of key characters who are searching for each other across a 1000 year span of history. The main element of the story however examines events in twentieth century European history and starts with the First World War. The initial First World War incident within the

narrative remembers the little known but controversial event of the loss of the crew of a German Zeppelin airship, after it crashed in the North Sea, as a result of sustaining damage in an air raid across England in early 1916. As a result of the memory of this incident the narrative brings together a group of characters at the turn of the millennium, all of whom are involved in various forms of memory and archival research or as obsession. These characters and in particular the character known as Dollar, who is obsessed with forensically photo documenting the past in order to understand the present, are cyphers for memory, narrative and the technologies of memory.

5.9: A Year and a Day 1995/6. Emotional Computing Commission, Arts Council of England. CD ROM and web distribution (HUB), Premiered at Lovebytes 1996.

A Year e' A Day is a commission piece of multimedia that built upon the previous interactive multimedia works mentioned above and formed part of the Arts Council of England's CD ROM and Web publication (HUB) Emotional Computing. The following section (6) of this submission deals with an expanded description of this piece and refers to the CD ROM and the book chapter in *Computers in Art*, both of which form part of the evidence portfolio.

Publication documentation is contained in the eBook evidence portfolio of this submission.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. (1994) *Carpet Bomber* [Multimedia digital projection and screen].

Diggle, J. (1994) *Field Glasses* [Installation, Floppy Disc Artists publication]. Dollond & Aitchison, Honiton. Honiton Festival.

Diggle, J. (1994) *Paper Scissors Stone* [interactive multimedia]. Toy Box CD ROM, Video Positive, Liverpool.

Diggle, J. (1994) *Vision* [interactive multimedia installation and printer based output]. Blake's House, The Blake Society, London.

Diggle, J. (1996) *A Year and A Day* [interactive Web and CD ROM work]. London: Arts Council of England (HUB).

Diggle, J. (1997) '*A year and a day on the road to Omniana*', in Mealing, S. (ed.) *Computers & Art*. Bristol: Intellect, p. 73,81.

Diggle, J. *CADE 97* (1997) Directed by [CD ROM]. Brighton: Computers in Art and Design Education.

Diggle, J. *Panorama Athens* (1998) Directed and Designed [CD ROM]. Amsterdam: ELIA.

Diggle, J. (1998) *Personal Identity in Digital space. Ratavar* [Virtual book proposition]. Available at:

<http://www.intellectbooks.co.uk/books/view-Book,id=4223/> .

Diggle, J. (2000) *Omniana* [multimedia], Professorial Lecture. Robert Gordon University. 29 November.

Diggle, J. *The London Panorama* (2000) Directed by [CD ROM]. Amsterdam: ELIA.

Diggle, J. (2000) *The Salmon Fishing Woman* [Internet narrative, mixed media, oral storytelling]. Available at: www.zepelln.com .

Section 6. A Year & A Day

Dec 29.1664.12.14 From: Johannes. Vermeer.
bel8td@mac.com

Jeremy,

As the New Year approaches I feel increasingly nostalgic for this summer past. Such warmth and light.

The Russians were in town last week buying art for the Summer Palace. No sooner had they arrived than they were longing to return. These people will never threaten our national boundaries, they are inextricably rooted to their home land.

Happy New Year

Johannes

6: A Year & A Day. HUB CD ROM and web based publication.

In this section I comment upon one of the previously mentioned interactive works as an expanded and more detailed illustration of the specific content and structure of one of my multimedia works. *A Year and a Day* is an interactive multimedia computer memorial piece, commissioned by the

Arts Council of England in 1996. Here I will use a modified and revised section of text derived from my chapter *On the Road to Omniana*, published in the book *Computers and Art*, which is included in the evidence portfolio. I do so in order to illustrate the work and its place in relationship to the three structural elements of my exegesis. As mentioned, the book, edited by Stuart Mealing referred to above and the Arts Council CD ROM (HUB) are submitted as part of the evidence portfolio. A number of demonstrative video clips are embedded here in this iBook submission as means of further illustrating this work.

6.1: With reference to this art work that was created in response to an Arts Council of England commission entitled *Emotional Computing, A Year & A Day* was designed to be distributed via the internet and run as a download and specifically on Macintosh computers in CD ROM format. The work was fundamentally an internet concept for multi-platform distribution on the web. At one time it was carried as part of a compilation of games on CD ROM, on the cover of *MacWorld* magazine. Originally this work was made to be downloaded from the (now inactive) Arts Council of England internet server site: The HUB (<http://www.ace.mdx.ac.uk/Hub/Hub/.html>).

There were stringent technical restrictions placed by the commission on the work. The work had to be interactive, it had to work on an emotional level, and it was restricted in size

to be no larger than that which could be downloaded onto a floppy disc (1.4Mb). The primary distribution was via the internet to a user's floppy disc drive.

6.2: A Year & A Day is a work to which an audience of any size can relate, it was not designed to be restricted solely to a one to one user relationship. My main intention was to create a work where it would be possible for the user to input on a regular basis. In many aspects *A Year & A Day* works as a diary or journal, which functions like a secular book of hours: it measures and memorises inputs in time. This is not done by numbers but by the passage of time being delineated by small changes in the graphic image as seen on the screen or marked by small sound files tolling significant moments. The piece introduces the user to its key graphic elements systematically on opening and in doing so provides the procedure for interacting with the work.

The introduction to the piece is very straight-forward. It starts with the extinguishing of a candle. There is a title page introducing the viewer to an image of a candle and the tolling of a bell. The next screen sequence includes a dedication to Andrei Tarkovsky (the Russian film director who died of cancer on the 29th December 1986) At this time in my own creative development I was particularly interested in Tarkovsky. I had spent a period of personal research time in 1987 re-editing all of Tarkovsky's films on video. I had a particular interest in his use of sound in the film *Nostalghia**.

This was a film, which at the time of making *A Year & A Day*, I was using to develop a narrative performance lecture about the impossibility of art in translation.

We are introduced here, for the first time, to the possibility that the work is an aid to memory, for instance as an act of remembrance or mourning. There is the sound of a tumbling and spinning coin; a sound evocative of the work of Tarkovsky. The next screen presents us with an animated flame cursor, a key symbol throughout the work. Here is a red screen with the word 'Month' and a number beside it. By moving the mouse, the flame cursor passes over the word 'Month' and if it passes over the number then the number becomes progressively larger. If the flame is moved back to the word 'Month' then the number decreases. The user is thus instructed, by participation, in the primary control of the cursor operation as the key to accessing the work. By moving the flame over the numbers they increase until they reach 13 at which point the screen adds both textual information (telling us to move the flame cursor over the words in order to progress) and the sound of water pouring. Thus we are taken through several pages of textual information about the work to come and have reinforced both the use of the cursor and the role of sound within the piece.

The final introductory screen offers us three choices for accessing the work: by starting at the beginning of the 366-day vigil, by choosing a month from one to thirteen, or by accessing it for one day only. When choosing to start for a

year or for a day the work seamlessly branches to the main score script and opens the work at day one of 366. If, however, you have chosen a month at which to start, then the work branches to an intermediate screen where you can choose the number of the initial month. Those who choose the thirteenth month as the shortest route to the end of the piece are redirected to the beginning of the twelfth month. The work requires as a minimum participation a single day or a vigil of eight weeks.

On starting the work proper the user is confronted by the image of a sleeping form, apparently human bathed in red light. The body might be floating, as if levitating, but it could also be in suspension; this is open to interpretation. Levitation has a significantly different conceptual meaning to suspension. The figure appears to be sleeping rather than dead because it can be heard to breathe, and our experience tells us that whilst the breathing is not troubled, neither is it completely relaxed. The work draws upon our interpretative and natural instinctive capability to read an image or a sound. This sleeping figure does not attempt to interact with us. It lies there passively, rich with latent potential.

An opportunity is immediately presented to the user to respond to the program running on the screen. A flame is burning in the bottom lower right of the screen and a candle in the top left. The lower flame is alight, the upper flame is not. Tradition and ritual tell us that we can, and probably should, light the candle at the top. There is a message on the screen

that tells us to light the candle, reinforcing what is probably an instinctive act. Provided we have already learnt the rules of multimedia, we also understand and expect the potential to be there to move this flame. When the flame has been dragged by the cursor to light the candle, the sleeper is lit up by a white light source. Of course, all of this reality is only virtual, but its strong visual and symbolic correspondence to reality is such that the flame seems real in all but heat. Certainly in an emotional and symbolic sense we have lit the candle; we have entered the vigil, even if only momentarily. We have entered into a time of memory. The work attempts to draw you in and to participate in the making and recording of meaning.

Nothing else, however, appears to be happening; but within a minute a small symbol appears beneath the sleeping figure. This symbol has been randomly selected by the program from a pool of potential symbols, one of which will appear in the same position on the screen every minute.

These symbols, cyphers and icons all have precise definitions and uses in the real world; they are classic examples of speech without sound. Some have religious meaning; some chemical and others directional. This sequence will continue for two hours until the candle appears to be extinguished by a draft or breath from off the screen. The figure is bathed once again in red light, returned to virtual darkness and the sound of a bell tolls once. The bell and the virtual darkness are a call for us to (symbolically) tend the body.

A text cursor now appears and it is possible to input four or five lines of text at this point. We have only a minute to do so and if we miss this window of opportunity the program moves on. The body is now in another virtual light - blue – and will remain so for the next two hours at which time it will again be possible to tend the flame. If the flame is tended for then the body is again illuminated in the white light. Symbolic forms continue to appear relentlessly on the minute, marking the passage of time. All the text, which is inputted every two hours, will reappear exactly 24 hours later and can then be edited or replaced. At the beginning and end of each 24 hour day there is an opportunity to enter as much text as you may wish into a scrolling text area beneath the reclining figure. When the candle is relit or left unlit there is a pause (a time out) of one minute and 40 seconds during which any text is absorbed and may or may not reappear 24 hours later. Throughout the year there are five scrollable text boxes in operation and therefore text will eventually reappear and can be edited, added to or replaced.

The work soon becomes a continuing, day-by-day, hour-by-hour diary or vigil. It has the potential to become a multi-user platform for communication or an individual meditation upon the passage of time. The sleeping figure can symbolise a friend, a lover, someone departed or ill, or it can be an image of oneself. The possible interpretations are manifold. The longer the work is running, the more important it becomes to be aware of the stability of the computer unit: computers crash. A piece that runs for such an extended period is going to require

vigilance over the power supply and the machinery. The vigil, conceptually framed within the program, starts to become apparent as a physical vigil over the machine itself. This goes beyond the conventional, multimedia, virtual reality and enters the world of physical reality, time and space. The machine is the life support system.

The program is very long and therefore the computer's ability to access data becomes slower the further into the program it gets, particularly bearing in mind that the text inputs are placed directly into RAM. As the program nears its end the action of moving the flame to the candle at each interval becomes more laborious (more physical) since the mouse is considerably slower to move the flame. The last day is much the same as the first but now the screen image changes from that of the preceding 365 days. The figure is still there but this time appears to be absorbing into itself all the activity of the previous years. It doesn't get up and walk away or resurrect itself but the user will realise eventually that this process of absorption will not end without intervention. The user can, however, by following a simple cursor procedure, move deeper into the program and be presented with all the text that has been input throughout the year. The flame is still burning; a window at either the top left or right indicates the way to move on but you can wait at these screens indefinitely. You can scroll through the text and pause. When you attempt to move the cursor, it moves painfully slowly. There are five screens of text in all. Once you have moved on beyond the text there is no returning, the data is lost irretrievably.

A final lighting of the candle takes you to the last screen on which is a full screen still life (tableau mort). The flame burns on. We realise that we cannot return, we can only watch. Eventually we must turn away or turn off the machine. We have to switch off the life support, power down and start again. Everything that has been inputted over the previous 366 days is lost, the machines memory of the work becomes inaccessible; the only memory remains in the users' head.

Using a multimedia workstation without being overtly conscious of the distinctions between the elements of the media available can leave one's thinking free to focus on making the work and using the tool to do it. *A Year & A Day* was thought through as a complete concept before it was made. The idea was formulated both with knowledge of the capabilities of standard workstations in mind and for a specific format required by the commission. The piece clearly can only exist within the computer. The means of distribution determined the extent to which the idea could be developed. Given greater opportunity to use more memory, the work could be more graphically sophisticated and a number of additional, visual options could have been used. The work was conceived solely as a work for the computer screen. It is intended to be interactive over an extended period of time, allowing the number of users to vary. This means that the work could become distinctly personal either to an individual user or between collaborative users. The piece is technically straightforward, its only major problem having been the development of a script that would allow the work to run for

as long as 366 days whilst retaining the possibility of inputting to it every two hours, all within constraints of the 1.4Mb storage limit.

6.3: As a memory piece this work deals with a memory of time (a time of memory). The work deals with memory directly as a vigil, which will enable a continuous input in stages throughout a year. The use of a year and a day builds upon a traditional period of mourning across many traditions and invites the user to both remember the moment of the here and now as well as the extended period of interaction that the work affords.

Inevitably as a memory device of narrative (a narrative of memory) the work presents an invitation to input regularly through text based interaction and it enables a long period of reflective narrative making and the capture of thoughts and ideas throughout the duration of the work. Additionally, as a memory of technology (a technology of memory) the work requires the user to sustain and maintain the piece, which takes over the entire machine for an extended duration. The longer you use this work, the more you input to the work, the greater the peril and potential for the machine to fail. The machine becomes the life support for the work and the user must look after the work and the life support machine. If the machine fails all memory is lost, all the input is gone. Once engaged with, the work demands and requires a significant commitment to the idea and the technology. Finally, this piece

does reward the user by allowing access to all that has been entered into the work's memory throughout the year. But ultimately nothing is permanently accessible and at the end the machine has to be switched off, all is lost from the machine's technology of memory, and the work relies upon the human users' capacity to retain and hold the content in their memory.

**Nostalgia*. Directed by Andrei Tarkovsky. With Erland Josephson, Oleg Yankovsky, Delia Boccardo

Italy/Soviet Union 1983, 35mm, b/w & color, 125 min. Italian and Russian with English subtitles.

Publication documentation is contained in the eBook evidence portfolio of this submission.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. (1996) *A Year and A Day* [interactive Web and CD ROM work]. London: Arts Council of England (HUB).

Diggle, J. (1997) '*A year and a day on the road to Omniana*', in Mealing, S. (ed.) *Computers & Art*. Bristol: Intellect, pp. 73,81.

Amery, M. (2009) '*Flying Under the Radar*', Massey Research, (ISSN 1177-2247), pp. 62,68. Biographic essay.

Section 7. 360 Degrees

Sept 19.1666.07.16 From: Johannes.Vermeer.
bel8td@mac.com

Thanks for the mail and the conversation.

Here is a time of cross reference...my first memory (today), is one of Narvik, a place on the map, a map on the wall of that small house in Bergen. Jacob feet up, laid back, reaching for the ceiling with his toes. You too, testing the temperature of that small house in the nail yard. There was an inverted tide that ran shallow across the stoney harbour.

First panorama in the dry-dock of the rising Sun. Here too there is a crossing point and it is sectioned at right angles to the westerly setting of that first Spring Moon. Daniel (*the banker*), has not yet arrived and the fragment of wood between your teeth not yet gleaned from the philosophers house. Look around you.

J

7: 360 degrees. The Panoramas.

Panorama: A technology of making (*applying a new strategy to panorama making. Adopting and improvising image software*)

Bergen 1994

Athens 1997

London 2000

7.1: The three panorama projects cited here, represent over a decade's involvement in collaborative and collective panoramas that were developed as public art events within a pedagogical framework. These panoramas have been carried out within the context of higher arts education and have involved participating students selected to take part from leading institutes and academies of art from across Europe, Japan and Australia. The first panorama in Bergen 1994 was co-directed by myself and two European collaborators Jacob Shocking an opera director from Denmark and Daniel Libens and academic from Belgium. The subsequent two panorama projects were co-directed by myself and Professor Daniel Libens of the Gent Royal Academy and built upon significant links with ELIA (European Institute for the Arts) which sponsored the projects in collaboration with the host institutions.

The reason why I cite these panoramas in this exegesis is

because of the adaption of digital imaging technology in the making of the works, my design and use of CD ROM publication in the dissemination, particularly of the Athens Panorama, and also because these panorama projects ultimately led to further personal projects and invention.

