

Part Five
Electronic Space & Public Space
Museums, Galleries and Digital Media



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New Spaces

The multiplicity of sources available over the internet make the domestic space the newest space capable of exhibiting electronic arts!

This could as easily be the kitchen or the lounge room as it could be the studio. The opportunities for receiving original art at home is limited by material resources - to buy a painting or sculpture is an occasional possibility. Art in editions - prints, books, recordings, videos - commodify this possibility still further. Television and radio though potentially fertile in the field of performance, has remained firmly under the thumb of politicians, accountants and journalists, suffering from the legacy of both Orson Welles and his radio production of *War of the Worlds*, and Dr Goebells and the production of war utilising the medium of radio. Only occasionally is a full-blooded art experience delivered to the home with the technology of mass dissemination - the late Derek Jarman's *Blue* (1992) was a memorable example, experienced via television.¹

Electronic arts are beginning to appear in CD-ROM form or on the Web and make interaction and immersion with another creative person's output potentially a domestic activity - the privacy and repose that usually goes with this space is conducive to creative engagement. Indeed we can anticipate the development of work which responds to this state - contemplative, unhurried, exotic.....

In Sydney during February 1995, a popular 'serious' bookshop together with a computer supply company, sponsored an artists' CD-ROM corner, where customers could examine and without obligation, purchase work produced by several Australian artists and a few other titles.

In Melbourne during 1994 a small group of people with arts administration background rented a small shop space in a prestigious shopping development on the banks of the Yarra river in the centre of the city. Using their credit cards and a free rental period they exhibited computer generated work in all its manifestations, sold computer games and nick-knacks, and acted as consultants to match artists with industry on a fee-for-service basis.

In a seaside suburb of Melbourne, in the street associated with cafes and cakes, one of the coffee shops, in 1994, charged for access to the internet by the minute adding the cost to the tab. By 1999, every street in the country had a cafe selling coffee and access. If nothing else, it has revolutionised the backpacker experience, enabling travellers to rendezvous effortlessly in ways that would have taken previous generations months and a lot of chance using messages, the phone and snailmail.

The public network of galleries, both those with collections and those without, struggle to understand the issues, and in the case of the smaller more flexible spaces, mount the campaigns necessary to convince the funding bodies that investment is needed in systems and network connections.

Old Spaces

The work of contemporary artists working with 'new media', or more accurately, developing media technologies, is having a considerable impact upon established galleries and museums, the traditional sites for encountering visual art and artists. Photography and video, and more recently, computer mediated work and telematic networks, extend demands on the resources required by these institutions to act as both an archive and a forum, as well as challenge traditional notions of culture and heritage.

As an archive, the international museums' functions of collecting, cataloguing and conserving media art are being responded to, with few exceptions, in ways which are wholly lacking in foresight, enthusiasm and imagination.² As a public forum, again with few exceptions, museums and galleries are continuing to regard the audience as a localised, homogenous group of cultural consumers and seem unable to provide a space in which interactions of all kinds can occur between the media artist, the artist's work, the interlocutor of the nexus of the interaction, (the curator, the critic, the essayist, etc), and the individual visitor. Interaction, the cruxes of so much 20th Century art, other than through the somewhat ecclesiastical approach of the lecture and the guest spot, is manifest in these spaces only through the happenstance of certain media art 'pieces'.³

Points of convergence as well as dissonance in the visual arts will be examined within the following taxonomies. The points at which media art and media artists enter the public sphere, knowledge delivery, as distinct from knowledge development, and the emergence of work into exhibition spaces closely associated with the production studio and other places and points where visibilities might be 'hidden in plain sight'.⁴

Exhibiting, as administered by the larger institutions, curatorial practice and the options available for the presentation of work is also examined in addition to reflections upon the experience of interface and immersion within interactive multimedia that again asks the question - why should I want to interact? - this time viewed from the curator's position.

"Please Touch the Exhibits" – Interactions

Interaction, as opposed to reflection, is at odds with the 'real' world, or what could be called most certainly, the non-virtual world. Within most public spaces, including between the walls of most galleries and museums, the passive regard or reflection upon an artwork is accepted as a sign of respect for the integrity of its maker and the aura of the object itself. The pursuit through more active means of the personal prerogative within a work is somehow regarded as an aggressive form of self-seeking by the viewer, questioning traditions of authorship and challenging the inviolability of inherited artefacts.

While society accepts experience as it is mediated by corporations, governments and professionals that propagate viewpoints which entertain, 'provide answers' to the existential continuum, or simply provides distraction from all of that, the visibility, amplification and accessibility of the mediating process is absent. There is little space created for even a reflexive response, let alone the possibility for interaction.

For many who encounter art casually, visitors to museums and galleries, reflection is often assumed to be the response of the art viewer, reposing before the 'mirror of the soul'. Confronted with much of the art produced during this century however, the response required by the artist from the audience has more often been the reflexive - what the historian and commentator Simon Schama has observed as being: "...the increasingly precious and reflexive variations on the venerable modernist theme of the uncoupling of painterly process and its ostensible objects, the endless pirouettes around the holy of holies: representation theory". (Schama 1996)

The reflexive of course does not necessarily lead to the theoretical domain, even at the risk of alarming Schama and other fogyst commentators, but acknowledges and encourages, often provoking discourse beyond that of the interpretive, the subjective and the wholly speculative.

The responses of the audience(s) to an encounter with any kind of cultural artefact is contentious and too highly complex to be dealt with here satisfactorily. It could be emphasised though that 'the apparatus' that delivers the experience of the artefact is of course the artist's concern, even though the exact process by which this occurs may be ineffable to some. However, and with a loop back to a earlier sections (Jurassic Multimedia and Recap pp9), the means of (re)presentation of *Image ConText : One & Two* (1979 & 1982) gave an Audience, (that is the audience as theorised by the presenter, as well as the audience present on each occasion), the possibility to influence through their very presence, the nature and the course of events. The reflexive operations of response, spontaneity, participation and even chance, affect the reception as well as the direction taken during a playing or performance of the work.

In the context of electronic media it could be suggested that a succession of similar reflexes are what is now called interaction. Much recent multimedia work by artists explores this potential, essentially by enabling an audience of individuals to directly navigate through the various 'screen spaces' that make up the virtual whole. Such a demand, of the public in a museum, even the investing clientele visiting a gallery, demands an involvement, *a priori*, in the reflexive act of making the work, as well as the act of making meaning pursued to a level of contentment or pleasure for each individual.