These three panorama projects involved entirely new approaches to the construction of the panoramic image. They required the application of advances in the emergent digital technologies in the problem solving and creation of the panorama image. My specific contribution over and above that of the collaborative pedagogical and organisational was in the problem solving and the mapping of the image to be rendered on the walls of the panorama. In this regard I was responsible for the first use of digitally stitched photographic projection in full scale panorama making within the *Bergen Panorama* 1994 and the *Athens Panorama* 1997. Subsequently the *Millennium London Panorama* 2000, at the Roundhouse in Camden, became the first full-size, fully digitally printed panorama. This specific use of digital imaging software on this scale in panorama had not previously occurred in this context. It should be remembered that the application of digital photo imaging to large scale digital billboarding and public events was still in its infancy, with Adobe Photoshop being released in 1990 and computers having limited capacity to handle large scale image files. However the more significant aspect of the use of technology within the context of this exegesis was as a tool for the production of a documentary publication, particularly of the *Athens Panorama*, as a memory of narrative and a memory

of the event in time involving CD ROM publication. I was the designer and digital author for these. The *Athens Panorama* documentation in particular was an innovative and original representation of the collaborative art project and this CD ROM led to further engagements with digital publishing such as the *CADE CD ROM 1997*. Over and above the creation of new public panorama works, I became increasingly aware of the potential of panorama as a narrative form. The potential for panoramic narrative was something I would further develop in later works such as *Apoll8* and *Narvik's complaint*.

Panoramas referred to in the exegesis:

Bergen 1994.

The first panorama workshop was hosted by the Vestlandets Kunstakademi in Bergen, Norway, in May 1994. The 'Panorama Bergen' was originated primarily with the use of digitised photo-collage and these pictures were edited in such a way that a unique and 'new' skyline of Bergen was formed.

The 'Panorama Bergen' proved an invaluable learning experience, informing and refining the pedagogical approach that would prove more successful in successive panorama projects.

Athens 1997.

In 1997 the panorama project was organised under the auspices of ELIA and adopted as a "Master class" of ELIA's

Fine Art thematic network. The workshop was open to international students and involved a wide range of participants from both Eastern, Western and Northern Europe, as well as one student from an Australian University.

London 2000.

The workshop was organised under the auspices of ELIA in co-operation with the Chelsea College of Art & Design and Central Saint Martin's School of Art and Design, London. It recruited participants from an international group of students and institutions. The location for the panorama was the historic Roundhouse in Camden. This building was designed and built by George Stephenson in the mid-nineteenth century and is a landmark cultural venue in London. This Panorama was a Millennium event and the panorama was the most technically advanced project to this date, enabling the use of digital colour and the creation of a massive single digital print of approximately (105m x 6m) suspended in the round.

Catalogue and CD ROM publication documentation is contained in the evidence portfolio of this submission.

Diggle, J. *Panorama Athens* (1998) Directed and Designed [CD ROM]. Amsterdam: ELIA.

Petrogkona, M., Bouma, H., van Dam, B., Libens, D., Depoorter, E. (1998) *Panorama Athens: interdisciplinary workshop october 1997*. Amsterdam: European League of

Institutes of the Arts.

Rombout, T. (ed.) (2006) *The Panorama Phenomenon*. Den Haag: Uitgeverij P/F Kunstbeeld, Panorama Mesdag.

Koller, G. (ed.) (2010) *The Panorama in the Old World and the New*. Germany: Büro Wilhelm. Verlag Koch-Schmit-Wilhelm GbR.

Diggle, J., Libens, D., Proctor, C. and Bishop, R. (2000) *The London Panorama Book*. Amsterdam: ELIA.

The London Panorama (2000) Directed by Jeremy Diggle [CD ROM]. Amsterdam: ELIA.

Section 8. Performance Lectures

Oct 11.2004.16.61

From: Johannes.Vermeer. bel8td@mac.com

Dear Jeremy:

Found in a garage in Warnerford Strasse, Gent. A suitcase containing 22 assorted binoculars and a stereo viewer. The 88 lenses of these binocular each bears witness to the last time they were used.

Each pair is labelled.

1: Eyes starring out over a battle field. Colliers wood 1915

2: Lincoln at the theatre.

3: The Belgrano sinking.

4: Russian soldiers enter a bunker in Berlin.

5: A view of the ground at Lakehurst.

6: A man pulls the trigger in Dallas.

7. Shackleton's last view of South Georgia.

8:

10: Ayrton Senna leaves the road.

11: Diana enters the tunnel.

- 12: The Dalai Lama leaves Tibet.**
- 13: John Lennon falls to a bullet.**
- 14: Martin Luther King collapsed on the balcony.**
- 15: A bomb goes off.**
- 16: An iceberg is sighted.**
- 17: Concorde crashes.**
- 18: A lovers kiss**
- 19: Primo Levi walks out of Auschwitz.**
- 20: A man and woman leap from twin towers.**
- 21: Supernova -69202 explodes.**
- 22: Glenn Miller flies into a cloud.**
- 23: A child's pair of plastic binoculars individually wrapped, not labelled, these will show you only darkness.**

8: Fragmentary Glimpses of Omniana. Performative Lectures.

In this section I present a transcription of one of a range of performative lectures that I have presented over many years of practice. The performative lectures deal with a fragmentary aspect of my practice, which is hard to evidence in any traditional sense of documentation, because these are an aspect of my interest in the oral tradition of storytelling. This

element of my practice forms an important part of my expressive and intellectual engagement with audience and with the formation and communication of ideas about memory, narrative and technology through oral and visual story telling. They rely on the specifics of the moment and the context within which they occur. The dynamic of the lectures and the content of the lectures are intended to create memory through performance. Because they are temporal events, which are about the moment, about a transaction of ideas that are fluid and subject to change through time, they are designed to be experienced and not necessarily documented; therefore, most of my lectures have remained undocumented. They also remain undocumented because I have deliberately chosen, through the telling of the story, to allow the narrative and content to be passed on as hearsay, unfixed and subject to the unreliability of retelling. As an academic and researcher I have been interested in the role of the artist to question and contradict accepted ideas and authorities. As an artist myself, I have been interested in the authority of the academic and researcher to create and pass on knowledge. And as a storyteller with one foot in each camp as both artist and academic, my character the lecturer, who encompasses both, is necessarily an unreliable narrator.

Whenever it has been within my control I have consciously avoided situations where recording or other forms of documentation have been in place. However, there have been some unavoidable instances of recordings or snippets of these lectures, which have been made available on the internet.

Specifically though, in this section I will refer to and present a reconstructed transcription of a performance lecture, which was delivered to the Land / Water and Visual Arts symposium (*Relic*) 2009. This material is available as the result of a very deliberate negotiation of form, as an alternative to the creation of a formal conference paper and it is referenced here in the published form as part of the evidence portfolio within this exegesis. The performance lecture is contained in the submitted book *Relic* and is the chapter ‘*Fragmentary Glimpses of Omniana*’ pages 76 to 92.

There are many other lectures which I could cite here, which have been performed in a wide variety of contexts and occasions from conferences, festivals and formal academic presentations. It would be a contrivance though to reconstruct more than an illustration here of the form and the contents of just a few of the many other lectures. I will mention just a couple briefly by way of contextualisation of this practice before proceeding to the transcription of the performance lecture “*Fragmentary Glimpses of Omniana*”.

I have been appointed to eight different professorial positions at seven different universities since 1999. As an element of these appointments I have been required to make various inaugural or formal professorial lectures. I have chosen in each instance to create and perform a new narrative lecture. My first inaugural Professorial Lecture was presented at the Robert Gordon University in 2000 entitled “*Omniana*”.

In this lecture I built upon the central narrative of a hypertext

internet based story *The Salmon Fishing Woman*, which I had been developing as an experimental vehicle for multimedia storytelling and which I briefly touched upon in section (5.8:). Within that story I had begun to develop epistolic communications between the central characters and it was this particular aspect that would develop further in latter narrative works. Another formal professorial lecture that I will mention briefly was “*A conversation with Vermeer*” presented at the University of Plymouth in 2005. This was a lecture that told the story of my own studio investigations into the working methods of Vermeer and some insights that I believed I had discovered about the technical and practical approaches of Vermeer to his own special intimate paintings. It was in this performance lecture that I first developed a dialogue between myself as narrator and the character of Vermeer as a vehicle for story telling.

This performance lecture then had a second iteration as a public performance lecture *A Painter’s Theory* at the Blow Festival in Wellington, New Zealand in 2009. This kind of narrative epistolic dialogue would latter develop into more sophisticated narrative works such as *Apoll8*, which I will cite in a latter section of this exegesis (11). In 2008 I created a performance lecture as my public Professorial Lecture at Massey University, Wellington, New Zealand called “*Apollo8 a journey to the Moon*”. In this lecture I build upon the interaction between storyteller and character through the device of the author as a central character in the narrative and the creation of a twin central character who acts out a psychological

journey to the Moon. This performance lecture built upon the web-based narrative *Apoll8* that had arisen from the first exhibition of this work, which will be cited in a later section of this exegesis (11). However this performative lecture gave rise to a substantial development in the narrative that has become the [eBook Apoll8](#), attached as an appendix in the eBook evidence portfolio of this exegesis. This lecture has had many further iterations and then became incorporated into other lectures which explored the core narrative of the *Apoll8* work. One example of this is *Developing digital narratives through object, space and time*, which was recorded at Falmouth University in 2011, and can be accessed at:

<http://projects.falmouth.ac.uk/digital-economy-research-lectures/developing-digital-narratives-object-space-time/>

Finally, I will mention a lecture which arose as a result of a series of performative re-enactments of the original Apollo 11 Moon walk. I had done a series of performative reenactments of the first Moon walk at various locations in a number of countries and this lecture called *Luna Firma* formed part of the Framing Time and Space (Repeats and Returns in Photography) symposium, at the University of Plymouth 2009. *Luna Firma* is a live performance work that accurately re-enacts the Apollo 11 Moon walk. It is an original piece of performance that is multi-sited and enquires into a deeper understanding of the terror of exploration and in particular how we remembered and related to the first Moon landings of

Apollo 11 and 12. The work explores ideas of the interpretation of performance space, location, documentation and enactment. It looks specifically at the idea of re-invoking a past history and the act of performance as an act of research enquiry into the original documentation of the Apollo 11 Moon walk. The work was performed as a lecture at the University of Plymouth, then aspects of the walk re-performed anonymously outside the National Gallery of Scotland in Edinburgh, at an outdoor swimming pool in Vancouver and in St Michaels Church in central Gent, Belgium during 2009.

8.1: What follows here is the text of the performance lecture *Fragmentary Glimpses of Omniana* from the Land /Water symposium at the University of Plymouth. *Fragmentary Glimpses of Omniana* is a piece of writing that transcribes the performance narrative of a false memory of a journey to the site of Wittgenstein's hut in Norway. The performance is an original piece of narrative visualisation and storytelling. It used an immersive 3D stereo viewing device through which, I as storyteller/performer, travel to and describe the journey to a live audience. The piece explores what it is to understand a sense of place, what it is to "be there".

Oct 12.2004.16.57

From: Jeremy.diggle be4tl@mac.com

Dear Johannes:

Fragmentary Glimpses of Omniana' (Everything)

Transcribed from the performance narratives:

I'm going to take a risk.

Two parts,

no explanation.

It's whaet it is.

...And there's a box.

So! Two artists, Daniel Liebens and Jacob Schokking (one Belgian, one Dutch, both countrymen of yours). They set out on a Norwegian journey in 1992. They would end up somewhere that I would not. I could have, I would have, travelled with them had it not been for being recalled back to England for a couple of days on urgent business. Daniel and Jacob travelled as planned and ended up in Skjolden at the end of Lustrafjord. When I returned to Norway, to the small Wooden-house at number 4 Nagelgaden in Bergen where we were based, I waited for them to come back. On their return they brought with them stories and a gift, a fragment of a hut. Later Daniel and Jacob would publish a box set of 3D View-Master stereo images from this journey. (*see footnote). It is these View-Master slides that I will use today as my guide on

this journey to somewhere.

From: Johannes.Vermeer. bel8td@mac.com

“Jeremy are you speaking to the audience whilst looking into a View-Master 3D viewer?”

Yes.

What I'm looking at is a little red lighthouse; beside it are a telegraph pole and a large fjord-lake. The lighthouse is only about 2 meters tall but it's on top of a very large granite outcrop. Behind the lighthouse is a bush, beyond the bush is the lake lying absolutely calm. The surface of the lake is disturbed by the wind and there's a dark channel running through the centre of the lake where it must be absolutely calm, because the rest of the lake is reflecting the sky, which is a kind of white-ish grey. In the far distance is a fjell, in the near distance to the left is another fjell with trees on it and down at the very corner of the fjord to the left behind the bush are some houses and this is the departure point above the pier on the Sognefjord which lies about 140 kilometres north from Bergen on the west coast of Norway. I'm now walking along a small road and on the left hand side are some flowers, they're foxgloves, on the right hand side, on the curve, on the edge of the grass is a ditch with stinging nettles, to the left there is a white dotted line ...and here's a Volvo just passing. Directly in front of me is a road sign that reads Skjolden. It's a blue sign, about 2 metres high and it says 1 kilometre, Skjolden. There's

a square camp site symbol and also there's a crossed fork and spoon, there's a bed and a hut with a tree beside it and the symbols of a camping ground, 1 kilometre up the road. Just beyond the road sign is a long telegraph pole. It is densely wooded and to the left hand side are evergreens and to the right-hand side here and there are broad leaf trees, probably Birch.

I'm now standing on the crest of a hill somewhere else on Sognefjord looking down across some very large wooden houses, a couple of old Volvos parked up. It could be a guest house, probably an old farm. Beside it is a yellow wooden building, with a corrugated roof, behind it some trees and some rusty roofs. Looking down over the top of the large buildings, over their chimneys is the lake. On the far side of the lake is a hillside rising to the right with shadows cast by the clouds above. To the left hand side of the lake is another fell rising directly and very steeply out of the water. And, in the far distance, yet another fell. It's obviously very early in the morning, it's sunny and below... running from this point where I stand, down the hill to the back of the houses is a very tall, very thick pasture of grass.

Putting the viewer down: - an aside...

I understand this landscape only by these words, not through memory, not through actual lived experience, but by words coming into being as I look through this viewer. It (the landscape) has no other meaning for me than that which is formed by descriptive words giving shape to an idea.

...And if you will allow yourself a small indulgence, by way of marking the start of this journey, you're going to give a quick toast in a language that is now dead, that doesn't exist anymore. It's been sleeping for a thousand years, dormant within your modern English, a thousand year old North Sea language, an utterance from the first lines of the prologue to *Beowulf*.

Hwæt! We Gardena in geardagum,
þeodcyninga, þrym gefrunon,
hu ða æþelingas ellen fremedon.

The emphasis here is upon “Hwæt!”

Johannes, I understand.

“Hwæt” is sometimes translated as “attend”. There are a number of interpretations but essentially it is a word that has no precise translation. As an example you could liken it to one of those great German words, which we've incorporated into contemporary English, like “angst”, for which there is no precise English equivalent. “Hwæt”...the very sound of it, challenges you to attend, bare witness, listen, gather, a perfect beginning word. For instance in the recent translation of the *Beowulf*, by Seamus Heaney, he has translated “Hwæt” to be the word “So”, but only Seamus Heaney can say the word “So” in such a way as to be a call to attention, a beginning, and

yet carry the sense of a continued moment as if a story or anecdote, having been told, is about to be superseded by a far grander narrative... So! (What!)...You had better listen.

“Attend”, an invitation to pay attention, nothing will happen unless you pay attention, this is the beginning of the story.”

Putting the viewer back to my eyes: -

I'm down at the water's edge. This fjord is not an entirely enclosed lake, the water is running very fast in front of me. You can tell by the disturbance that it obviously has a deep river current running beneath the still waters, there's a maelstrom...another of those appropriate words that we've relatively recently acquired into everyday English language.

Edgar Allan Poe uses it in the title of his short story “*A Descent into the Maelstrom*” in 1841

It's obviously extremely dangerous to cross this water. It must be about 100 metres across and on the other side are fishing cottages. What I recognise is that I'm now standing on the opposite side to the one I described previously. The very large house in the distance is the house that I was stood behind on the top of the crest of a hill looking down over the thick pasture grass. Looking back this way, there is an extremely large fell rising straight out behind a bluff where I was stood before which is capped by trees. It rises so steeply there is no way you could judge where the top of it would end. The large fishing cottage to my left is brilliant white in the sunshine as are all these buildings. This is the settlement of Skjolden,

which has about 160 people in it. It's an ancient crossroads on the Sognefjord, just up from an area outside Bergen called Flam and the population has been consistently 160 for about four or five hundred years.