Professor Roy Ascott once wrote that ours is "*an art which is emergent from a multiplicity of interactions in electronic spaces.*"

There is a certain irony in quoting Ascott, the champion of "telematic culture", or art on the wire - Homo Telematicus and the "connectivist manifesto" in relation to the concrete spaces that are the public galleries and museums. A multiplicity of interactions in electronic space can of course be encountered in the three dimensional space of a public gallery as well as the private space of "computus domesticus". Indeed the actual presence of people along with the virtual presence of those on-line could constitute a chance for divergent forms from within the emergence that Ascott proposes and which, since the time he made the statement, are emerging at an exponential rate and challenging the exhibiting institutions to reflect upon their role.

Trevor Smith, Curator of Contemporary Art at the Art Gallery of Western Australia has observed that there is a gap between art of the past, audience expectations and artists' production and process: *"Many galleries in Australia continue to treat photography, let alone video, or today's version of new media, with a great deal of suspicion, in part because of this recognition gap"*, and in part because media arts imply that the galleries and museums would need to change the paradigms and priorities within which they work.

"It has become increasingly obvious to me that especially when younger people are in the gallery, the video and photography for example, captures their imagination in a very different way to the traditional media. Now this does not mean that painting has ceased to be a significant arena for production, it is simply that as Arthur Danto has recently put it: "Painting is no longer the engine of art history" .⁵

Noel Frankham,⁶ the recent director of the Centre for Contemporary Craft in Sydney reported that he had spent one and a half hours with a touring social history exhibition, *Home of the Brave*, a computer system operating audio zones within the gallery. *"As I walked through the exhibition an 'audio guide' that only I could hear was activated. The individual control that the headset provided, without buttons or knobs, encouraged a level of empathy between me, the curators and the objects that I'd never experienced before, making the exhibition most moving, rewarding and memorable."*⁷

Institutional forms need to be developed in order that the widest possible multiplicity of interactions can occur in electronic space in the most public way, so that others, particularly tax-payers and sponsors can gain access to, and information about art in gallery and museum spaces. By extending the institutions function to a *dynamic* (non-ecclesiastical) educational role, the tendency which divides the information rich from the experiential poor would be ameliorated and accelerate the movement away from an attitude revealed in this quote from a young fogey Sydney-based arts commentator who opined: *"Peering at a monitor is an impoverished aesthetic experience."*⁸

Curations

Curators are often described as gatekeepers, with the implication that they are responsible for allowing certain artists through the gate whilst excluding others. But this is only part of the selection process that occurs.

Preparing the exhibition, *Burning the Interface*<International Artists' CD-ROM> for the Museum of Contemporary Art in Sydney between 1994 and 1996 was a good example of how, I subsequently realised, there are often several selection processes going on as part of the team enterprise that comprises developing a significantly resourced exhibition for a significant national museum. In a sense, the curator passes backwards and forwards through the gate many times, leaving many bookmarks on either side.

- There are the marks placed on a whole range of artworks.
- There are marks on the different art worlds who will encounter the work.
- There are also the marks placed on the various ways in which the work could be presented or installed and introduced to the different art worlds.

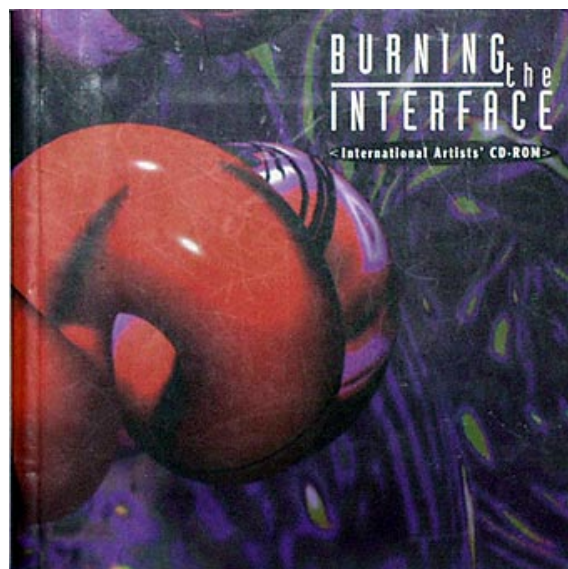
These are worlds which are many, varied and encompass a range of social spaces that may seem at odds with the project that is contemporary art. As the responsibility for resourcing the making of art shakes and shifts between the beneficence of patrons, the mammon of the state, the paying audience and the stingy collector, more recent notions of sponsorship by commerce shuffles into line. The corporate sponsor, cutting costs to the bone to obtain maximum leverage in the stock market listings, is introduced by the government to its 'social responsibilities'. The latest player in shaping what a nation's culture and art worlds should contain, besides consumer goods and vaporous services, like the others, seeks some positive returns.

For the artist or curator seeking engagement outside the immediate coterie, the art worlds list is lengthening:

- the art world of the museum or 'arts professionals' of directors, registrars, curators, administrators, conservators and all those whose fascination, and often experience, is with the science of the three 'c's': collect, catalogue, conserve. 'Show and tell' is an acquired predilection;
- the art world of the schools and tertiary courses, and the teachers who wish to present this world to their students, framed in an intelligent way, that challenges assumptions yet provides pathways and routes of access;
- the art world of the ever 'nascent' Multimedia Industry, which whilst steadfastly resisting the ideas and issues that artists wish to raise, cannot resist the possibility that some upstart has actually pointed the way to the next "killer app";⁹
- the world of art as understood by the computer hardware and audio-visual industries, which instead of displaying titillating body parts by way of demonstrating their equipment, from time to time seek an alternative from a contemporary artist;
- the world of art as imagined by the artist, who often regards the whole process of mounting an exhibition as 'a piece of cake', in which they are the chef and someone else is the restaurateur and somehow, for sure, people will want to flock to see the chef's latest creation, though may hesitate to actually taste, let alone digest its delights;
- the art in the world as fantasised by the media and its commentators who, having abandoned their readers and viewers to the ads, feel the only way to regain their attention is to be as equally preposterous with claims and counter claims, opinions and insinuations;
- the heartfelt world of the politicians, arts on sleeve, eager to support or condemn, depending on which way the polls are blowing;

- the artful world of the polities' instrumentalities, the personal and policy advisers, the various government departments, each running with their own agendas, many eager to receive proposals to add to their statistical counts and performance indicators, which might, as a bonus to the proposer, be able to deliver part of the budget requested.