I think I'm going to be getting into a boat.

Putting the viewer down: - an aside...

Back in 1992 as I remember it, (this is my recollection of that occasion and memory can sometimes be false), I saw the most extraordinary thing in Bergen harbour. It was the departure of three Viking boat replicas. Although they were replicas they were in every-way authentic, they were the real-thing. Hand built in a place like the Flam Wharf beyond Aurland and Onstad, in the heart of a fjord or possibly on inlet by the coast in Iceland. They came into Bergen Harbour on May 17th, which is Norway's national day, in order to make a formal departure, to sail to America and to prove that it was possible that the likes of Leif Erikson and the various Norwegian, Danish and Icelandic crews of history had the ability to navigate those boats in open seas to America.

The remarkable thing about watching from the top of a high-rise building on the waterfront in Bergen was to see them surrounded literally by a thousand other small boats. The whole of Bergen harbour appeared to be completely full of these fibreglass and wooden flotsam punctuated by dark-islands of larger naval vessels.

At precisely four o'clock in the afternoon there was a light

breeze from the east and absolute silence. The three Viking boats, sails unfurled, let loose their moorings ever so slowly. Everything else in the harbour then moved almost imperceptibly to the left and parted, leaving just one dark stream of water. The three boats sailed out through the harbour, through the armada of small craft. The sirens of the naval boats sounded, a submarine appeared, and all the flotsam of small boats turned and followed them out to the open sea. It was the most extraordinary scene.

Putting the viewer back to his eyes: -

What I'm looking at now is a large wooden hut. In the foreground in the long grass are roof tiles, those zigzagged, curly, brick red roof tiles. Beyond that is a small line of very young birch trees, very, very thin and a tiny fir tree and over to my left hand side some pieces of wood and debris of building and a role of large agricultural chicken wire. The sun is shining down and it's very dappled grass. Beyond that little line, filling three-quarters of this picture that I'm looking at, is this white grey wooden hut three storeys high; it's has a basement and two storeys with a steep leaning roof which is tiled in grey, I can't quite understand why there are all these red roofing tiles, for this is a grey roofed classic Norwegian wood building. A large pile of freshly chopped wood is outside a small extension to the back of the house and over to the left a large area of concrete with tarpaulin and if I look very carefully by the drainpipe there's a small blue plaque.

I'm now on the road again. I'm looking this way into the

sunshine. An extremely dark line of trees to my left; I'm at the edge of a bridge!

There's a red caution sign... red almost barbershop red, white, red, white... stood about a metre tall on a small pole with a concrete base, by the white dotted line that runs along the side of the bridge. I'm on tarmac by the edge of the bridge and the water's running under it and there's a road sign beyond the bridge which I can't read. No matter how hard I try I can't read it and behind which are some very tall, elegant fir trees and then the bright sunlit, tree-clad fell and another electric pylon. Sun across the bridge, silence, I don't think a car's come through here for several hours.

Putting the viewer down: - an aside...

At this moment I genuinely don't know where I am going, just following in the tracks of my two friends.

Putting the viewer back to his eyes: -

We're in a boat. A rowing boat and I'm sitting at the back of the boat. Jacob has one oar to the right and Daniel has an oar to the left. The oar is above the water. The water is chromium-oxide green, a sort of milky, milky blue green. There is a triangle of light. The water is unbroken. The oar sits quarter of a metre above. It's a very old oar, very long, the full horizon of the picture. Above that, right through the centre of the picture is a pure glass-cut line on the water where the water meets a rising fell.

Grey, green, brown, granite, with some trees, a cave and to the

right a landing point brightly lit, and behind that a very large hill covered in trees and there is a beautiful blue sky. We're obviously heading in the direction of the triangle of light on the other side. It looks like Austria.

We're now in the middle of the lake and I'm standing up and I can see through the binoculars a platform, a platform of very large, granite bricks, on top of a granite cliff face. It must be 100 metres above the waterline. To the right is a flagpole.

There's no wind but there is a flag on it. It's in red and white, an Austrian flag, surrounded by birch trees which look like blood vessels sticking up out of the ground, drained of blood which has gone down into the granite and down into the lake... The blue sky above, one large dark tree on the fore shore.

At this point we are arriving at what appears to be a sort of Robinson-Crusoe-like platform of white sand and clear azure blue water, where you can see the sand reflecting beneath it. There's a bush, rhododendrons, oak, a very rare species in Norway. Thickets of birch and we're very close to a large lump of granite here. It looks like we're on the edge of some exotic swimming pool really. We're about to make landfall and in front of me in the centre of the picture through the gap in the trees is a pathway, where very few people have walked. You can tell it's a pathway, there's a gap, a small dark gap in the trees with smaller evergreens growing and one fine line of stinging nettles, which obviously follows the path of the last person who walked through.

Very strong sunlight dappling through.

And we make landfall and the gap opens up as we walk up through the trees but the rocks are thickly covered in wet, sphagnum moss. Small beech trees are growing here and grass, in fact these are all beech trees and through the gap is a small bluff of rock and a ladder and what looks like a well worn footpath that has been carved at some point in the past but has been worn down so it looks like it's always been there, but it has obviously been cut into the granite face. And sticking out of that rock is a multitude of young sapling trees. No evergreens here. Some old tin can. And over here evidence of someone was having had a bonfire last spring? Last autumn? A year old bonfire and some Fox Gloves.

It's a very monotonous landscape, very dense but now we are getting to a very well worn brick, heavily overgrown footpath, with a dangerous stone surface. It's the sort of stone where you can imagine if you get it wrong you're going to break your ankle and you're not going to get any further up. There's a piece of graffiti on the left hand side...

...But it's a very easy walk up here. It's a tourist path and we're very close to the base of that large granite bluff. Small cave, but it's not deep, just an indentation and a beautiful birch tree, white and grey.

We're now right on the edge of a precipice. We have to go round this large rock fall. Someone has graffitied in red 'Fuck'. But the footpath winds round, it's almost like a medieval

church stairwell going up, it's turning, you could be in a castle but you're not. Beyond it is a large, grey cliff face that goes down to the lake below. There's a large, metal pole sticking out in the distance catching the light. Beyond that is a bird, the first wildlife I've seen. There's a bird holding station. It's some kind of small falcon. Beyond which are a line of trees again hanging precariously on this cliff face.

I've walked all the way up the path and now I'm looking down onto this extraordinary turquoise blue lake but the angle I'm looking down I can see reflected the fell on the cliff face beyond and the trees but I'm looking at almost three-quarters of a fjord of turquoise water but in front of that is a piece of scaffolding. A scaffolding pole, upturned angular u-form, with a hook and beyond that some small trees, some parsleys and cow parsley and an incredibly steep granite slope with bleached grass and a deep, deep fall.

We are somewhere now. We're at the platform which is a foundation, huge pieces of carved granite rock foundation with dark shadows of the trees and beyond which again is this cliff face of granite but it is entirely surrounded by small birch.

It's a large square foundation with plants standing up inside it. It's very wet. It barely sticks out of the ground like part of an archaeological dig, but it's there. It's ready to take a new platform on top. There's a deep hole, it's obviously a cellar hole. The sphagnum moss is rotting. There are dry patches and extremely wet patches. There are fresh footprints probably Jacob Schokking's, the odd brick, but nothing else.

We're now looking out across the lake, a deep, deep, lake in the far distance. A large corner of platform lies in front of me, with the view deep down and a tree on the right with sun coming across the incredibly sturdily built platform. This is a late nineteenth century or maybe early twentieth century platform. In the far distance though are some agricultural fields. There's a field of cows. It must be a kilometre away. Very small trees line it, there's a very slight slope. A field of cows and a farm house, and the wind is just catching the lake from the left.

We're now in front of a steep, two metre tall front-face of the platform. There's a hole in front of the platform that juts out with a water pipe and you can see that from the platform here, a metre out and then it drops absolutely sheer down to the lake below. Beyond which is a sheer face of cliff because it drops away again on the right hand side and there's a gap down to the lake and the cliff beyond.

I'm now standing right in the middle of the platform and there's a deep hole with old iron and rubber junk and a plant growing out of it. To the back of the platform, again surrounded by new birch trees, is a hole and some wood. It's got pieces of wood, small, small fragments of wood. This is the toilet, the outside loo, the only fragments of wood that are left from this hut.

Jacob Shocking is kneeling down and picking a fragment from the hole. He's putting it in a grey box. He's sniffing it. The sun is shining. He's got the Austrian flag in his hands.

End of Part 1.

Jeremy is holding a fragment of aged grey wood

“I have a fragment of Wittgenstein’s hut. In my eyes that’s about as good as it gets for a secular relic.

I guess you could test if for DNA.

I know of only three other fragments, I’ve got one, and I believe Daniel’s got one and Jacob’s got one. The rest are at the site of the relic, the hut above the fjord, a kind of ‘site of special philosophical interest’ ...

So, this presentation, the telling, a journey to somewhere, was a kind of humble attempt to demonstrate in practice my understanding of a fragment of the philosophy of Wittgenstein. This understanding can be paraphrased as “nothing exists as thoughts or ideas, all is framed in the moment, in language this is how things are.”

So, this is the first time through telling, that I’ve gone on the journey to see Wittgenstein’s hut. Originally when I had intended to travel with my two friends up to Skjolden I had had to travel back to England and by the time I got back to the house in Bergen they had already been. This is the telling of a journey never taken.

(Looking at the fragment of wood in his hands)

So, I wasn’t there when this relic was removed.

It was a gift

And it would not matter if this relic wasn't what it is reported to be either, because I believe it is authentic. I know it is what it is and it is the knowledge of that which is important... that is the point.

The interesting thing for me, in this moment, is to experience someone else's view of the landscape and to share their binocular recording of that landscape through a telling of a journey to somewhere that I have never been - to see through their fixed view, no movement, pre-selected, virtual and to understand something. Obviously I can't smell it; I can't taste it and I have not crossed the water or climbed the hills with the ache in my legs. However, I can travel with them there having read some of Wittgenstein books and holding this relic...

Taking the fragment of Wittgenstein's hut and placing it beneath his nose Jeremy makes an allusion to reliquary "fragments of the true cross".

(Joking)... As a result I feel a little bit closer to Wittgenstein, although I must say I feel even closer to Wittgenstein when I inhale...

Of course this fragment could be entirely a fiction but then I suspect Wittgenstein's Norway has certainly been fictionalised to.

“Bugger off! Get your cows out the way I’m trying to think!” comes to mind when imagining Ludwig’s concentrated stare into the far distance.

This is surely one of the great fictions about Wittgenstein the hermit. In fact he had people round him. He entertained them and could apparently be convivial. The only thing that he would apparently insist upon was that he would not speak to you until he had finished his work.

Part Two:

A screening of a series of images and text with audio track.

Con conversationally and by way of setting a context (holding the fragment of wood): -

I wanted to show this work as an example of another particular experience of landscape and to place the first ‘telling’ within a context of another particular journey, one that I under took long ago in 1975. This series of photographs, the book, record an experience of time and place in the Norwegian landscape. The photographs, the book, eventually led to a performative-action and the graffiti work, which I carried out at the site of a Second World War German bunker above the coastal entrance to Bergen harbour. The work was very much a youthful and emotional response to a particular place and circumstance, with a resulting argument encapsulated within the book-work, that is, simply, you can’t

vandalise Nazi architecture. That early personal discovery however came about through a journey to a place on a map, a city on the coast and the discovery of a 'somewhere' the likes of which I had never experienced before.

I first went to Norway on a quest to find *Beowulf*, to undertake a journey of self-discovery, a search for the hero within. I didn't find that hero, but I did discover an evocative landscape, both internal and external. *Beowulf* was the text I carried with me when I set off for those foreign shores on a boat from Newcastle. It was a kind of divinational map of where I wanted to go. I would use it as an interpretive tool a kind of 'metaphysical rough guide' to the landscape.

Over the years the *Beowulf* has become so intertwined with my experience of Norway, that there is now a conflict that I have in the separation between the memory of the physical experience of being in that particular landscape, and the metaphysical euphoria of being young and on a landscape journey, that I interpreted through that particular word-hoard of the story.

I inherited automatically through the Christian tradition of my early childhood education and upbringing, an experience of going out into the landscape, especially wilderness, one that is shot through with a sense of wonder and awe for nature. A landscape full of metaphysics and empathy with a creator God, no matter how atheistic I have become through rational learning, for example through the reading and interpretation of the expulsion of metaphysics by someone like Wittgenstein.

I'm sure that I probably fail to understand much of Wittgenstein, but the irony, even if I misunderstand completely, amuses me anyway, of the great Austrian who has to go into the wilderness to perch in a hut, above a fjord, in order to really focus down on the expulsion of metaphysics from the mind, so as to free and to liberate thought and to understand that you bring things into being through language at the moment you think them.

So, everything happens in real time. I now think the experience of walking out in nature is like this. It's not predetermined; you can't really go out there with a pre-thought of what you are going to experience, although at one level we always do, as we have this internal communicator that's always conversing within ourselves. To experience the landscape I now think you have to get the sequence right, making sure that the internal communicator isn't telling you what to see, but what you are seeing.

(Looking at the fragment of wood in his hands)

Although it's a fragment, this is not the myth of the hut, this is the hut.

What I have tried to set out here, albeit probably relatively unsuccessfully, is to say that this fragment (a true relic), extracted from a "somewhere", represents a very particular intellectual landscape, the one which I now inhabit. By way of contrast I have shown another landscape, 'somewhere else' from another point of view, from another position in time and

place shaped by another and different worldview.

In conclusion

When I was a First Year art student at St Martin's School of Art, we had a Korean professor of painting come to visit. He took a liking to me because I was exploring landscape and figurative work with which he felt he could engage. I was painting using traditional received notions of Renaissance perspective. This professor sat me down one day and tried to explain that when interpreting the landscape, traditional Renaissance perspective views of the landscape can be a trap, because what they imply is that somewhere out there is a 'beautiful view'. This notion of a perspective view of the landscape leads you to go out into the landscape and paint the beautiful view. You put a rectangle around it, you take it away and ultimately you trade it. It becomes an object of material exchange. You, as 'genius', extract this beautiful view for your own esteem, to either own it or trade it. The beautiful view, as represented through the convention of perspective, is captured nature. The argument, he put forward, followed that you have seen 'somewhere' over there and you have captured everything that radiates from that point, to which all lines appear to recede into the distance, into the centre of your rectangle. However, you have composed the beautiful view from a single point of view, a point of view that lacks knowledge. The

professor explained that in another tradition you would go into the landscape and you would find a beautiful view and this would be somewhere to get to. So you would then have to travel from here, the point where you perceive the beautiful view, to there, the point of knowledge. On that journey through the landscape you record the experience and when you get 'somewhere'... that is the beautiful view. Everything that is the experience of the landscape, between where you saw where you wanted to go and to where you have arrived, is the embodiment of the landscape. In essence a complete reversal of traditional perspective, because from that point of view of Renaissance perspective, you now stand at the vanishing point, looking back to the original point of perception, the lines of radiation are reversed. If you just stand and look out at the view you have no experience of it. The 'somewhere' is actually over there. If you look back, you already know something. That something has stuck with me, the idea that you are nowhere until you've been somewhere. So there was a kind of relationship to that. And for me the 'somewhere' is here.

(Holding out the fragment of wood)

So, if there was a place to get to, this 'somewhere' exists in my hands. It's only real there. It's not real anywhere else, the journey to it is a journey to somewhere. The 'somewhere' is where you arrive and you extract something physical, otherwise it always remains elsewhere. A journey-away. I think it becomes somewhere at the point of determination,

where you say, this is ‘somewhere’.

This is the beautiful view. This is the body of the text.

*(Foot note): (Daniel Libens & Jacob F. Schokking. *Hutte e³ Haus Wittgenstein*. Published by Holland House 1995. ISBN 87-985453-0-2).

Publication documentation is contained in the evidence portfolio of this submission.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. (2009) *Fragmentary Glimpses of Omniana (everything)*, in Wells, L. and Standing, S. (eds.) *Relic*. Plymouth: University of Plymouth Press, p. 76,93.