The accumulation of marks against these various art worlds - and there are more - created whole nebulae of negotiations for the Burning the Interface development team. The outcome of these multifarious negotiations, and the many bookmarks created, were the conditions which gave the exhibition both its form and its content and, like most exhibitions, were about existential social collisions occurring during the project's existence rather than in some way representing a purity of artistic expression.



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This was multi-functional gate keeping, an unusual range of responsibilities, but not uncommon these days I suggest, when social infrastructure, the stuff we call 'a culture', is subordinated to social efficiency, as expressed by the bottom line of the current account.

The dissemination of multimedia art into public spaces including museums and galleries is a responsibility that cannot be taken solely by institutions and curators. It is a broader social responsibility that value-adds the social infrastructure in the areas of knowledge development, knowledge delivery and knowledge effect.

Knowledges

Knowledge development in this context is creating the conditions for artists and other knowledge workers to 'value-add' the 'ideas stream' as distinct from the 'money stream'.

The task that must also be value-added is the means by which outcomes from the ideas stream are applicable to knowledge delivery. Clearly outcomes from artists cannot be guaranteed, but the majority of work emerging from the studios can be delivered to the appropriate audience. Some work can even be placed in the public setting, and it would then address in some way, each of the art world audiences described earlier.

During a Panel Session at the International Symposium for Electronic Art in 1996, four of us who have been working in different ways on the delivery of artists' researches gave some guide to knowledge effect through the different strategies employed to locate and engage new and established audiences.

- Film and Video Umbrella¹⁰, a London based group headed by Stephen Bode spoke at the panel session about the kind of work Umbrella were undertaking in the mid-90s. This London based organisation had been operating for nearly ten years with funding from the Arts Council of England and had concentrated on researching and curating exhibits of work by British artists working with film, video and digital media. In Britain, artists' film and video had encountered institutional inertia from its first appearance in the late-60s. Though various artists' support organisations had assisted individuals to mount screenings and exhibitions of their work, it was uncoordinated at best and dissipated at worst. Bode's presentation covered the logistics of running such an organisation and detailed a major exhibit held in 1995 at the Natural History Museum in London, one of several non-art institutions with which the Umbrella had enabled artists access to existing resources and different audiences, who would for instance, encounter science 'content' within a interactive multimedia space.

- Another speaker at the session was Annick Bureau, President of Art Science Technology Network Inc (ASTN) which publishes *FineArt Forum*, and editor of the *International Directory of Electronic Arts (IDEA)*¹¹. She spoke in relation to a consultancy she had recently completed for the French Ministry of Culture about the future for museums and their object-based structures, their architecture, the intellectual patterns of the staff. She raised the issues of: 'cultural worth' in relation to the space available for creation; the narrativisation effect of art historical traditions; the novelty of technology in some contexts, for instance science museums, avoiding content problems associated with time-based media. Artists' fees and commissions in this area needed urgent attention. Curatorial practices of themes and surveys needed to give account to the flexibility of forms that electronic media produced, which in itself raised problems of conservation for museum culture. Flexibility was the key for the future, along the lines of theatre possibly. The Ars Electronica Centre (opened in 1997) could become a model for such an approach.



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- Jill Scott is an Australian artist based in Germany and after working in the mediums of video and performance she began working with digital installations in the mid-80s and during 1996 completed the massive interactive installation, *Frontiers of Utopia* (1996). She described in detail the plans for the 'hybrid' museum (that opened during 1997), at Zentrum fur Kunst und Medien (ZKM) in Karlsruhe under the directorship of Hans Peter Schwartz and used the Web site that described the exhibit to illustrate her points.¹² Here was to be a centre for knowledge, she demonstrated, that merged the virtual and the real whether the visitor was at the Museum in Karlsruhe, or on-line in another part of the globe.



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- My work on Burning the Interface<International Artists' CD-ROM> began in 1993. The many preparatory and logistical stages through which the project moved from inception to realisation is a factor in exhibition practice which, like the making of art, is often invisible and unknown to the audience. The many 'bookmarks' placed during the curation process, was closely followed by the Museum of Contemporary Art, moving into sponsorship raising and the public relations aspect which would enable the exhibition to be erected and an audience delivered through the doors.¹³

Each part of the process had a bearing not only on the work that was selected but also on the **way** it was presented. An exhibition of work on CD-ROM for instance, is not just a matter of loading the discs onto the computers. Though most artists had intended for the work to be seen by one or two people sitting half a metre from the monitor screen and a mouse with which to guide the work, some artists had used the CD-ROM simply as a storage device. This required, quite reasonably, the work to be encountered within a specially constructed installation involving a data projector and sound system.

All the work in Burning the Interface employed sound, as does most multimedia works. It was this critical element that most determined the show's design appearance and function and hence the setting in which the work was received. The exhibition manager, Louise Pether, and the designer, Colin Rowan, approached the use of the galleries with design elements that would deliver the best possible sound quality, without carry-over to nearby interactive stations.



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A T-shaped plinth was designed to contain within its base the computer processor box and keyboard, the monitor and mouse being placed on the top surface. Sound came through a grille in this surface and radiated upwards towards an acoustic panel that hung from the ceiling, two metres above the plinth. In the acoustically hostile space of a white cube galleries, together



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with careful setting of sound levels and judicious use of headphones, this sound delivery system protected the artists' intentions, the bottom line for the exhibition.

The MCA curator Linda Michael and I determined that a non-intrusive approach to providing explanatory material was critical to visitors' engagement with the exhibits and ability to understand a little about the genesis of the work. The walls of the white cubes were used to display, at intersections, technical and factual explanation and guidance, short interpretations of computer-screen icons employed in interactive work, and the appearance of the actual discs and accompanying packaging. 'Tip-sheets' at each interactive station provided assistance with navigation and a copy of the catalogues gave access to artists' statements and three essays related to the exhibition.