Diggle, J. (2000) *Omniana* [multimedia], Professorial Lecture. Robert Gordon University. 29 November.

<http://www4.rgu.ac.uk/files/RGYouNov00.pdf>

<http://www4.rgu.ac.uk/files/RGYouFeb2001.pdf>

Diggle, J. (2005) *Vermeer. Alchemy* [Lecture and exhibition],

Ways of doing (aesthetics as research). Columbia University. Teachers College. November.

Diggle, J. (2007) *Vermeer: A Painter's Theory* [Public Lecture], Blow Festival 07. Massey University, Wellington.NZ. 8 November.

Diggle, J. (2008) *A conversation with Vermeer* [Multimedia Lecture], Professorial Lecture. University of Plymouth. .

Diggle, J. (2008) *Apoll8 and Narvik's Complaint* [Professorial Lecture], Blow Festival 08. Massey University. Wellington. NZ. 14 November.

Diggle, J. (2008) *Apollo8 a Journey to the Moon* [Multimedia Performance Lecture], Professorial Lecture. Massey University, Wellington, NZ.

Amery, M. (2009) *'Flying Under the Radar'*, Massey Research, (ISSN 1177-2247), p. 62,68.

Diggle, J. (2009) *The first Moon walk reinvoked. (Luna Firma)* [Performance Lecture], Framing Time and Place. Conference. University of Plymouth. 16 April.

Diggle, J. (2011) *Developing digital narratives through object, space and time* [Multimedia Performance Lecture], Digital economy research lectures. Falmouth University. 25 October.

<https://vimeo.com/32441378>

Section 9. Jump-Jet

From: Jeremy.diggles@mac.com

From my note book: *After the storm.*

What a night! The sea is grey-green and calm, the colour of her eyes when she left.

The clouds are moving in an easterly direction and the waves will soon be breaking on Scheveningen beach.

When I first saw the Mesdag I could tell that the dunes had shifted. The boats have changed but the peach haze on the horizon line still sat lightly above the brown sea. Looking around there is a solitary shag on every buoy in the harbour.

Johannes it is hard to know how to dress. It seems my jacket defines me more than my years.

What a night!

9: Jump-Jet (grid ref:51.987137, -4.473902)

In 1989 I created a propositional conceptual narrative work, which involved the burial of a Hawker Siddeley Harrier vertical take-off jet aircraft in Wales. The site of the propositional burial was woodland in a place called Cwm-Morgan at Capel Iwan. The premise of the work was that this buried jump-jet aeroplane would mimic the deployment of an aircraft ordinance decoy, such as those used by most if not all advanced militarised nations. The use of replica aircraft has been a standard deception strategy since the First World War. Decoys were particularly prevalent in the Cold War and this particular moment in time aligned with the fall of the Berlin Wall and the start of the collapse of the USSR. This particular burial decoy, a decoy of a decoy, was intended to attract the attention of spy-satellites and satellite surveillance systems. It was to be a disruptive visual communication an interference background noise, something on the edge of the radar, a blip that couldn't be ignored. The concept behind the work was a three dimensional pictographic oneway communication, a message in a bottle, buried deep in woodland in Wales. For the work to achieve an audience it would have to be constructed, performed and recorded in secret and remain secret as if hermetically sealed from the day to day normal world of transactions. However for the work to have an afterlife it would need to be a secret that leaked. The intended audience for the buried work was twofold; the intelligence services via reconnaissance spy satellite and a public audience through the creation of a narrative and seeding it as an urban myth. The

physical evidence for the existence of the work would literally be buried, and remain so either in perpetuity or until such time as the story of the existence of the piece gained credence. The work is a throw of the dice, “a will it- won’t it”, could it ever officially exist? The basis of the work is that secrets are secrets and that an urban myth is always deniable. However such myths play to the notion of conspiracy and have the potential to generate false truths, and in this case a desire for a false truth to become a self-fulfilling prophecy. The original work, if it ever had a physical reality, was never documented. The only real presence and existence of the work would be through three or four short conversations, which told about the existence of the burial amongst close and socially connected friends or colleagues, with the aim of seeding the urban myth.

Fifteen years later, in 2004, I was approached by the curator David Risley to contribute documentation of this burial piece for an exhibition at Bloomberg Space, London. The exhibition Plain Sight ran between 2 October and 20 November 2004. The work that I exhibited consisted of four photographic reconstructions of the burial of the jump-jet; two images showing the original burial site and the other two images depicting the subsequent passage of time at the site, between 1989 and 2004. In essence this work had returned full circle, as self-fulfilling prophecy, as a memory of the narrative of itself through urban myth at the end of the Cold War, which by 2004 was becoming little more than a memory itself.

<http://www.bloombergspace.com/exhibition/plain-sight/>

The contributing artists were Narda Alvardoo, Jeremy Diggle, Neville Gabie, Robert Gober, Emily Jacir, Jean-Michel Othoniel, Tere Recarens, Chemi Rosado-Seijo, Ed Ruscha, Yorgos Sapountzis, Ross Sinclair, Joao Tabarra and the curators were David Risley, Sacha Craddock, Stephen Hepworth, Graham Gussin.

9.1: After the exhibition at Bloomberg, the Jump-Jet work has also had a second and entirely new iteration as a series of curated images within a book of artists postcards. This work was exhibited as an integral part of an international touring exhibition called *Sightseeing*. This publication and exhibition featured the work of fifteen established New Zealand and German artist photographers and was funded by the Goethe Institute with assistance from Massey University. This original conceptual work has; through these three iterations of story, exhibition and publication, dealt with the temporal memory of a work in the landscape as both a narrative of memory and as a memory of the technology of the Cold War. The work has also taken on the form of a traditional means of epistological communication, the postcard. The publication formed an exhibition which toured throughout New Zealand and visited the UK.

Catalogue and publication documentation is contained in the evidence portfolio of this submission.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. (2004) *Jump-Jet* [propositional mixed media installation and documentation]. Available at:
<http://www.bloombergspace.com/exhibition/plain-sight/> .

Plain Sight (2004) London: Bloomberg SPACE.

Scott, H. and Shelton, A. (eds.) (2010) *Sightseeing*. Auckland: RIM BOOKS.

<http://www.rimbooks.com/wordpress/sightseeing>

Goethe Institute NZ and Massey University (2010) *Sightseeing*. Available at:

<http://www.rimbooks.com/wordpress/sightseeing>.

<http://www.stpaulst.aut.ac.nz/2011/sightseeing>

<http://dowse.org.nz/news/media-releases/2010/sightseeing>

<http://creative.massey.ac.nz/research/sightseeing/>

<http://lumiere.net.nz/index.php/sightseeing/>

Amery, M. (2009) *Flying Under the Radar*, Massey Research, (ISSN 1177-2247), p. 62,68.

Section 10. Patents

Oct 11.2004.16.61

From: Johannes.Vermeer. bel8td@mac.com

Dear Jeremy:

A recent road improvement at Etterbeek, near Brussels, unearthed cockpit remains of a Maurice Farman biplane. The front observers compartment had markings that matched exactly those of the Liebens twins. An interesting reference, I believe to be a photograph of them, will appear on page 26 of Jane's Fighting Aircraft of World War 1. (ISBN 1 85170 347 0). There will be no human remains, only a perfectly preserved wooden suitcase. It will be well known that the twins, who are ace aerial reconnaissance photographers, disobeyed orders and took off at dusk to experiment with a pinhole camera. The wooden suitcase to be found at the scene is the pinhole camera. A single negative image will be recovered from the interior.

J

10: Patents. Virtual display method and apparatus.

Woolner, Martin, Diggle, Jeremy: Virtual display of objects in a display space. University of Plymouth, November 14, 2007: GB2438012-A

Woolner, Martin, Diggle, Jeremy: Virtual display method and apparatus. University of Plymouth, February 11, 2009: EP2022010-A1

Woolner, Martin, Diggle, Jeremy: Virtual display method and apparatus. University of Plymouth, Woolner Martin, Diggle Jeremy, AKERS Noel James, November 15, 2007: WO/2007/129065A1

This section is by necessity technical and has an appendix embedded within the iBook submission, which follows on immediately from this introductory section presenting the full patent descriptions as published and registered under W02007129065A1. They are embedded and presented here in the exegesis as the most straight forward way to provide access to the evidence. It is not my intention to expect the reader to spend a great deal of time in detailed examination of the material by reading the full technical text of the patent within the appendix, but it is made available and appears here in full for the record and can also be browsed also at:-

<http://www.google.co.uk/patents/WO2007129065A1?cl=en>

10.1: The patent material, which is primarily a means by which to navigate a virtual space using panoramic imagery with embedded data was developed by myself in collaboration

with Associate Professor Martin Woolner at the University of Plymouth. The patents have a very wide range of applications. We co-share, as co-authors, all primary contributions equally. My specific intellectual contributions contained within this patent, as collaborator and equal originator, are built upon the research and knowledge developed through my work in panorama, through panoramic photography and panoramic narrative, as well as works within 3D modelling environments. The patent work also builds upon a shared interest of the inventors of this patent in Global Positioning Satellite technology, in relationship to terrestrial information positioning. The intellectual content within this patented material also combines ideas and work in the field of multimedia and other creative works related to the use of visual cyphers in relation to registration, recording and retrieval and has connections back to my work in holography. The following text forms the introductory explanation and description for the patent as registered. This comprehensive patent has been referenced by Microsoft: US8701040.

11.2: A method for providing a navigable virtual display, that comprises the steps of: providing a panoramic image of a space or location; preparing a navigable virtual panoramic image data set based upon the virtual image of the space; providing a multidimensional image of an object to be viewed; preparing a multidimensional image data set from the multidimensional image; and incorporating the multidimensional image data set into the virtual panoramic image data set to provide a virtual panoramic display image data set; wherein, when displayed,

the virtual panoramic display image data set provides a navigable virtual panoramic display of the imaged object in an image of the space or location. A system is also provided for displaying the virtual panoramas. The method and system may be used to display images of interior or exterior locations. The method and system find particular use in the exhibiting of museum artefacts and art collections and as an aid in navigation. A method for providing a navigable virtual display that comprises the steps of: providing a panoramic image of a display space; preparing a navigable virtual panoramic image data set based upon the virtual image of the space; providing a multidimensional image of an object to be viewed.

Publication documentation and web links are contained in the body of the text of this section.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. and Woolner, M. (2004) *Virtual display of objects in a display space United Kingdom Patent 2438012-A*. Available at: <http://www.directorypatent.com/GB/2438012-a.html>

Diggle, J. and Woolner, M. (2007) *Patent WO2007129065A1 - Virtual display method and apparatus*. Available at: <http://www.google.co.uk/patents/WO2007129065A1?cl=en>

See Appendix: for full details of The Patent Description

Section 11. Apoll8

Oct 11.2004.16.61

From: Johannes.Vermeer. bel8td@mac.com

Dear Jeremy:

.....Burial on the 28th July 2002 in the Old Brompton Rd Cemetery, London.

Howard Warner, the globe conservator at the National Maritime Museum Greenwich, walked slowly towards the grave of Reginald Warnerford. In the background the coffin containing the remains of the tall thin man was lifted by six pallbearers. Inside the coffin the hands of the tall thin man clutched the plastic handle of the cardboard suitcase.

Howard moved calmly towards the elaborate memorial headstone of Reginald Warnerford. In his hands he held a wreath of poppies. Self-consciously he placed the wreath upon the grave and stood back to contemplate the significance of the end of the project.

The coffin of the tall thin man was carried, camera left, as the panning shot moved a full 361 degrees, anti clockwise, towards the watching figure of a man, above and beyond the

grave of Warnerford. This dark figure watched everything from the catacomb.

"How did that look?"

"We will go one more time. Silence on set", "ACTION..."

The coffin contained.

A copy on VHS of the 'FALLS'.

A return 1st class sleeper ticket (berth L19) from Aberdeen to London dated the 27th June.

A gold ring stolen from the Maritime Museum, (removed from the finger of a dead German Airship-man and taken from the North Sea, lost from the Zeppelin L19).

The complete works of the Beatles.

A stereo camera containing shots of the traffic island opposite the entrance to Ryde Pier and at the bottom of Fore St. in the Isle of Wight.

An Apple Mac Titanium laptop containing a confession, rendered violently from someone in Rotterdam, who had been posing as a member of the teaching staff of the Robert Gordon University, whilst living it up in the Hotel New York.

A metal object wrapped in the left sleeve of an old green woollen jumper.

11: Apoll8 and Apoll8llopa. Online narrative and exhibitions. e-Book development.

Collectively the most ambitious narrative projects undertaken to date are *Apoll8* and its second iteration *Apoll8llopa*, and the installation work, which appears in the next section (12) of the exegesis *Narvik's Complaint* and its second iteration *Narvik's complaint 2* (Field of dreams). These two narrative works and their various iterations explore new ways of developing, constructing and engaging in storytelling. They also create innovative real-time relationships between exhibition, internet web-blogging and e-Book development. Additionally these narratives build upon experience that was gained from working in panorama, with these narrative works evolving as looping panoramic image texts.

11.1: Apoll8 and subsequently the second iteration of the project as *Apoll8llopa* is a narrative work that evolved through action and performance in real time, initially in relation to an originating exhibition. The initial premise of the work was to facilitate the evolution of a narrative in response to a dislocation across time-zones and hemispheres. At the outset the conditions for the first work were established, within which a narrative might possibly emerge. The conceptual framework for the work and the realisation of the work over time was generated through constructing a challenge for myself as artist, author and exhibitor. The challenge involved responding to a fixed condition, a response to a possibility

established by publicly exhibiting in one place, whilst responding to the exhibition from another antipodal place. This involved working across two extremities of time zone, Greenwich Mean Time and New Zealand Standard Time, which is 12 hours ahead of Coordinated Universal Time, known as UTC, with GMT being aligned with UTC during the winter months of daylight saving. This work explored the development of a new narrative structure for fiction and developed as an online blog based narrative in real time across two extremes of time zone. The initial point of departure being a series of Apollo astronaut signed envelopes exhibited in a gallery in the UK.

The work develops an inventive multi-perspective narrative exploration of character and authorial commentary. The outcome of the first exhibition and online narrative development of *Apoll8* through the period December 07 and January 08, became the material which was used in the second iteration of *Apoll8*, in an exhibition at the Macy Gallery at Columbia University, New York in 2010. The exhibition had the title *Apoll8llopA*. This second iteration of the work involved the installation of a 30 meter digital print of the narrative that had evolved in the first manifestation *Apoll8*.

The print being the page layout for the resolved narrative hypertext, which would become the [iBook Apoll8](#). (www.Apoll8.info). This exhibition also involved a data screen edit of the web narrative, which had evolved from the first experimental online and gallery exhibition *Apoll8*. I will also

briefly mention here the starting point of the first manifestation of the germ of the idea that would become *Apoll8*. This was a photographic essay from 2002, in a co-authored book called '*avant-nostalgia*'. This photographic essay can be seen in the evidence portfolio. The images that appear in this work helped to frame the original conceptual creation of the location and character, which would later emerge in the *Apoll8* narrative.

11.2: Apoll8 and Apoll8llopA create a narrative of memory, based upon the blog activities of both the author and the author as the character Howard Warner%ford. The narratives internal dialogue between the author and the character invoke the possibilities of an alternative history and memory of the first Moon landing. The vehicle for the interchange between the author of *Apoll8* and the emergence of its central character Howard Warner%ford is the writing of a web based blog narrative from the Southern Hemisphere in response to an exhibition being held simultaneously in the Northern Hemisphere, where the blog is being projected within the gallery. The piece plays with the time difference between the two hemisphere, with the author and character able to apparently work in real time in anticipation of events such as the news to respond in the gallery, because in effect the author is twelve hours ahead of the gallery. This is the beginning of explorations into the idea of making a narrative work of memory that places the artist in two place at the same time,

which eventuates in the work *Narvik's Complaint* (12). Both these works deal with memory and recall referring to ideas that come from physics to do with time and space and the possibility expressed in quantum mechanics of being in two places at one time.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

<http://www.tc.columbia.edu/a&h/arted/events.asp?eventID=7766&m=6&y=2010>

<http://www.tc.columbia.edu/academic/a%26hdept/events.asp?EventID=7767&m=6&y=2010>

<http://www.tc.columbia.edu/a&h/ArtEd/index.asp?Id=Macy+Gallery&Info=Exhibition+Schedule>

Publication documentation is contained in the eBook evidence portfolio of this submission.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. (2007) *'Apoll8 home'*, *Warner%oford blog/Authors notes*, 16 November. Available at: <http://www.apoll8.info>

Diggle, J. (2010) *Apoll8llopaA* [Exhibition installation, new media and printwork]. Available at: <http://www.tc.columbia.edu/a&h/arted/events.asp?eventID=7767&m=6&y=2010> .