This dynamic approach to contextualising the exhibition was complemented by the education department of the Museum organising talks by artists with work in the show, together with writers, teachers and other commentators. Various groups from education, industry and government made formal visits which clearly for some was not only their first encounter



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with media art, but also the first chance to see what 'interactive multimedia' and the 'information superhighway' amounted to, given the column inches devoted to the subject since the publication of Creative Nation eighteen months previously.¹⁴

The "*major event the first international exhibition of digital works of art on cd-rom*" (Gauguet 1998) was an initial attempt to describe with some passion, the contained explosion that had occurred between 1992 and 1995 amongst artists in the countries

advanced with information technology, to re-utilise the tools being developed by the software industry and re-purpose a newish hardware tool, the CD-ROM burner, to distribute the outcome of their labours.¹⁵

The creative utilisation of information technology in the workplace, the home and the games arcade was the broader context in which the event was received, and the range of uses to which the technology was put by artists. *"The focus of the exhibition thus lies broadly in the 'experimental' area - where open-ended projects are commenced and where conclusions are not necessarily reached."*¹⁶

Two of the computers in the show were connected to the World Wide Web, and enabled some comparisons to be made between the off-line work in the galleries, and the early potential of more ephemeral on-line experiments. The relative ease of exhibiting on the Web, indeed of moving the studio and its processes into an on-line space, seemed to be the nirvana that many contemporary artists were seeking. For some, the whole process of submitting to the curatorial process, the often continuing demands from the exhibiting institution where work was requested, and the perceived over determined responses by out-of-touch critics was gladly given away in exchange for the Web, the 'newest medium'. *Liberté du parole!*

Media Formats

The nature of the technology being utilised by artists is one which is itself in a constant state of flux - each month there is another software release or new piece of hardware which is capable of revealing a whole new vista of possibilities, (of which for instance, the Apple Quicktime series of movie playback software has been quite fundamental to the development of artists' multimedia). Technical developments in hardware and software enables an artist to make a work that, whilst directly exploiting the features a new tool provides, can also manage to create a cogent and valid artwork. Even with media formats that have been around for a few years, such as CD-ROM, some work is actually characterised, if not constrained, by the particularities of the medium.

The "multiplicity of interactions in electronic spaces" in the contemporary scene can be outlined and are critical factors in the work that emerges:

a) CD-ROM is the medium that enables artists to conveniently transport their work from the production computer to another computer for an audience to experience.¹⁷ Whilst all computers currently are able to play CD-ROM, the complex and inferior Windows platform used by 90% of computers is not the production choice of the majority of artists.¹⁸ Together with public inertia towards this new and expensive means of leisure time activity, except among those professionally engaged in the field, enthusiasm for this most recent art medium remains restricted. The 'first batch' of artists' CD-ROM titles appeared in 1994/5 immediately prior to Burning the Interface. A 'second batch' is currently appearing during 1998/9, some of which incorporate another medium, the World Wide Web.

b) The Web, or WWW (World Wide Web) is the graphical browser part of the Internet and as such, is the 'instant' gallery of many artists dreams. Though the rent for the space is low, finding an audience is another matter. A major advantage though is that the Web can function as a kind of permanent 'work in progress' site, where sketches and components are exhibited or trialed interactively before they are placed into a larger or more complex work delivered via CD-ROM - the technical capacity of the Web to carry multimedia is strictly limited - and as such the Web is invaluable to curators for monitoring the development of new work as well as researching work that has already been exhibited. So called 'virtual reality', or interactive 360° 3D real-time rendering, (including Virtual Reality Markup Language - VRML, and Web 3D), is a technology being enthusiastically explored by many artists.

c) On-line exhibitions are more formally organised Web sites, with high quality and fast technology supporting them and a strategy in place for bringing the exhibition to the attention of an audience. (The Web is a very big and lonely place for an individual artist's site - think of a postage stamp floating in the Pacific!) Besides being properly funded with budgets similar to those in the corporate sector, sites can be linked to key sites to help funnel an audience toward the exhibition site. The work is often by mid-career artists whose work is written about and discussed.

The Walker Art Centre SHOCK¹⁹ + listserv forum has been an energetic approach to combining an object in a gallery with an object on a website and, utilising the listserv, enables visitors to auto critique the exhibition across the range of interests present. Responses may be to the curatorial initiative, or indeed the works themselves, or the tangential issues that the exhibition might ignite amongst the participating audience. As Dr Kevin Murray has observed; *"Criticism native to the Web is proceeding as we speak. Your inbox is now filling up with email from various lists announcing new sites and appending theoretical expositions. Anyone can participate and any subject is permissible."*²⁰

d) Installation work incorporates digital technology, often seamlessly, into the full range of contemporary activity. The utilisation of advanced programming as a means of computer mediated control of electro-mechanical constructions within the field of robotics and sculpture, has impacted upon the contemporary scene over the last ten years. Less sophisticated use of the technology has at least enabled artists to move away from the drear sight of the furniture of video monitors and instead have access to the more flexible data projector and the dynamic sizes and shapes of projected image it can produce.

e) Game and Arcade Consols often make appearances in exhibitions in the same way as a film or television program may be referenced for the specific cultural message they carry. There have not been many survey shows of this cultural phenomenon, which is strange given the ubiquity of the form and the dynamics of its specific aesthetic demanding the compression of vast amounts of specially designed and adapted sound and picture data into very small memory storage spaces.

f) 2D works on paper, vinyl and most other surfaces, generated from a huge range of output devices including dye-sublimation, ink jet, plotter, laser etc. whilst capable of imitating the physical appearance of accepted heritage items such as drawings, prints and photographs, can also be utilised to produce massive-sized images capable of covering an office tower.

g) 3D object making using processes that convert the virtual object on the computer monitor into an exact replica, (in resin most often), is an advanced outcome of using the computer to develop sculptural concepts. The use of CAD-CAM (computer aided design-computer aided manufacture) has enabled some artists to dispense with the workshop entirely and instead supply plans to fabricators.

h) Performance art has developed approaches to new work using motion detecting, movement following technologies, and options whereby the audience can provide input to movement, sound or text-based performance work. Camera and touchpad sensors extend the physical presence, remote sensing, the use of ISDN and internet connections, the spatial zone of presence and representation.