Baldacchino, J. and Diggle, J. (2002) *avant-nostalgia: an excuse to pause*. Aberdeen, Scotland.: Unit for the Study of Philosophy in Art. ELIA.

Diggle, J. (2008) *Apoll8 home*. Available at:

<http://www.apoll8.info>

<http://www.tc.columbia.edu/a&h/arted/events.asp?eventID=7766&m=6&y=2010>

<http://www.tc.columbia.edu/academic/a%26hdept/events.asp?EventID=7767&m=6&y=2010>

<http://www.tc.columbia.edu/a&h/ArtEd/index.asp?Id=Macy+Gallery&Info=Exhibition+Schedule>

Amery, M. (2009) *'Flying Under the Radar'*, Massey Research, (ISSN 1177-2247), p. 62,68.

Diggle, J. (2014) *Apoll8* . Edited by John Baldacchino. Apoll8.info.: Unit for the Study of Philosophy in Art.

Diggle, J. (2015) *Apoll8 (Croucher of the Glimpse)*. Edited by John Baldacchino. Apple iBooks.: Unit for the Study of Philosophy in Art.

Section 12. Narvik's Complaint

June 21.2013.16.61

From: narvik's.complaint@mac.com

To myself:

A day of driving and fixing.

I can't phone home, the satellite has failed and the navigation systems are down, struck by lightning the telegraph pole is charcoal. BT can't translate this request... the farmhouse is too remote. The negatives that you both collected have been washed and refreshed ready for reprinting. The scanner shows more than had previously been thought and the miniature door has established itself in the basement as a plausible alternative... a worm hole to an original now in New York.

Still waiting...no dialing tone... Old friends, the 'originals', from the time before this started. They all said hello.

You turned to see if it was you, ghost like in the machine, time traveller, you have returned. Images fixed and ticking over, time to start again.

Narvik

12: Narvik's Complaint is a unique experimental time-based narrative construction, curated by Mark Williams, the Exhibitions Curator at the New Zealand National Film Archive. It involved the installation of a twenty four data screen narrative work with over 20,000 digital images sequenced to run continuously twenty four hours a day for forty days without repeating.

In 2009 I had started to develop a blog narrative to parallel and track in time the initiation of the search for the Higgs Boson particle by the Large Hadron Collider at Cern. After a false start due to technical and structural issues, the Large Hadron Collider re-launched in February 2010 and in parallel so did my installation work *Narvik's Complaint*, which was exhibited at the New Zealand Nation Film Archive between 17th February and April 1st 2010. The work ran for forty days and forty nights during this forty-three day period. In this narrative work, a autobiographical character traveled in two directions through time and space to forewarn himself against potentially perilous future life choices - But did the older character listen? And should he have? Maybe he had good advice from his younger self?

This narrative was developed to parallel in time, and to makes comment on, the Large Hadron Collider experiments in search of the Higgs Boson at CERN, which involved particles being sent in opposite directions in order to create a collision in search of new particles and phenomena. The digital images that run across all twenty-four data screens are in a panoramic

format and either scroll left to right, or right to left, depending on the relative position of the screen within the installation. Similarly the narrative moves through the data screens in two directions with the potential to generate a third narrative of memory through collision. The data screens are also accompanied by a video projection-loop of six minutes duration and a narrative computer screen display that symbolically encapsulates the third narrative. The work investigates and engages with an online audience as well as a gallery audience. The work develops through the collision of two separate streams of visual narrative and a real time blog. The narrative moves backwards and forward across time in both directions and these narrative streams revisit past memories and suggest that the past and present can communicate in a two-way dialogue, resulting in advice and revision, which can even alter events and behaviour both then and now. The exhibition received a very strong endorsement and review in New Zealand's leading online arts review magazine 'Eye Contact'.

<http://eyecontactartforum.blogspot.com.au/2010/02/mark-amery-tells-us-about-jeremy.html>

12.1: Narvik's Complaint 2. This is an experiment in narrative construction and formed a solo exhibition at the Cube 3 Gallery as part of an international conference on experimental panoramic video at the university of Plymouth. The work is a development of the original Narvik's complaint

that was initially exhibited and completed at the New Zealand Film Archive.

Field of Vision/Narvik's Complaint (2) The LHC is designed to collide particles together at a massive speed and energy and scientists have now been able to observe the existence of the Higgs Boson. This iteration of the piece is a digital image work, a 360-degree narrative mirror that reflects and muses upon the most recent 2013 CERN Large Hadron Collider experiments, with the indication that the Higgs Boson has now been discovered. Narvik's 2 was a reconfiguration of the original work and a subsequent iteration that was exhibited at Columbia University. Narvik's Complaint 2 was exhibited as part of the University of Plymouth's 360-Conference in 2013. This exhibition, as part of the conference on 360-degree panoramic video enabled the work to be recontextualised, specifically as a time-based panoramic narrative.

The temporal sequencing of the work and the panoramic scope of the work were made more evident in the simplified display adopted for the work in this context. This iteration of the work showed more explicitly the origination and sequencing of the images, it enabled an extrapolation of the process of editing and image manipulation and enhancement. The work also indicated a more complete connection with the overlaying of aspects of the installation work -69202. Images from the mapping of the cosmological model -69202 were referenced as a memory of the mapping of interior spaces, within the concept of the work by a range of photographs, from the

mapping of that piece. These images appeared as part of the transitional compositions of other interior spaces which formed the memory framework for the Narvik narrative.

Images from the mapping of the installation work -69202 acted as an historical mid-point (time and place) in the dialogue between antipodal time periods where the artist and his former self communicated. In this iterative second work, a character travelled in two directions through time and space to give advance warning of potentially perilous life choices - But did the younger man listen? And should he have? Maybe he took onboard the advice and changed his elder self?

In this new work, *Field of Vision*, a second character momentarily entered the narrative from a different point of view and Narvik started to communicate again. Throughout the exhibition, the audience was invited to engage with the narrative by visiting this blog at www.diggle.info and following the links.

<https://www1.plymouth.ac.uk/icci/360/Pages/events.aspx>

<https://www.facebook.com/ICCI360/posts/629271333757410>

<http://www1.plymouth.ac.uk/icci/Pages/Jeremy-Diggle-.aspx>

12.2: These two works engage with a narrative of temporality, memory and technology and in doing so generate narrative storytelling that actively alters and escapes traditional boundaries of sequencing and construction, with the memory

narrative transmuting between deferent formal boundaries, by the use of the technology and through directly playing with concepts sequence in time. The *Narvik* works and the *Apoll8* works engage in a two-way dialogue between author and character as one. In *Narvik's Complaint*, the author is both in the present and simultaneously in the past, communicating as a character back and forth between two time zones, 1976 and the present day. In *Apoll8* the author and the character participate across global time zones between each other and with an audience. There is a twelve hours separation between audience and author, who works at night so as to provide new material and responses to events for the audiences' daytime. These works share a common dialogue between character-protagonist and author exposing the border line between the inner and outer worlds, between the character of the inner-communicator of the author and the evolving externalised communicator of the character, as they engage in a form of transfiguration.

The core concept of *Narvik's Complaint*, is that you can't be in two places at one time. The work attempts to visually collide two flows of narrative to create a third space where the contradiction occurs, which exposes the simple concept that the author, the artist and the character is in two places at one time. The 1976 self is integrally a part of the 2010 self and inseparable, as are the characters from the artist and author. They are inseparable; the memory chain of past recollections, thoughts and actions have become essentially moments of becoming in the present and in the immediate past. These

works could also be classed as ‘Memory Wrecks’ with much in common with the early holographic pieces, washed up and deposited at a point in time as flotsam and jetsam. These are works of memories and thoughts that would not have come into being, in this time and place, without the technology to stimulate and deliver these thoughts, as a technology of memory and a memory of narrative, through a memory of time.

The second third and fourth iterations of these works rely on the archival retrieval and the capacity of the technology to continue to replay the outcomes of the experiments in time, which created both the narratives and the memories that informed the narrative compositions and each replaying of the works recognises its shift in time and space, with the act of remembrance of the original confining the previous to a narrative of time.

Exhibition and publication documentation is contained in the evidence portfolio of this submission and within the eBook.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

Diggle, J. (2008) *Narvik's*. Available at:
<http://www.narviks.info>

Diggle, J. (2010) *'Narvik's 5 2'*, Narvik's Complaint, Available at: <http://www.narviks.info>

Diggle, J. (2010) *'Don't go dressed as a horse'*, Narvik's Complaint, 16 February. Available at: <http://www.narviks.info>

Amery, M. (2010) *'Jeremy Diggle: Narvik's Complaint – EyeContact'*. Review of by. Available at:
<http://eyecontactsite.com/2010/02/jeremy-diggle-narviks-complaint>

Diggle, J. (2013) *'Field of Vision'*, 21 June. Available at:
<http://www.narviks.info>

Amery, M. (2009) *'Flying Under the Radar'*, Massey Research, (ISSN 1177-2247), pp. 62,68.

Section 13. Asemic Writing

From: Jeremy.diggle be4tl@mac.com

A lot has been lost, memory frozen. Just as it is with you Johannes, it is the same for me. I can only imagine your time from my place in your far future. You are now a modified memory, recast and changed by distance and deterioration. The interference and erosion can't be reversed, too much is lost. So I apologise for my misunderstandings as I accept your apology to me for your fixed perspective. It remains impossible for now, to be in two places at one time.

Taken. A lost access to memory. Operating systems change, Version 8 or X Tiger and Snow Leopard no longer support Director 4, which has long been superseded by version 9 and the loss of the company. Much of your work has fallen into our technological future, misinterpreted because we have cameras. Archaeology is required! Vintage machines are needed to operate and access what was once cutting edge and is now locked in memory codes beneath layers of deteriorating html.

13: Asemic Writing. A continuity of practice in time.

Up until this point in the text I have avoided the inclusion of any of my painted works and exhibitions, which have been part of my practice from the outset of my career as an artist. There are many works of painting, which are not included in the evidence portfolio, such as a collection of paintings from the mid 1980's called the 6 O' Clock news, which was exhibited at UK venues (poster included in evidence portfolio). There is a body of work that I exhibited in America called the Egg Victims and Stealth which are referenced in the catalogue Camouflage included in the evidence portfolio. These works included in the exhibition Camouflage dealt with abstract images referencing victims of rape in the Balkan conflict (Egg Victims) and a series of abstracted paintings depicting Stealth bombers (Stealth). These are briefly mentioned here because these works deal with (a narrative of memory), the memory of war and additionally the registration and recording of new technologies of war in the Stealth series. However, these works are principally mentioned here to provide a context that recognises a continuous practice of drawing and painting throughout my career, one which has explored and worked extensively within new technologies of making but also reflected on technologies as subject mater.

13.1: Here I make reference to the chapter Asemic Writing, which appears in the book Drawing Out published by Studio International (included in evidence portfolio and date). The

book is a collection of essays that was published as a result of the international conference Drawing Out, at RMIT University in Melbourne, which I organised and convened on behalf of the University of the Arts and RMIT in 2013. Here I précis from my text in the publication and add some explanation to the context of these works in relation to the three structural elements within the exegesis.

My drawing and painting practice is firmly rooted in abstraction. The pictorial work that I produce is arrived at through an approach to non-objective mark making that builds upon the layering of sequences of actions. These marks which are a result of a range of gestures and whole body movements, draw upon a repertoire of rehearsed and repeatable calligraphic like brush strokes and traces, that have evolved over forty years of practice. I think of this aspect of my making as asemic writing. These repeatable drawing and painting actions, which are clearly a form of technique, are analogous in my thinking to the playing of a stringed instrument. There is a lot of muscle memory deployed here, but also an understanding of the use of attack and decay within the language of mark making as intonation and accent. The development of a coherent musical and audio performance similarly relies on a rehearsed and repeatable set of actions through practice, memory and technique. Drawing and painting, like music, are also performative. They share, in common with music making, a refinement of performative subtlety and composition, which is capable of producing repeatable but nuanced moments of variation, through

improvised elements and aspects of touch, such as attack and decay, colour variation and tone (think jazz).

13.2: In my asemic writing, it is repeated performance through the act of drawing and painting within a durational framework, that engages and enlivens the process of composition, and I would argue, that it is this repeatability through performance, that creates the most engaging and complex structures within an abstract work of art. And it is the same with this form of picture writing as it is with live music and dance, which is an embodied practice and where new iterations bear witness to the subtlety of variation and interpretation, mood and improvisation, that makes each performance of a repertoire distinctive.

13.3: Picture writing started to inform my practice very early on and coincided with the development of my adult art practice and finds its route in the exploration of pictographic and symbolic cyphers that helped inform this early development of a repertoire of marks and gestures, which originally held specific meaning. My own use of marks and gestures has evolved through extensive repetition to contain traces, yet modifications of the original meanings, such that every mark is now a memory-trace as well as an action recorded in a moment of becoming. Each mark therefore is a modification of the last and at the same time a registration of

the physical encounter, as a transaction with the world, as a sensory record of action. The painted asemic writing communicates and records the enactment of memory. The work becomes as a vehicle for recall and retrieval of the automatically and instinctively deployed memory-actions of the act of writing/making/painting. The actions involved in the making of these abstract asemic pieces, when the action-marks become tangible, are the narrative of memory. The work is a memory of an internal thought process and the temporality of the externalised action, through the primal technology of the mark making implement. But something else is happening here. This something else is the deployment of what has been learnt through the explorations of other technologies of making. What appears are the visual cyphers that have emerged through multimedia and visual processing tools such as Photoshop, 3D modelling and video editing. The sequencing within these works is affected by knowledge and memory of scripting in multimedia authoring programmes. The visual decisions are a blend of the memory of a transition from the analogue through to the digital and straddle the meridian line that separates the pre-personal computing age from the digital age of personal computing and back in a Mobius strip. I like to think of these asemic works as panoramic in concept, but twirling inwards and outwards upon themselves in a figure of eight, as a narrative memory of time and as records of a time of memory.

Exhibition and publication documentation is contained in the evidence portfolio of this submission and within the eBook.

Diggle, J. (2014) *Asemic Writing*, in Farthing, S. and McKenzie, J. (eds.) *the drawnword*. New York: Studio International and the Studio Trust, pp. 84,88.

14. Conclusion

August 12.2015.16.57

From: Jeremy.diggle be4tl@mac.com

Dear Johannes:

I must finish now. And in the words of my old character...

“All I can say is that I was glad that I started this journey before the personal computer was invented. That I grew up as a member of the last crew to span the ‘before and after’, who were able to think and breath in a world without digital communications. Life was, I think, more sensuous and tactile, conversational and vivid.

I was able to develop an imagination, which was not cluttered with perverse thoughts from out of the omnipresent-web of interference and noise.

I could believe in stories and imagine darkness.

You can’t be in two places at one time!”

Howard Warner%ford.

14: Taken collectively these works demonstrate an art practice that engages with temporality, memory and narrative in relation to a use of contemporary visual technologies. I have researched through making art and the refinement of ideas that are relevant to the context of our times. There is evidence here, in the cited works, of the early adoption and incorporation of the now increasingly ubiquitous technologies and tools of image production and multimedia authoring. These works collectively demonstrate that they are innovative either through intention, form, transference, invention or combination of the narrative potentials of the technologies to create thought provoking responses.

I have included and shown that some of the works have extended the use of narrative into new areas of enquiry and that by the inclusion of the patented work, that elements of the research have led to registered invention. There is also an interrelationship of evolutionary connection and transference between pieces. The works, although standing independently of each other and in many ways appearing superficially to share little thematically between themselves, are in many complex ways interrelated and interdependent. The narratives and ideas, and the discoveries, migrate between pieces through time. Some of the works explore a reversal of the traditional understanding of relationships in and through time, such as in Narvik's complaint, which relates both backward and forwards and appropriates memory and falsifies memory creating a conceptual and physical structure that moves in two directions at once, whilst maintaining an authorial drive.

The works curated here demonstrate temporality and memory through transference of interrelating narratives. The story telling, because that is what is reflective and projective of the conceptual material related to being of a time, which straddles the analogue and the digital and develops through the opportunities that accessibility to the emergent technologies have facilitated. The works engage in dialogue that demonstrates new thinking specific to the conditions of the making of the works. Narrative comes into being through the aesthetic relationship and compositional juxtaposition of elements of meaning. The narrative of these objects and ideas is both virtual and real, through inherent and associated meaning and the construction of entirely new possibilities through an innovation of composition through the experience of technologies.

August 12.2015.16.59

From: Johannes.Vermeer. bel8td@mac.com

So, that is how!

... A Postscript

PS,

As a brief postscript I will say a little here about the future of my practice and something of the continuities I perceive with the works focused on in the DPhil. I am now working from the studio, primarily painting. I still continue to pursue a number of narrative and technology based enquiries, specifically in the area of installation works, but for the main part I am painting in the studio. The paintings that I am making are predominantly self-referential, non-representational and abstract. They are entirely without reference to objects and consciously avoid the depiction of natural forms. These individual paintings are built up through multiple actions and edits, across multiple individuated sequential surfaces. The paintings are unashamedly explorations using marks upon surfaces in time, very much a form of modernist picture making. These paintings are analogue inventions that explore the picture plane, pushing at the edges or defining zones of contrast, space, colour and tone.

If I were to identify or attempt to define a visual lineage for the current works, I would place them as relating to the adaptation of the late modernist art of abstract expressionism,

through post-painterly abstraction and colour field painting. I would like to think that my current studio work could be read as having some visual similarities to the works of two recently deceased British painters, John Hoyland (1934-2011) and Albert Irvin (1922-2015). There is no accident in this. These are two artists whose work I know well and whose painting forms the foundations of the abstract painterly art I most admire amongst recent contemporary British art.

There doesn't appear at first to be an obvious connection between my recent paintings and the time-based narrative works that I have specifically outlined within the body of this submission. However, these paintings explore time through the processes of their production and many related aesthetic decisions engage in a form of cross-cut editing, where sequences of associated works borrow one from another and are edited to create coherent clusters of associated work. These new studio works also build upon and extend the visual language of the paintings described as Asemic Writing in section (13).

The growing number of my new studio paintings, many of which have taken several years to complete, are establishing an entirely new body of work that is developing around a concept of lineage and sequence. Through the sequential making of the individual paintings, there are emergent similarities between the works and inherent memory-narratives of their making that pass from one painting to another. These paintings have evolved an internal logic,

through mark making and compositional decision making, related to colour and tone and the dynamics of attack and decay inherent within the mark making and gestural process of their construction. There are also some inherent and shared similarities developing across sequences of work into *families* or associated groups and clusters of paintings. As the number of these entirely non-objective abstract paintings increases, it is becoming possible for me to trace recurrent marks, colours and tone layers. These form the narratives of interconnection that start to define the differentiating characteristics of closely related *families* of works.

By working through a critical and reflective studio practice it is possible to edit and perform, or indeed re-perform actions specific to each painting, in order to further differentiate and subdivide the works. To extend the *family* metaphor I am creating a family tree of works, leading to the creation of what I call *parent paintings*, *child paintings* and *grandchild paintings*. So far this working process has led to the emergence of a number of extended *family* groups of paintings and subsequently the emergence of refined strategies for the identification and differentiation of these *families* one from another.

There is an interdependence, of course, between any lineage or family tree of works and the intermixing of making strategies, or colour and tonal palettes. This has made me realise that these abstracted works are becoming not only *families* but *tribes* with collective shared traits, echoes and characteristics. It has been the process of thinking about this concept of *family* and *tribe*

that has now led me, through a form of internal thought-play, to exchange the concept of *tribe* for one of *clan*. In making the decision to align the families of abstract works into *clans* I have introduced the idea of working towards an emergent cypher within the paintings that is evolving to look somewhat like plaid or tartan. Here tartan is a visual trope, which is starting to influence and help create visual coherence within the progression of the sequences of new *families* of works.

Within this strategy for making paintings aligned to *families*, groups, *tribes* and *clans*, a new abstract narrative is emerging. This emergent narrative is one of a cross-cutting epistemology of marks, which correspond forward and backward in time between groups and within families of works; a warp and weft as it were. It is this phenomenon that has led me to a personal insight associated with the new works, which relates directly back to the technology and time-based narrative works cited within this exegesis. These works are about being present, being in a moment of becoming, whilst also framing a specific performative memory-representation of what it is to exist as a maker now, in a transitional era between machine age and the digital. The Jacquard loom comes to mind, with its punch cards and capacity to mechanise complex textile patterning and weaving on an industrial scale and, by extension of course, its well established place as a conceptual precursor to computer programming. I also realize that there is no accident in the emergence of plaid within the paintings. On reflection I am sure that somewhere subconsciously, deep in my memory, I have made a connection with what is generally recognized to

be the first colour photograph, an image of a tartan ribbon produced by James Clark Maxwell in 1861. This photograph established the principle of the three colour separation process.

Clan tartan plaid is not just an early nineteenth century invented Scottish tradition. It is more complicated than that. Scottish clan tartans build upon eighteenth century Scottish regimental tartans and also on a wide range of traditional vernacular tartans from across Scotland and other Celtic cultures. There is a long tradition of European plaid textiles, with the earliest known examples emerging in Central Europe within the eighth century Hallstatt culture in Austria. This early plaid evolved as it was dispersed through the Celtic migratory diaspora. There is a direct connection here to my evolving use of tartan and the ideas I have of *family* and *clan* traces. The abstract narratives, the core idea of a common route between the works that comes from a deep and ancient route of painting and in which ideas, and the discoveries, migrates between and across the pieces through time.

In this new body of painting I am continuing to extended the use of narrative into a new area of enquiry. I am not only thinking about the reproducibility of marks and their associative alignment within families of works but I am also beginning to think more about the performative potential of the process. As I summarized briefly in the conclusion of this exegesis, when speaking of the body of evidence provided in this submission as related to those specifically time-based and

technological narrative works, these *families* of paintings, which form my current and ongoing studio practice also engage with an interrelationship of evolutionary connection and transference between pieces. The intention is that these paintings are, in many complex ways interrelated and interdependent through a *family* and *clan* structure of developmental connectivity and interdependence. The individual works can stand independently of each other as single works, but they clearly share common traits and thematic concerns with a collective body of work. That body of work can also stand in its entirety as a single work.

The realisation that the paintings are as much a narrative performative way of working as anything that I have done within more overtly performative and narrative works, which have been described here in the exegesis, has started to develop and evolve into a new dimension of performance within the way I perceive the paintings and the way I wish to present them.

Recently, I have started to take paintings out of the studio and into the landscape. The proposition and the act of performative siting and the digital photo-documentation of the paintings in the landscape, away from and beyond the studio or the white cube of the gallery space, is an attempt to extend the memory-narrative of the work through extreme contextual juxtaposition. These new performative actions are intended to demonstrate an extended temporality and memory-narrative through documented transference from studio to landscape.

Individual studio paintings are taken into the landscape and I create new interrelated documentary digital photographic narratives, to be shared alongside the originals in exhibition and with other individual works documented at other times and locations.

Re-Memory:

I am still story telling and very much involved in the telling of a narrative of being of a time and place, bearing witness to my biographical journey, straddling the analogue and the digital.

Appendix.

Appendix to section 10.

10.3. The description.

VIRTUAL DISPLAY METHOD AND APPARATUS

The present invention is concerned with the provision of a virtual panoramic display, in particular a navigable virtual panorama. In one embodiment, the invention is particularly, but not exclusively, applicable to the virtual display of artefacts in a collection of a museum or art gallery. Other embodiments of the invention relate to the provision of a virtual display for archeological and historical sites. Further embodiments of the invention are concerned with the provision of a virtual panoramic image of an exterior location, for example to assist with the navigation of a vehicle or vessel, such as a ship or the like.

Museums and art galleries by their nature are required to provide displays of objects, such as paintings, sculptures and other artefacts, for viewing by members of the public. However, in many cases, the range of objects and artefacts on display at any given time is a fraction of a much larger collection of objects and artefacts. Indeed, it is the case that many museums house vast collections of artefacts and objects that are of significant historical and scientific importance. However, due to the limited amount of room available, only a

small fraction of such collections are ever displayed.

There is a growing demand for the public to be provided access to much larger portions of the collections of museums and galleries, for which there is no space available to provide adequate displays.

Accordingly, there is a need for a system for allowing museums and the like to provide displays of artefacts and objects to the general public, without necessitating a significant increase in the amount of display space that is to be used. Attempts have been made to generate and provide a virtual gallery. An example is the interactive display of the Museum of Fine Arts and Archeology in Roanne, France. However, these displays have been entirely computer generated and suffer from a lack of realism for the viewer.

DE 19956189 discloses a system and software for generating a display of a room or the like using 2D and 3D models of objects. The disclosure teaches that the images of objects may be moved within the two-dimensional space to determine the optimum layout. It does not appear that this system provides a virtual 3D panorama, through which a person may make a virtual tour to view objects.

FR 2847694 is concerned with a method for the interactive visualization of real spaces in three dimensions. The real space is represented by a combination of photographs of architectural features and materials. It would appear that the photographs of the architectural features and materials are 2D

images. Images of objects are inserted into the composited real space image.

A system and method for hosting a virtual gallery is disclosed in US

2003/0097313. The system allows a user to select images from a range of gallery accounts, to enable the user to construct their own virtual gallery. Again, it appears that the representation of the gallery is a 2D image.

JP 2001-249633 discloses a method and system for advertising merchandise using a three-dimensional computer generated model. The method and system are particularly directed to the vendor of a house. It does not appear that the method and system allow a virtual panoramic display to be created with embedded 2D and 3D object images which is fully navigable by the user. JP 2001-342673 is concerned with a method and system for providing a virtual exhibition. The system includes provisions for a user to rent image data for objects to be exhibited, which are embedded in a virtual space, to be viewed by the user.

JP 2000-331189 discloses a method for constituting a virtual three-dimensional space and storing medium. The method generates a picture gallery template having a three-dimensional structure.

Finally, US 6,147,709 discloses a method and apparatus for inserting a high resolution image into a low resolution interactive image to produce a realistic immersive experience.

In the method, an interactive image has a high resolution image embedded therein, such that when a user magnifies a part of the image on the screen, the higher resolution image data are viewed. This provides the user with a feeling of magnification and assists with the sensation of being present in the image being viewed.

Accordingly, there is a need for an improved system for providing a virtual panorama, for example a virtual gallery that provides the viewer with an experience that is as close as possible to the actual viewing of the display or exhibition in person. In addition, there is a need for providing navigable, virtual panoramic displays for a wider range of applications, allowing users to navigate virtual spaces and locations, as if in a three-dimensional environment.

In a first aspect, the present invention provides a method for providing a navigable virtual display, the method comprising the steps of: providing a panoramic image of a space or location; preparing a navigable virtual panoramic image data set based upon the virtual image of the space or location; providing a multidimensional image of an object to be viewed within the image of the space or location; preparing a multidimensional image data set from the multidimensional image; and incorporating the multidimensional image data set into the virtual panoramic image data set to provide a virtual panoramic display image data set; wherein, when displayed, the virtual panoramic display image data set provides a navigable virtual display of the imaged object within the image

of the space or location.

In the present specification, a virtual three dimensional panoramic image is to be understood to be a two dimensional panoramic image displayed in a spherical, cylindrical or cuboid format to represent a three dimensional navigable virtual panoramic image.

The method of the present invention may be used to provide a wide range of navigable virtual panoramic displays, in which have been included or embedded two- or three-dimensional images of objects, such that the user may navigate around the object in the virtual realm.

The present invention is of particular use in providing a virtual exhibition in which the imaged display space is part or all of a museum, heritage center or art gallery. The present invention provides, as a solution to the aforementioned problems, an enhanced virtual panoramic display of artefacts and objects, that is navigable by a user, to provide access to the significant number of objects that hitherto have not been freely available for public viewing. The present invention relies upon the imaging of both an actual display space, such as a gallery or museum room or hall, and the imaging of artefacts, in order to provide the virtual display. In this way, the viewer is provided with a virtual viewing experience that very closely matches the environment and objects in real life.

In an alternative embodiment, the invention employs a panoramic image of an exterior space or location. In one

aspect, the method is used to provide a navigable virtual display of an exterior location for the purposes of navigation of a vehicle or vessel, such as a ship or the like. For example, the method may be used to provide a virtual display of a section of coastline or a port, allowing the crew of the ship to safely navigate the ship.

Other applications for the invention include the provision of virtual displays of archeological and historical sites, to allow visitors to obtain different virtual views of the site.

The method of the present invention provides a navigable virtual display, that is a virtual display that may be displayed on a suitable means, such as a screen, headset or monitor, and be altered and varied at the control of the viewer so as to give the impression of moving through or within the display space. A 2-dimensional display means is used to display or project an image representing a 3-dimensional space through which the viewer may be given the impression of moving.

In the first step of the method, a panoramic image of a space or a location is provided. The image may be of an interior space or location or an exterior space or location.

In one embodiment, the panoramic image of a display space is provided. A suitable space is imaged to provide a panoramic virtual image. The method preferably employs an existing display space, such as a room or gallery in a museum or the like. The use of an existing display space allows establishments, such as museums or galleries, to provide users

of the system with a virtual image of the establishment itself. It is thus possible for an existing establishment to use its display space both in real terms, by way of a conventional display or exhibition, and in a virtual sense to provide a virtual display or exhibition. By this method, the use of the existing, limited display space may be increased many times.

Suitable techniques and systems for obtaining a panoramic image of an existing space or location, such as a gallery, exhibition hall or room, or exterior location, are known in the art. For example, a panoramic image may be obtained using a digital SLR camera, preferably mounted on a standard tripod.

The image of the space or location is used to prepare a navigable panoramic display image data set, which may be stored using conventional computer storage systems and means. This display image data set forms the basis for a virtual display and may be used a repeated number of times to provide a variety of displays without requiring further imaging of the space or location.

It has been found that, while such panoramic images are satisfactory for providing a navigable virtual panorama, they may be limited in the extent to which a user may freely navigate through the virtual space. Accordingly, in one preferred embodiment, the virtual panoramic image is created using computer aided design (CAD) techniques. Suitable CAD software and packages are commercially available and well known to the person skilled in the art. In this embodiment, CAD is used to create a raw panoramic image.

This raw image is modified by importing two dimensional and three dimensional image data of the selected location or space, to provide the completed panoramic image. For example, one technique for improving or enhancing the panoramic image is by the texture mapping of two dimensional images onto three dimensional image data, to create a panoramic/immersive environment.

The two dimensional and three dimensional image data may be obtained using techniques well known and conventional in the art, such as digital photography. By importing image data of the actual location or space to be displayed, the final panoramic image is particularly real and life-like. However, the use of a raw image structure created using CAD techniques allows for a significantly higher degree of navigability through the virtual panorama.

In a further embodiment, the virtual panoramic image is provided as stereo panoramic images, such that each of two images is viewed by a respective eye of the user, with the images combining when so viewed to form a perceived three-dimensional image. Such stereo image techniques and the systems for producing and viewing them are known in the art and readily understood by the person skilled in the art.

The virtual panoramic image may be a still image. A suitable still image may be obtained, for example, using a digital SLR camera, preferably mounted on a standard tripod, as noted hereinbefore. Alternatively, the virtual panoramic image may be a moving image, in particular a video image. In such a case,

the user is able to navigate through a moving panoramic image of the selected location or space. Suitable video imaging systems are known and commercially available.

It is preferable that the panoramic display contains one or more navigation aids, to assist the user when moving through the virtual panorama, either as part of the panoramic image or as an additional part of the display. Examples of suitable navigation aids include virtual signs that appear within the panoramic image. In a further step, the method of the present invention requires that multidimensional images of one or more objects are provided. In this respect, a multidimensional image is one that allows a viewer, when the image is displayed, to view the object from different positions. In other words, the image of the object is displayed in a manner to give the viewer the impression of being able to move around the object.

The multidimensional images are obtained by imaging the one or more objects to be displayed. In one embodiment of the present invention, the object is imaged to provide a 2-dimensional image, that is an image that presents the object in a single plane. The 2-dimensional image is particularly suitable for flat objects, that is objects typically viewed in a single plane. Particular examples are images of pictures, such as paintings, sketches, drawings, photographs and other similar works of art. In this way, a navigable virtual display may be created using the method of the present invention to display one or more paintings or the like. Such a virtual display may be used by an art gallery, for example, to display a large

collection of works of art.