Practices

What is the range of 'new media' practice being developed at the moment by practitioners, and how might the outcomes move from the specialist exhibition venues to enter larger public spaces and interface with a wider audience? The categories reflect the critical development of specific technologies within the broad category misnomer of 'new media', currently being so eagerly explored by both emerging and established artists. The connections between the development of the technology by computer specialists, their interaction and non-interaction with artists from various backgrounds, and the adaptation of tools by various artists to achieve various outcomes, are therefore only briefly inferred.

Outlined below is a short survey of studio practice by broad category, with considerable areas of overlap and hybridisation, the purpose of which is to begin to identify the range that needs to be presented to the audience, and also aid in the planning of resources and the ability to select and exhibit to those various audiences described earlier. The area is clearly too large now to usefully provide examples of individual artists.

a) Artificial Life: a very vigorous area of current research by artists with advanced skills in software programming, with access to enhanced resources and facilities capable of creating real-time rendered 3D animation. Working in the computer game technology area, artists eschew the archetypal and paranoid obsessive narratives and instead mimic carbon-based life forms nonetheless unrestrained in their nature of behaviours. These often provide access points to guide the growth of entities within their digital domains and even provide out-of-body immersive experiences.

b) Cyborgs, Avatars, Agents are the Simulacra of another vigorous area, the non-gendered, the prosthetic, the anthropomorphic meme, spawned from the Artificial Life (AL) laboratory and crossing over into other practices, most notably digital communities and performance, where as symbolic beings they exist in digital and flesh-like forms, remote, autonomous or closely linked to human initiators.

c) Digital Communities : working in a variety of ways and manifestations on the Web - DigiCity, Recode, Rhizome, MOOS and MUDS etc., an area of sometimes vigorous interface between issues, passions, personalities (both real and imagined), discourse and inane banter. This area is particularly appropriate to the curatorial (and conservationist) process as there is a thin dividing line between the notion of work in progress and work on exhibition, much of the activity being truly ephemeral and indeed, appearing and then disappearing from the screens without warning. Related to this are internet specific manifestations, from listserv communities to random and organised linking between 'gamers', intent upon strategies that compete for supremacy in 'situation fantasies' involving mayhem and virtual destruction.

d) Writing: text + image : individual, collaborative, collective, communal experiments which though yet to have an impact on a wider public, (other than 'the new art of email correspondence'), like many other things on the Net, is quietly exploring possibilities and potential. The field is split between the derriere-garde literati accessing and proffering their favoured texts and the avant-garde, hypertextualising collectively produced magnum opus's and hyperlinking every known word of every known language.

e) Digital video technologies are having a major impact on the way artists are thinking about not just production, post-production and distribution strategies but also within the next ten years, their impact on current television programming and modes of reception for erstwhile linear media.

f) Digital Special Effects (DFX) is an area of the entertainment arts that has many resources for development and production poured into it as does the games market. The public's fascination with 'cinema/TV magic' cannot be overstated, (and many artists are associated with it as a means of earning a living). Romeo and Juliet (minimal) to Deep Impact (maximal).

g) the games market, both arcades and CD-ROMs, is a much bigger earner than cinema, (though cinema is often important in the cross-marketing of both), and many games are 'worked out' on Macs and PCs before being recoded and burnt into chips for Ninetendos and Sega etc. There are some artists associated with this area and clearly, as with manga, has generated a massive following and a significant aesthetic worthy of many a PhD thesis.

h) the 'post-modern and conceptual garden' category of production develops out of the 'traditions' of contemporary art practice and whilst utilising digital media and being open to the unique possibilities of the medium, is less driven by its specifically digital 'nature' and more concerned with the ideas which are being explored and expositied, freely using non-digital resources and materials in conjunction with some element of computer mediation.

j) Performance as a live and interactive encounter between performers, audience and digital media are being explored in a variety of ways in several national centres. The encounter may run 'formally' as installations in a performance space, or informally in the street through more hybrid installations which enable, in often unresolved ways, interaction via the internet. The sense that this becomes intrusions into streetlife, observed and measured by a hidden surveillance camera, exemplifies the confrontational, and can attenuate an attempt at communication of a most basic kind, a prerequisite for even the most experiential museum.

Exhibition Formats

Central to the purpose of 'formatting' or designing approaches to exhibiting is the need to recognise the value of curation as part of the process of knowledge delivery by providing a framework and context to enable engagement with often quite disparate artworks. The description of the exhibition through catalogue design, enables remote audiences to participate, and allows discretion by local audiences.

Having outlined some of the areas in which artists are working and the kind of tools and formats with which they are working brings us to the kind of critical approaches the exhibiting institution might take to curating and presenting the work. Such proposals could include:

a) Media: an exhibition based upon the medium of delivery, such as CD-ROM, as in *Burning the Interface*. At this point in time, now there is more work available, it becomes possible to curate a selection based on advancing a particular theme or context.

b) Survey: this approach to exhibitions of art have dominated the scene thus far. Besides *Burning the Interface*, there has been a significant handful of shows which have concentrated on surveying the output of Australian media artists: *Experimenta*, *Alternative Realities*, *dArt*, *Cyber Cultures*, *techné*, and others planned such as the *Digital Art Awards*, *Futurscreen*, etc. An international survey, (like *Burning the Interface*, or the annual *ISEA* exhibition, or *ZKM Medienkunst*), though desirable can be as expensive to undertake, research properly and to mount, as can be any other international exhibition of art.

c) Individual monographs of 'world-class' artists are less expensive to research but are similarly expensive to mount unless their sponsor/ collector/corporate backer wish to contribute. The other problem is, does the audience know these artists sufficiently to want to experience their work? Marketing individual artists, unless they are popular, is more fraught than selling the public a chance to experience something new and 'different'.

d) Technology linkages between the commercial exploitation of a particular technology and the artists use of it. For instance, digital video effects (DFX) companies produce outcomes which essentially address different audiences from the gallery goer. But by bringing together various combinations of the outcomes of work of artists and companies could be of interest to both.

e) Modern Histories of artists using media technology. Given the speed at which one technology is being replaced by another, in the relatively short period of 20 years, a whole strand of work can be rendered unviewable. With the rapid migration of video from reel-to-reel, to U-matic, to SVHS, to Hi8, to Betacam, and now DVD, much of the work made in the '70s on video is now lost. Whilst for some this may be cause for celebration, it nonetheless breaks the lineage of work and discourse current at the time of a work's appearance, making study and re-assessment chancy and open to blatant speculation. History survey shows may have to happen more often given the lack of conservation strategies in the media technology area. Electronic catalogues on CD-ROM and DVD-ROM may contain the only extent versions of works whose means of reproduction in the original form have been lost, through a continual process of copying, *a la Fahrenheit 451*.²¹

f) Theme shows centred on 'the experience', or 'the image', or 'the subject' can be as fraught as any other survey show for much the same reason - often a lot of re-sources are needed in one space at one time. However, the rewards to visitors can be enormous as was demonstrated by the alignment of *Burning the Interface* and *Phantasmagoria* in adjacent MCA galleries in 1996.