Suitable systems and methods for obtaining a 2-dimensional image of an object are known in the art and available commercially. For example, an image may be obtained using known digital photography. Other methods and systems for obtaining a 2-dimensional image include digital scanning, for example laser, ultrasound and magnetic resonance imaging. One or a combination of different imaging techniques may be employed to capture the 2-dimensional image data.

In one preferred embodiment, the virtual panoramic display image comprises virtual vertical display surfaces. These may be images of walls or screens or the like, such as used in conventional galleries to hang and exhibit pictures. The 2-dimensional image data sets are incorporated into the virtual panoramic image data set so as to appear on the virtual vertical display surfaces in the final panoramic display, such as images of walls, screens, partitions and the like. In this way, an exhibition of paintings and the like may be simulated.

In a further embodiment, the multidimensional images are 3-dimensional images of an object. This may be any object to be incorporated into the virtual display. Examples include objects of art and craft, such as sculptures or the like, as well as artefacts for display in a museum or similar exhibition, objects and artefacts for viewing in an archeological setting, or objects present in a landscape, such as vessels, buoys and the like in a virtual image of a portion of coastline or a harbour.

Suitable systems and methods for obtaining a 3-dimensional image of an object are known in the art and available commercially. Suitable methods and systems for obtaining a 3-dimensional image include digital non-contact laser optical scanning, Quick Time Virtual Reality (QTVR) object movies, pressure sensitive reverse engineering, robotic arm measurement, magnetic resonance and ultrasound imaging. One or a combination of imaging techniques may be employed to capture image data for incorporation into the virtual panoramic display image data set.

In one preferred embodiment, the virtual panoramic display image comprises virtual display locations. These may be images of stands or the like, such as used in conventional galleries and museums to exhibit objects and artefacts. Alternatively, the virtual display location may be an area of virtual floor space, on which an object may stand for exhibiting. The 3-dimensional image data sets are incorporated into the virtual panoramic image data set so as to appear in the virtual display locations in the final panoramic display. In this way, an exhibition of objects and artefacts and the like may be simulated.

The virtual panoramic display may combine both 2-dimensional images and 3-dimensional images. When 3-dimensional images are present, the virtual panoramic display preferably allows a viewer to navigate around all sides of the object. In a conventional display, a person viewing an object is limited to viewing points accessible from walking around the

object. The virtual panoramic display of the present invention may be configured to allow the viewer a greater range of viewing points, for example the ability to view the object from above or below, views that would not normally be available in a conventional exhibition.

In one embodiment, in addition to or as an alternative to the user navigating around a 2- or 3-dimensional object within the virtual panoramic display, the objects may be viewed and navigated around in a separate display environment. This may be provided, for example, by providing the user with the option to select a particular or more detailed viewing of the object, which when selected opens a new view and/or screen in the display. This may allow the user to access such further or more detailed data only when desired, in turn improving the efficiency of the overall viewing and navigating through the panoramic display.

In conventional exhibitions, it is common practice to provide the viewer with additional information regarding the objects being viewed. In its simplest form, this is a plaque or the like giving such as the title and artist of a piece of artwork, as is typical for objects or pictures being displayed in a gallery. In museums, for example, more extensive information may be provided, typically in the form of written text. In the present invention, it is an advantage that the virtual panoramic display image data set may incorporate information relating to each object to be viewed. The information may be in the form of written text, images, an audio display, a video display or a

combination of one or more of these. The method of the present invention allows a substantial amount of information to be associated with an object within the virtual display and to provide the viewer with the option of requesting or selectively viewing some or all of the information. In this respect, the virtual display of the present invention provides a significant advantage over conventional exhibitions or displays, where the amount of additional information that can be provided for a given object is generally limited.

In one preferred embodiment, the method of the present invention includes providing an interface with a database or other means for providing data to supplement or modify the virtual display. The database may be contained within the system housing and running the display. Alternatively, the database may be remote from the system and accessed, for example via a network connection, telephone, satellite link or the like.

In one embodiment, the database contains information, such as an existing catalogue of objects, whereby information relating to an object may be retrieved and displayed, for example at the viewer's request. In this way, the virtual panoramic image data set is not required to include information relating to the objects being displayed. Rather, this information may be imported into the virtual panoramic image data set only when required to be presented to the viewer.

In addition to the hereinbefore described method, the present invention also relates to a system for carrying out and

implementing the method.

Accordingly, in a further aspect, the present invention provides a system for displaying a navigable virtual panoramic display, the system comprising: a means for storing a virtual panoramic display image data set; a means for displaying a virtual panoramic display based upon the virtual panoramic display image data set; an interface for communication with a remote database; and an interface for a user, the interface including a means to allow the user to navigate within the virtual panoramic display.

In a further aspect, the present invention provides a system for displaying a navigable virtual panoramic display, the system comprising: a means for storing a virtual panoramic display image data set as prepared in any preceding claim; a means for displaying a virtual panoramic display based upon the virtual panoramic display image data set; and an interface for a user, the interface including a means to allow the user to navigate within the virtual panoramic display.

The virtual panoramic display image data set may have any of the features as hereinbefore described and the system of the present invention may be configured to provide these features in the panoramic display.

The means for storing the virtual panoramic display image data may comprise any suitable data storage means, such as RAM or ROM. The data stored on the storage device is retrieved and used to provide a virtual panoramic display on

the display means. In one embodiment, the virtual panoramic display image data set is stored on a server hard drive, for display as a web-based presentation accessible through terminals on a computer network.

The display means may be any suitable display means and such devices are commercially available. The system may be a dedicated system for the storage and display of the virtual panorama. Alternatively, the system may comprise a device, such as personal computer, podcast, personal digital assistant (PDA) or telephone, configured to store, retrieve and provide the requisite display.

The system of the present invention comprises an interface with which the viewer may navigate through the virtual panoramic display. In its simplest form, the interface may comprise a simple keyboard and/or joystick, navigation keys on a telephone or a stylus used with a PDA or telephone. Such control interfaces are well known and commonly applied in the art, for example in the computer gaming industry. In a preferred embodiment, the interface allows the viewer to selectively access and display information associated with an object being viewed. As noted above, the information may be in the form of text, still or moving images, video, an audio display or a combination of one or more of these. In such a case, the interface allows the viewer to control the display of the information.

Further, the system may comprise an interface with a remote database, such as a catalogue or the like, containing

information relating to the objects being displayed in the virtual display. This interface is operable to import data from the remote database as required, in order to supplement the display. The interface may be operable under the control of the viewer. Alternatively, the system may be operable to automatically retrieve certain data relating to an object, when the object is being viewed in the virtual display. Alternatively, or in addition thereto, the automatic data retrieval may be triggered by movement of the user, for example when physically moving or traveling through a particular location, in which case the virtual panoramic display is modified according to the physical position of the user. Such automatic data retrieval may be triggered by positional data received via an interface with a GPS. An example of such automatic retrieval is data containing the date and origin of an object. The system may provide the viewer with the option of retrieving further information, if desired. This option may be presented to the viewer by way of a menu or the like. The automatic data retrieval may be controlled, for example, by the display. In one embodiment, the retrieval of data relating to a particular object is triggered by the object coming into view, as the viewer navigates through the display.

Techniques and software suitable for generating the virtual panoramic display image data set and operating the virtual display are known in the art. One preferred system for generating the virtual panoramic display image data set is the SPi-V panoramic viewer, a commercially available software package available from FieldOfView, The Netherlands. The

SPi-V system operates from XML configuration files and is used to embed images into the virtual panoramic image data set to create the virtual panoramic display image data set. An advantage of the SPi-V system is that individual image files may be embedded and there is no need to form a single composited image file for combination with the panoramic image data.

Suitable software tools for the development of the user interface are also known in the art and available commercially. One example of a preferred system is the Revolution system, commercially available from Runtime Revolution Ltd. This system is employed to create the user interface, in particular the configuration files that are operated with SPi-V panoramas, for example, to provide the virtual display. Other systems will be known to the person skilled in the art.

As noted above, the system of the present invention may include provisions for displaying additional information associated with objects within the virtual display, at the request of the viewer. The Revolution system may be used to construct the appropriate interface for the selective retrieval and display of the information.

As an example, the interface may be in the form of a dedicated web browser. Clicking on an object within the virtual display or an associated icon generates a new page of options for the viewer, including links to additional information. The web browser may use any appropriate 'plug-in' technology to display information in different media forms, including

interactive 3D models, zoomable still images, video and audio displays. The web browser may be configured to retrieve information from a local source or from a remote source via a network connection. Information may be displayed from the remote source or may be downloaded to the viewer's local device.

In addition, Revolution may be employed to create the authoring applications or tools, which may be used to interact with the SPi-V system to provide improved user friendliness. In particular, such applications or tools may provide a regular graphical interface for the user to create the virtual panoramic display image data set using the SPi-V system. For example, the applications or tools may provide the user with a fold-out plan of each room or region of the display space, created from the panoramic image of the display space provided. In addition, the user may be provided with a set of thumbnail images of the objects to be incorporated into the virtual display. The arrangement of the objects within the virtual display may be created by simply 'dragging' the thumbnail images into place. The application or tool will then create the appropriate XML file for placing the appropriate image data within the virtual panoramic display image data set.

The raw panoramic and object image data may be manipulated and managed prior to inclusion in the virtual panoramic display image data set using known techniques and systems. In particular, the raw images may be managed and converted using such commercially available software systems as

Aperture, iView, Media Pro, Capture One, Portfolio and Photoshop. The manipulation, colour balancing and design of the images is preferably carried out using Photoshop, commercially available from Adobe Systems Incorporated. The alignment and remapping of images (referred to as 'stitching') may be achieved using PTMac, PTGui, Realviz Stitcher, Hugin and PTAssembler, all of which are commercially available.

In a further aspect, the present invention provides a virtual panoramic display image data set as hereinbefore described and a computer program comprising or incorporating the same. The present invention also provides a computer readable carrier having stored thereon a virtual panoramic display image data set prepared according to the method hereinbefore described.

As noted above, the method and system of the present invention may be used to produce a navigable virtual panoramic display of a wide range of locations and for a wide range of applications. In many of these applications, it is necessary to have the ability to modify the virtual panoramic display. For this to happen, one aspect of the present invention provides for a connection to a remote database to retrieve data, the data being used to modify the virtual panoramic display.

Accordingly, in a further aspect, there is provided a method of providing a navigable virtual three dimensional panoramic display, the method comprising: providing a navigable virtual

three dimensional panoramic image; providing an interface with a remote database, whereby data may be retrieved from the remote database; accessing the remote database to retrieve data; and modifying the navigable virtual three dimensional panoramic image according to the retrieved data.

The virtual three dimensional panoramic display may comprise image data relating to one or more objects to be viewed within the display, as described hereinbefore.

In a still further aspect, the present invention provides a system for providing a navigable virtual three dimensional panoramic display, the system comprising: means for displaying a navigable virtual panoramic image; an interface for communicating with a remote database; means for processing data retrieved from the remote database to modify the virtual panoramic image to provide the navigable virtual three dimensional panoramic display.

The method and system of these aspects of the present invention require an interface with a remote database for the retrieval of data. Databases of data are known and in existence. For example, museums frequently have databases holding electronic records of exhibits and artefacts, for example artefacts that have been stored or archived. Suitable interfaces for communication with such databases are known or can be created using techniques known and readily available to the person skilled in the art.

Data are retrieved via the interface from the remote database

and used to modify the navigable virtual panoramic image to provide the completed navigable virtual display. The remote data may relate to one or more portions of the navigable virtual panoramic image. For example, the image may contain one or more objects, such as artefacts on display in a virtual museum, objects, ruins or buildings at an archeological site, or features within the virtual image of a port or harbour. Data relating to one or more of these objects or features may be requested by the user and retrieved from the remote database via the interface. These data are then used to modify the virtual image, for example by changing the existing image or by adding one or more additional displays. Additional displays may contain further and more detailed information relating to the object or feature selected, or the like.

In particular, data retrieved from the remote database may be presented to the viewer as part of the virtual display, for example in the form of floating graphics, including text and/or image boxes that are displayed as part of, alongside or over the panoramic display. The data may be retrieved, for example, as streaming data, video data and the like, for example, emergency information, the time and streaming radio and voiceovers.

Data and information retrieved from the remote database may be linked with a particular object within the virtual display. For example, data may be retrieved to provide further information to the user regarding a particular object in a virtual exhibition, such as text, high resolution images, video

and/or sound data. Alternatively, the data retrieved from the remote database may not be linked to a particular object or item in the virtual display. For example, data may be retrieved to provide background sounds and noises to enhance the experience of the user. Such sound may be directional, in that it becomes louder as the user navigates within the virtual display. For example, the sound may become louder as the user turns to face the source of the sound in the virtual display. Other examples of more general information retrieved from the remote database include directional information, to enable the user to navigate within the virtual display more accurately.

If the virtual panoramic display contains navigation aids for the user, such as virtual signs within the panoramic image, these may be modified in accordance with data retrieved from the remote database, for example where such data provide the user with additional options for moving through the panorama. An example is the retrieval from the remote database of an entire virtual exhibition with its own exhibition rooms and halls, which, once retrieved, provide the user with the option of entering and viewing the virtual exhibition.

The retrieval of data from a remote database may be via a network, such as a local area network (LAN) or another network, such as the internet or world wide web. As an example, the interface may be in the form of a dedicated web browser. Clicking on an object or other feature within the virtual display or an associated icon generates a new page of

options for the viewer, including links to additional information. The web browser may use any appropriate 'plug-in' technology to display information in different media forms, including interactive 3D models, zoomable still images, video and audio displays. The web browser may be configured to retrieve information from a local source and/or from a remote source via a network connection. Information may be displayed from the remote source or may be downloaded to the viewer's local device.

Alternatively, the interface may communicate with a remote database by other suitable means, including hard wire connections, radio links and other wireless communication systems, in particular mobile telephone networks, infrared and the like. An example of a suitable communication means is Bluetooth for short range communication, particularly in conjunction with GPS equipment or for live updates when in close proximity to an object/ artefact. This is particularly advantageous when the user is using a mobile display and is physically moving within a location while viewing the virtual display. In one preferred embodiment of the present invention, the system is in communication with a global positioning system (GPS). This allows data regarding the position of the user to be retrieved. In such a case, a portable system, such as a hand held display device, may be carried by the user and the virtual panoramic display changed or modified according to the location retrieved from the GPS. The positional data may be used to retrieve image or other data from a database stored locally on the device or in the system. Alternatively, the

positional data retrieved from the GPS may be used to interrogate a remote database to retrieve data relevant to that location. Data may be retrieved according to the position and/or direction of motion of the user and/or the system.

For example, a system of the present invention employed as a navigational aid in a ship or other vessel or craft may receive positional data from the GPS, which in turn is used by the system to generate a navigable virtual panoramic display appropriate to the location and/or heading of the ship.

Accordingly, in a further aspect, the present invention provides a method of providing a navigable virtual three dimensional panoramic display, the method comprising: providing a navigable virtual three dimensional panoramic image; receiving data from a global positioning system (GPS); and modifying the navigable virtual three dimensional panoramic image according to the received data.

A system according to a further aspect of the present invention comprises: means for displaying a navigable virtual three dimensional panoramic image; means for receiving data from a global positioning system (GPS); and means for modifying the navigable virtual three dimensional panoramic image according to the received data. As has been noted, the present invention, in one embodiment, is particularly suited to and advantageously applied in the creation of virtual displays or exhibitions of museum artefacts. Accordingly, the present invention provides, in one embodiment a method of exhibiting museum artefacts, the method comprising the steps of:

obtaining a panoramic image of an exhibition space; preparing a navigable virtual panoramic image data set based upon the virtual image of the space; obtaining a multidimensional image of an artefact to be exhibited; preparing a multidimensional image data set from the multidimensional image; and incorporating the multidimensional image data set into the virtual panoramic image data set to provide a virtual panoramic display image data set; wherein, when displayed, the virtual panoramic display image data set provides a navigable virtual panoramic display of the artefact.

The exhibition space that is imaged to form the virtual exhibition is preferably, but not necessarily, a location, such as a room or gallery, within the museum in which the collection of artefacts is housed. In this way, a given museum may offer visitors one or more virtual exhibitions relating specifically to the museum building.

Embodiments of the present invention have been described with reference to the exhibiting of museum artefacts and works of art in a gallery or the like. It is to be understood that the aspects of the present invention may be applied to providing a virtual navigable panorama incorporating a wide range of object images. For example, the system and method may be used to provide a navigable, virtual panoramic display of such locations as retail and wholesale environments, warehouse locations, as well as the various exterior locations mentioned hereinbefore.

In a further aspect, the present invention provides a virtual

panoramic display image data set as hereinbefore described and a computer program comprising or incorporating the same. The present invention also provides a computer readable carrier having stored thereon a virtual panoramic display image data set prepared according to the method hereinbefore described.

Embodiments of the present invention will now be described, by way of example only, having reference to the accompanying figures, in which:

Figure 1 is a diagrammatic representation of a general method of creating a navigable virtual panoramic display according to one embodiment of the present invention;

Figure 2 is a diagrammatic representation of a method of creating a navigable, virtual panoramic image data set for use in the general method of Figure 1;

Figure 3a is a diagrammatic representation of aspects of the main layout application of Figure 1 relating to construction of the navigable virtual display;

Figure 3b is a diagrammatic representation of aspects of the main layout application of Figure 1 relating to the preview and exporting of data from the main layout application, following completion of the aspects of Figure 3a;

Figure 4a is a representation of the first stage in the preparation of the navigable, virtual panoramic display of museum exhibits of Example 1; and Figure 4b is a

representation of the second stage in the preparation of the navigable, virtual panoramic display of museum exhibits of Example 1.

Referring to Figure 1 , there is shown a general scheme for preparing a navigable, virtual panoramic display according to one embodiment of the present invention. The general method relies upon data from three sources. First, the method receives as input data from the creation of a navigable virtual panorama data set 10. This data set is indicated in Figure 1 as being an XML data set. However, it is to be understood that other systems for passing information in a structured manner may be employed, as will be known to the person skilled in the art. The creation of the virtual panoramic data set 10 is shown in more detail in Figure 2 and described below.

Further, a data set 20 is prepared from a combination of data generated by the scanning and imaging of objects for inclusion in the virtual display and data obtained from a content management system (CMS) or other database. Such other database may be, for example, an electronic library of information relating to objects to be viewed and shown in the virtual display. A suitable interface or 'bridge' 30 is employed to link with the existing content management system or database. Again, the data set 20 is indicated in Figure 1 to be in XML format. However, as noted above, other formats may be employed.

Data from the virtual panoramic data set 10 and the data set 20 are combined with a main layout application 40, in which

the virtual panoramic display is constructed, in particular to include one or more imaged objects into the panorama, so as to provide a navigable display. The main layout application 40 is shown in more detail in Figures 3a and 3b. Finally, the completed display data are provided to a user, for example by means of a viewer application 50. Again, the XML format indicated is just one example of a suitable format for the data set.

Referring to Figure 2, there is shown an example of a method for preparing the panoramic image data set 10. As shown, the method includes both the imaging and measurement of a room. The room is used as just one example of a space or location that can be imaged and processed. The location may be an interior or exterior location, as required. The image data obtained from photographing the room are stitched to form a panorama 60, using known techniques. Images 70 of the walls of the room are extracted from the stitched panorama. Measurement data are used to modify the extraction of the wall images 70, as required. The wall images are combined and processed to prepare the panoramic image data set 10.

Referring to Figure 3a, details of the main layout application 40 are shown. In the construction of the virtual display, a selection of the display space to be employed is made from the panoramic image data set 10. A selection of objects and other data to be included in the display is also made from the data set 20. The display or exhibition is arranged, for example using known 'drag and drop' routines. Once completed, the

compiled display data set is processed for exporting to the end using facility, as shown in Figure 3b. The export processing includes options of creating zoomable images within the display. This may be achieved using known systems, such as Zoomify. The specific formats and systems indicated in Figure 3b, such as XML, Spi-V, etc. are just examples of suitable formats and media that may be used.

The following examples illustrate the application of the present invention. Example 1 Virtual Museum Exhibition

A navigable virtual panoramic image of a museum hall is provided, through which a viewer may appear to navigate. The virtual image comprises a plurality of 3-dimensional object images, each of may be navigated around by the viewer and viewed from different virtual vantage points.

The viewer may activate a data retrieval command with respect to each object being viewed. For example, an object may be provided with a hyperlink to active the data retrieval from the remote database. Upon activation, data relating to the object are retrieved from the central museum database via the remote database interface. The data retrieved are used to modify the display and/or are displayed in the form of text, still or moving images on a new screen, to provide the viewer with further information regarding the selected object. The modified or additional display may provide the viewer with further options to activate further data retrieval, such as providing a menu of links available.

As an example of the above general method, a virtual museum display was prepared as follows, having reference to Figures 4a and 4b.

Data was retrieved from a content management system (CMS) 100. The CMS contained image data of three-dimensional objects, such as sculptures 110, text data relating to objects 120, video data 130, two dimensional image data of paintings 140, and sound data 150. A room within a museum was imaged to provide a panoramic image data set. From this data set, images 160 of the walls of the room were extracted. The data retrieved from the CMS 100 was arranged within the extracted wall images 160, to provide a floor plan 170 of the display. Referring to Figure 4b, the floor plan 170 was combined with a panoramic image 180 of the room, to provide a navigable, virtual panoramic exhibition 200. As shown in Figure 4b, the virtual exhibition accurately reproduced a real exhibition, in particular allowing the user to navigate through the room and around objects, such as sculptures and artefacts. The virtual exhibition contained links for the user to access further information, indicated as T in the display. The links enabled the user to retrieve information in the form of videos, text, high resolution images and the like. The links when activated, introduced further data or information into the existing display, for example a high resolution image to allow the user to zoom into and enlarge a particular artefact, or played an audio data file. Alternatively, the links replaced the exhibition display with an alternative display, such as a screen to show a video clip or film of relevance to the exhibition.

It was found that the virtual exhibition prepared in this manner provided the user with a most realistic experience of attending and viewing an exhibition. Further, the experience of attending an actual or real exhibition was enhanced by the additional information that was available through the links, which is not readily provided to a person when in an actual exhibition room. For the person providing the virtual exhibition, the present invention allowed an exhibition to be prepared with ease from an existing database of information, in particular allowing a user to view objects and artefacts that could not generally be placed on display, for example for reasons of lack of space or non-availability.

Example 2 Virtual Archeological Reconstruction

A user is provided with a hand held or portable display system at a site of archeological interest. The system has an interface connection to a remote database. Movement through the site provides the user with a range of different virtual panoramas displayed on the device according to location. The user may select from one or more options to modify the displayed image, for example to view virtual objects, or to navigate around an image of the site representative of a particular time in history. Data relating to the virtual objects or historical image are retrieved from the remote database either by command from the user or automatically.

Example 3 Virtual Navigation System

A ship is provided with a system for displaying navigable virtual panoramic images of coastal locations. The image is provided and modified according to data received from a GPS regarding the position and heading of the ship. The system has an interface for retrieving data from a remote database, such as a port authority or coastguard, to provide a navigable virtual panoramic display of the coastal location at the present time. In this way, a ship may anticipate the presence of existing obstacles, such as newly arrived ships or other hazards, when manoeuvring. The system is particularly useful for navigation in conditions of poor visibility or at night.

Example 4 Retail Stores

A user is provided with an enhanced system for remote shopping using an on-line shopping procedure. The system provides a navigable virtual panoramic display of the interior of an actual shop or store. The virtual display allows the user to navigate the interior of the shop as they would when shopping in person. The virtual display is modified, for example to display special offers or indicate products that are out of stock (for example by showing empty shelves or the like). The virtual display is linked to a remote database, located for example at the store or at a central location. Images of products and goods can be retrieved from the remote database, for example to allow the user to inspect an item or navigate around the item, in order to obtain a better view, prior to making a purchase. The database is managed, to reflect changes in products, stock, advise of changes in

promotional events or products, and the like.

The system may be provided as a handheld or portable device at the store location. In this way, a user may use the system as an aid to navigating a large store.

CLAIMS

1. A method for providing a navigable virtual display, the method comprising the steps of: providing a panoramic image of a space or location; preparing a navigable virtual panoramic image data set based upon the virtual image of the space or location; providing a multidimensional image of an object to be viewed; preparing a multidimensional image data set from the multidimensional image; and incorporating the multidimensional image data set into the virtual panoramic image data set to provide a virtual panoramic display image data set; wherein, when displayed, the virtual panoramic display image data set provides a navigable virtual panoramic display of the imaged object within the image of the space or location.
2. The method according to claim 1 , wherein the panoramic image is of an interior or an exterior location.
3. The method according to claim 2, wherein the space is within a museum or art gallery, a retail location, or a wholesale location.
4. The method according to claim 2, wherein the space is a geographical location for use for navigation purposes, a coastal

location, a port or harbour, or a landscape.

5. The method according to any preceding claim, wherein the multidimensional image is a 2-dimensional image of the object.

6. The method according to claim 5, wherein the object is a picture.

7. The method according to either of claims 5 or 6, wherein the virtual panoramic display image comprises virtual vertical display surfaces, the 2-dimensional images being incorporated into the virtual panoramic display image so as to appear on the virtual vertical display surfaces.

8. The method according to any of claims 1 to 4, wherein the multidimensional image is a 3-dimensional image of an object.

9. The method according to claim 8, wherein the object is a sculpture or artefact for display in a museum, heritage centre or art gallery.

10. The method according to either of claims 8 or 9, wherein the virtual panoramic display image comprises a virtual display location, the 3-dimensional images being incorporated into the virtual panoramic display image so as to appear in the virtual display location.

11. The method according to claim 8, wherein the multidimensional image is of a vessel.

12. The method according to any preceding claim, wherein multidimensional image is a 3-dimensional image of an object and the virtual panoramic display image is navigable to allow a

user to view around all sides of the 3-dimensional image.

13. The method according to any preceding claim, further comprising the step of incorporating into the virtual panoramic display image data set information relating to each object to be viewed, the information being in a form such that it can be displayed in the virtual panoramic display image.

14. The method according to claim 13, wherein the information relating to each object may be retrieved from the virtual panoramic display image data set by the user upon request.

15. The method according to any preceding claim, further comprising providing an interface to a remote database, whereby data relating to an object on display may be retrieved from the remote database.

16. The method according to claim 15, wherein the retrieval of data is automatic and determined by the virtual display.

17. The method according to any preceding claim, wherein the virtual three dimensional panoramic image is constructed using CAD techniques.

18. The method according to claim 17, wherein the three dimensional panoramic image comprises images of the location.

19. The method according to any preceding claim, wherein the virtual panoramic display image is provided as stereo panoramic images.

20. The method according to any preceding claim, wherein the virtual panoramic display image is a still image.
21. The method according to any of claims 1 to 19, wherein the virtual panoramic display image comprises video images.
22. A system for displaying a navigable virtual panoramic display, the system comprising: a means for storing a virtual panoramic display image data set as prepared in any preceding claim; a means for displaying a virtual panoramic display based upon the virtual panoramic display image data set; and an interface for a user, the interface including a means to allow the user to navigate within the virtual panoramic display.
23. The system according to claim 22, wherein the panoramic virtual image is of an interior or an exterior space or location.
24. The system according to claim 23, wherein the space is of a museum, heritage centre or art gallery.
25. The system according to claim 23, wherein the location is a geographical location for use for navigation purposes, a landscape, port or harbour, or region of coastline.
26. The system according to any of claims 22 to 25, wherein the multidimensional images include 2-dimensional images of objects.
27. The system according to claim 26, wherein the objects are pictures.
28. The system according to either of claims 26 or 27, wherein the virtual panoramic display image comprises virtual vertical

display surfaces, the 2- dimensional images being incorporated into the virtual panoramic display image so as to appear on the virtual vertical display surfaces.

29. The system according to any of claims 22 to 25, wherein the multidimensional images include 3-dimensional images of objects.

30. The system according to claim 29, wherein the objects are sculptures or artefacts for display in a museum.

31. The system according to either of claims 29 or 30, wherein the virtual panoramic display image comprises virtual display locations, the 3- dimensional images being incorporated into the virtual panoramic display image so as to appear in the virtual display location.

32. The system according to claim 31, wherein the virtual panoramic display image is navigable to allow a user to view around all sides of the 3- dimensional image.

33. The system according to any of claims 22 to 32, wherein the virtual panoramic display image data set incorporates data relating to each object to be viewed.

34. The system according to claim 33, wherein the interface further comprises means to allow the user to selectively retrieve data relating to each object from the virtual panoramic display image data set by the user upon request.

35. The system according to any of claims 32 to 34, further comprising an interface with a remote database, whereby data

may be retrieved from the remote database for display.

36. The system according to any of claims 22 to 35, wherein the means for storing a virtual panoramic display image data set is a hard drive in a server of a computer network, the interface being associated with a terminal in the network.

37. A computer readable carrier having stored thereon a virtual panoramic display image data set prepared according to the method of any of claims 1 to 21.

38. A method of providing a navigable virtual three dimensional panoramic display of a location, the method comprising: providing a navigable virtual three dimensional panoramic image; providing an interface with a remote database, whereby data may be retrieved from the remote database; accessing the remote database to retrieve data; and modifying the navigable virtual three dimensional panoramic image according to the retrieved data.

39. The method according to claim 38, wherein the panoramic image is of an existing display space.

40. The method according to claim 39, wherein the display space is within a museum or art gallery.

41. The method according to claim 38, wherein the panoramic image is of an exterior location.

42. The method according to claim 41 , wherein the panoramic image of a geographical location for use for navigation purposes.

43. The method according to any of claims 38 to 42, wherein the virtual three dimensional panoramic image consists of images of the location.

44. The method according to any of claims 38 to 43, wherein the virtual three dimensional panoramic image is constructed using CAD techniques.

45. The method according to claim 44, wherein the three dimensional panoramic image comprises images of the location.

46. The method according to any of claims 38 to 45, wherein the virtual panoramic display image is provided as stereo panoramic images.

47. The method according to any of claims 38 to 46, wherein the virtual panoramic display image is a still image.

48. The method according to any of claims 38 to 47, wherein the virtual panoramic display image comprises video images.

49. The method according to any of claims 38 to 48, wherein the interface communicates with the remote database via a network.

50. The method according to any of claims 38 to 49, wherein the interface communicates with the remote database via a mobile telephone network.

51. The method according to any of claims 38 to 50, further comprising an interface with a global position system (GPS) to receive positional data.

52. The method according to claim 51 , wherein the display is modified according to positional data received from the GPS.

53. A method of providing a navigable virtual three dimensional panoramic display, the method comprising: providing a navigable virtual three dimensional panoramic image; receiving data from a global positioning system (GPS); and modifying the navigable virtual three dimensional panoramic image according to the received data.

54. A system for providing a navigable virtual three dimensional panoramic display, the system comprising: means for displaying a navigable virtual panoramic image; an interface for communicating with a remote database; means for processing data retrieved from the remote database to modify the virtual panoramic image to provide the navigable virtual three dimensional panoramic display.

55. The system according to claim 54, wherein the interface communicates with the remote database via a network.

56. The system according to claim 54 or 55, wherein the interface communicates with the remote database via a mobile telephone network.

57. The system according to any of claims 54 to 56, further comprising an interface with a global position system (GPS) to receive positional data.

58. The system according to claim 57, means providing the capability to modify the panoramic image according to

positional data received from the GPS.

59. A system for providing a navigable virtual three dimensional panoramic display, the system comprising: means for displaying a navigable virtual three dimensional panoramic image; means for receiving data from a global positioning system (GPS); and a means for modifying the navigable virtual three dimensional panoramic image according to the received data.

60. A method of exhibiting museum artefacts, the method comprising the steps of: obtaining a panoramic image of an exhibition space; preparing a navigable virtual panoramic image data set based upon the virtual image of the space; obtaining a multidimensional image of an artefact to be exhibited; preparing a multidimensional image data set from the multidimensional image; and incorporating the multidimensional image data set into the virtual panoramic image data set to provide a virtual panoramic display image data set; wherein, when displayed, the virtual panoramic display image data set provides a navigable virtual panoramic display of the artefact.

61. The method of claim 60, wherein the exhibition space is a location within the museum.

62. A computer-readable carrier having stored thereon a virtual panoramic display image data set prepared according to the method of any of claims 38 to 53.

Publication documentation and web links are contained in the body of the text of this section.

Web links have been included. In some instances these may no longer be active. They are included here as a record of the original.

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