Strategies

The spectre of the museum as a sculptural shell into which the musty remnants of earlier ages are placed was in question at the Site-Time-Media-Space seminar held in November 1998.²² The experiences of museum specialists who work with media technologies and the research of artists who develop them, was the substance of this seven hour seminar.

"Garrulous media installations..." was far from Ian Wedde's mind when, as Concept Curator Humanities for the Museum of New Zealand, Te Papa Tongerewa, which opened during 1998, he was part of the large team who sought to *"find, win and grow a new audience"* for Our Place where the collections were to be utilised as a unified resource. Facing It is the section of Te Papa that commissioned media art from around the world.

In a series of extended apologies to potential Australian contributors whose email had gone unanswered, Wedde outlined the roller-coaster that he had ridden for the past years around *"the rocks of management"*. The curator as heroic figure emerged, as contracts were issued to the lucky few *"to extend artists' practice and placing risk-management at the feet of the institution"*.

The complex issue of resourcing specific media projects emerged at Te Papa. Bricks, concrete and salaries are less of a problem than accessing the technology and project budgets. Wedde advocated *"relationship brokerage"* as the method by which artists, institution and sponsor could collaborate to produce museum outcomes.

Within existing public spaces, several strategies can be adopted to give the audience access to the outcomes of media artists' labours.

a) In a dedicated space, custom designed to take account of all conceivable technical configurations that may be required it becomes possible to maintain a continuous exhibition of digital work, probably one or two works at a time, changed over according to program demands and resources. This option could require considerable resources to initiate but once established, require much less to maintain. The option would maintain the institution's involvement in and connection with contemporary activity in the field on a regular basis.

b) In a general gallery space considerable effort would be needed to equip the exhibition since an exhibition event would probably include between ten and twenty pieces of work. The publicity to launch the event would be considerable and to justify the investment the exhibition would have to have a run of months rather than weeks, as in alternative a).

c) A project space, which deliberately emphasises the process of creating "the multiplicity of interactions" (through integrated educational projects for instance) utilising the modest levels of equipment and facilities that most institutions can afford and maintain.

Conclusions

I have outlined the relationship between some of the outcomes of knowledge research and knowledge delivery - there are others - and related these to the restricted opportunities for gauging audience response. Ascott's *'multiplicity of interactions'* may well only successfully occur, as he suggests, solely in electronic spaces, not subject to the agendas of institutions, the tyranny of interlocutors and the constraints of architecture.

As Aurora Lovelock has observed: *"The problematic of cyber space versus museum space is surely the confusion of their inherent topologies within the specific topography of 'site'. Why should these spatial topologies currently, if ever, 'mix well'? ... Traditionally, the museum has been a designated place where classification and curation have been practised to create a sense of cultural invariance and continuity within a site-specific architecture and with 'discontinuous' art objects. The preservation and analysis of artefacts gives the illusion of permanence as well as an underlying order of value.*

*Paradoxically, in the digital context, the invariance and continuity which is provided by the underlying logic of the digital computer does not automatically give rise to a sense of permanence and value. In fact the opposite occurs. ... Sequential planning, a set of instructions, belongs to topology. In the context of the museum that means sets of objects, the "Japanese Ceramics Collection", a topology of relationships related to the architecture of the site; the promenade or the panopticon. Alternatively on the CD-Rom, or in the networked 'virtual museum', data objects can be classified through simultaneous 'nodes' of access."*²³

The design of knowledge delivery and method of access is crucial to understanding the distinction between museum topology, which sets out to propose a rational connection between objects and history, essentially a project of methodology, and museum revelation which through the act of provision gives access to the more dynamic and speculative project of contemporary media art that seeks a multiplicity of interactions, and is a part of the wider process of knowledge development.²⁴

There is clearly much to be developed in public spaces and the institutions which create public spaces, in relation to the new media that artists will begin to work with almost as soon as the technology appears. This is no surprise. The development of tools and techniques and the development of ideas is the flux in which artists move. In this time of speed, what needs to be questioned is the structures that place the conservative nature of the museum professionals in the space between the audience and the rapidly changing domain of the media artist.

Notes for Part Five

¹ Channel Four Television UK, who commissioned this piece, was responsible through the work of Alan Fountain and Rod Stoneman of advancing, during the 80s, the work of artists working through the medium of television, following a prolonged campaign through the 70s by the film-makers themselves lobbying through the Independent Film-makers Association (IFA).

² At the beginning of 1999, the situation in Australia is a case of two steps forward and one back. New media forum and archiving projects are pressing ahead in Melbourne (Cinemedia) and Brisbane (Griffith Artworks) whilst in Sydney, the Museum of Contemporary Art, through the termination of David Watson's position as Cinematheque Co-ordinator, has not only put the MCA's claim to the word contemporary into doubt but also relinquished an amateur with the very qualities needed to establish a moving image department: knowledge, determination and passion.

³ *Other Spaces* (Dixon 1997), a Report on the marketing, distribution and exhibition of interactive art was commissioned by the Australian Film Commission from Rachel Dixon and published in October 1997 and is a useful source book for this area. The collated data and opinion unfortunately obscures the complex polemics and the broader strategies that need to be embraced.

⁴ This section of the thesis is based on talks and presentations given at the following events: ISEA96, Rotterdam: Panel Session Chair Digital Media and Public Spaces, September 1996; Art-Iculations conference, PICA, Perth, February 1997; Key Centre for Media and Culture Policy Research seminar, Griffith University, May 1997; (Cracking the) Binary Code conference, CCP at Interact97, Melbourne, November 1997; The Cyber Frontier: the Digital Future: the 5th International Documentary Conference, Brisbane, November 1997; Australian Film Commission, Industry and Cultural Development branch seminar: 'Exhibiting Digital Media, December 1997; Microwave exhibition of contemporary artists' CD-ROM: Videotage International Video Art Festival, Hong Kong, December 1997. With grateful acknowledgments to David Watson.

⁵ Smith, Trevor, paper *New Times, New Spaces*, Art of Sight, Art of Mind, National Association for the Visual Arts national conference, Sydney December 1998.

⁶ Now Professor Noel Frankham, Head of School, South Australia School of Art.

⁷ Email correspondence with Noel Frankham, October 1998.

⁸ John MacDonald in the Sydney Morning Herald, May 1996

⁹ "killer app" or killer application is computer industry jargon referring to a computer software application which will catch the imagination of the public and sell a lot of copies. This does not always benefit the inventor of the application, as Macintosh Computers discovered with their WYSIWYG operating system, (the result of programmers and artists working together) which was used as the basis of a clumsy and inferior operating system (Microsoft Windows) that has since captured, through market domination, 90% of computer users world-wide.

¹⁰ www.beyond2000.co.uk/

¹¹ <http://nunc.com/>

¹² www.zkm.de/

¹³ See more in *Artlines* 1/4 1996.

¹⁴ The Federal Government 1995 cultural policy statement from the ALP/Keating administration. In spite of relentless pursuit, in collaboration with both NAVA and the MCA, of some of the funds that the Federal government had announced in Dept of Communication and Arts documents that it wished to spend in the area of digital media exhibitions, none was forthcoming. The Australian Film Commission conversely was generous in its diligent support for the exhibition and later, in its touring version.

¹⁵ In addition, three publications within the exhibition, *artintact*, *Mediamatic* and *Artifice*, showed that serious attempts were being made to provide regular channels for niche distribution of artists' work to occur. By 1999, little further progress has been achieved.

¹⁶ Leggett, Mike & Michael, Linda; *Introduction* ; Burning the Interface catalogue.

¹⁷ Discussed in Leggett, Mike; *CD-ROM - the 21st Century Bronze?:* *ibid*

¹⁸ Of the 130 works submitted to Burning the Interface, only four used the Windows platform.

¹⁹ www.walkerart.org/salons/shockoftheview/ The listserv forum is an internet tool enabling registered contributors to read and reply to submitted email messages (posts) around a particular broad topic (for example, exhibiting digital media) whilst pursuing particular lines of research or debate (threads). It is similar to newsgroups (for which registration is not a pre-requisite) and is open to intervention by anyone at anytime.

²⁰ Letters: *Net-art and the argument for critical decompression*: RealTime/28, Dec 1998.

²¹ *Fahrenheit 451*, the Louise Malle film of 1972 based on the book by Ray Bradbury in which great works of literature are, by decree, protected from destruction by fire by being returned to the oral tradition of story-telling, mouth to ear, generation to generation. The title of the book/film refers to the temperature at which paper combusts.

²² Site-Time-Media-Space - New Media in Museums, 17/18th November 1998, convened by the Creative Director of CDP Media, Gary Warner, prime media designer for the Museum of Sydney where the seminar was held. Full report by Mike Leggett in RealTime/28, December 1998.

²³ Lovelock, Aurora, [*shock*] listserv forum item, (abridged) Nov 1998.

²⁴ See Part Six: Sontel

Part Six
SonteL
Interactive CD-ROM prototype

Part Six: Sontel

What is it that make interactive multimedia a potent tool in the range of mediums with which the artist has to work?

To summarise aspects of digital technology:

- it is a technology which is ubiquitous, available in 1999 in any high street in the land, in a range of specifications to suit a range of budgets - second-hand equipment is plentiful and could enable an artist to establish a basic studio for as little as one week's basic minimum wage.
- the technology is physically compact and requires little studio space.
- the multimedia artwork produced likewise occupies little physical space and because it is easily transportable, either on CD-ROM or via computer networks such as the internet, can provide access to the work itself rather than documentation of it.
- the multimedia artwork, if completed correctly, has a physical immutability which protects it from interference or damage, and by its very ubiquity and ease of duplication, moves it away from becoming a unique and 'precious' object requiring special security measures when made accessible to the audience.

To summarise aspects of multimedia practice:

- multimedia brings together a range of media skills (the so-called convergence factor) and otherwise separated disciplinary skills to enable the production of integrated statements employing a range of 'media image' options.
- as a digitally based medium, the acquisition, manipulation and duplication of 'media images' is not impeded by the need for distinct procedures or separated processes, these are integrated, most often, onto the same desktop platform or operating system.
- being a time-based medium, multimedia offers options for the artist to develop forms of addressing the audience - the interface - which encourage individual responses, or interaction, and thus full participation in the experiential and meaning-making processes.
- audiences for multimedia art can be addressed in a wide range of venues, from street to gallery to the kitchen table.

The multimedia interface is the potential location of empowerment, where responsiveness and intervention is usually required and often rewarded. The interface, in its broadest sense, being where the artwork itself, the experience of art, is centred. Through the active processes of interaction and immersion, the subject's incorporation into the artwork tends to subsume intentionality or manipulation by the artist as outcome. This openness to the experiential, often eschewing the interpretive, defines the subject's 'role' within the artwork as of fundamental importance. The representation of time/space is central to the 'unsettling' of narrative cinematic space, order and sequence.

Sontel

If the modernist project attacked the separation apparent between form and content, (a view that created false distinctions within a work and helped create in the viewer or readers mind an illusion of wholeness and unity), then 'interactive multimedia' could be claimed to be a tool that, *a priori*, maintains 'content' at a distance, requiring an active participation by the viewer or reader in the making of the work. Whether this then delivers to the participant a vivid experience that assails the senses, or a profound encounter that imparts wisdom and knowledge, is wholly dependent on the active engagement of the 'interactor' with the imagination of the work's maker.

Sontel is the working title of an interactive multimedia work, a prototype on CD-ROM which sets out to test and, as outcomes of the investigation, demonstrate issues of legibility and comprehension within this medium. Whilst examining means of enriching the experience of interacting with such a work, issues related to the conveyance of knowledge from within the work are engaged. It seeks to test that ground where knowledge is imparted in a way that is both vivid and pleasurable.

The 10-page proposal submitted to the Australian Film Commission¹ in the course of seeking seed funding for the project is reproduced as Appendix B, (*Strangers on the Land*). A comparison could be made between the notes that follow and the content of that proposal to take account of the shifts that have occurred between the project's inception and where it has reached as prototype, a copy of which is contained in this



thesis. Appendix C is a copy of the project development proposal submitted to the AFC some months after this part-way point to completion and describes in succinct form the major changes proposed that would shape the form and content of the final work. By this time the title of the project had developed to become *PathScape - pathways through an Australian landscape*.

Proposal

The seed-funding proposal for *Sontel* was developed over a two-year period. It followed on, as these things often do, from a chance encounter with a small booklet purchased in a holiday town's bookshop. The booklet outlined the history of that part of the South Coast of New South Wales, commencing with notes from Capt Cook's *Endeavour Journal* in which he noted observing 'figures on a beach'.



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The beach was the same one that I and my family had visited regularly for the previous 15 years and formed an image in my mind of the people had used the beach in the millennia before the passing of the barque Endeavour. The little booklet of course, made no reference to the earlier occupation of the land, reflecting an almost neurotic state of denial, broadly held, that has only in recent years become vigorously challenged.

An initial proposal for seed-funding entitled *Figures on a Beach* was badly mis-understood at its assessment, a result of insufficient consulting on my part, the writer, and inexact reading by the Film Commission consultant. However, as a result of the feedback from this assessment, it was the first step in a process that began to truly develop the project, through a process of enrichment by the involvement of several other artists and professionals.

The second proposal entitled *Strangers on the Land* not only clarified the aims of the project but also re-designed the basic interface which would enable 'interactors' to enjoy the experience of the encounter but also access, as an option, the stories that contained knowledge about the images with which the viewer would engage.

The Synopsis of the project describes the general nature of investigating an interface that could be used for accessing different 'content databases', as well as the more specific purpose of addressing the narratives pertinent to the landscapes of the South Coast.

Production

The proposal was successful in attaining the seed-funding budget of \$35,000 and towards the end of 1998 a team of five other artists and professionals began work. The production schedule was to be part-time, cover a period of six months, and required that people be prepared to work for a base-line daily rate of \$175.00.²

A total of 130 person/days were allocated from within the budget to cover the production of the prototype to 'proof of concept' stage such that a demonstration could take place on a mid-level power computer using either the Macintosh or Windows operating systems.

Image acquisition was the first major task undertaken by myself and occurred through the summer months utilising a stills digital camera.



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Initial navigational and interface constructed by Adam Hinshaw using the Macromedia Director 7.0 authoring software was gradually tested and modified, in consultation with Brad Miller.

The images being gathered with the digital camera by myself were delivered to Alex Davies for incorporation into two areas of the navigational structure - the 'track' forwards and backwards movement (East to West and back again), and the 'morphed pans', which at various specific points, displayed a panning action through 360° (either to the left or to the right). As these were completed they were assembled into position throughout the autumn period of 1999.

Research by Kathryn Wells involved the finding and acquisition of images and texts from historical archives, and meetings with many people, both indigenous and non-indigenous, in the geographical area.

Sound acquisition by Bruno Koenig occurred throughout the same period, with a large number of sound files being created and revised ready for delivery towards an end of May deadline.

Communication was maintained throughout this period between myself and the various crew members, mainly using email, and through meetings which happened on one evening a week. Whilst individuals worked to project deadlines, the point at which the work was done responded to the priorities operating around their other engagements. It can only be left to the imagination as to how this artwork, *SonteL*, might have



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been substantially different, if it and other projects of a similar speculative nature had access to the resources enjoyed by corporate and commercial production teams, which enable a production period free of other commitments.

Completion

The process of production quite obviously when dealing with a plastic medium, besides testing some of the concepts described in the proposal document, developed further ideas, as well as clarifying the overall concept.

To begin with, the title had changed. The working title acronymic *SonteL* had replaced the larger mouthful, *Strangers on the Land*. The combination of the sound 'son' (as in song) with 'tel' (as in tell), seemed to describe quite perfectly one of the major aspects being investigated - how to impart or tell about knowledge, in the spirit of a song. Whilst much knowledge was unearthed about the South Coast area, almost too much, the means of conveying much of this was through the device of narrator or witness, 'giving voice'³ to the histories emerging from a flow of narrative images.

During the process of giving the project its sound - the 'sounding' process - the distinctions between the natural world and the 'world of mankind' became even more apparent. Besides operating at a more primal level than our over refined sense of sight, sound has the illusionistic capacity to isolate association and meaning from the background. In some ways it is more precise in describing a place than the visual

image of that place.⁴ We stand in the rainforest and hear the sound of the wind in the trees and the sound of a bellbird - we are 'there'. We "peer at a monitor" and see only an impression of the rainforest, and we cannot 'see' the bellbird. The dimensions of sound, particularly in the stereo mode, (which this prototype is not), will become more essential in a full-scale version.

The synopsis for the project was rewritten, not to change the intention of the project but rather to clarify its description in the light of active research and practical outcomes:

"SonteL examines Landscape as the mediated image, central to the beliefs and identity within Australian culture both indigenous and non-indigenous. Through a dynamic and interactive process of presentation, intersections are made with interpretations and mediations about The Land, its many appearances, its many histories."

The juxtaposition of place and related viewpoint in support of the above statement was demonstrated in the prototype to function successfully. The depiction of the Landscape was felt by some to be 'too abstract', requiring 'a map' or some means by which the interactor could orientate themselves into the topography that was represented. This viewpoint seemed to not only deny post-Cubist spatial representation and reaffirm the Cartesian principle, but echo the description in one of the narratives that relates the surveyor's story. Here the empirical project that was eventually to 'map the Empire' in mid-19th Century finally reached the South Coast parish of Benenduruh, and thereby, in the name of the vertical arrowhead, dispossessed *"a culture based on the inclusive principle of commonality"* and replaced it with *"a contemporary law based on the exclusive principles of private property"*.⁵



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'The prototype interactive has been re-assessed by myself and the others in the team after a two to three-month period elapsed, prior to submitting a further proposal to the AFC to take the project further forward. This will enable us to, quite literally, complete the walk in the landscape from the sea to the ranges (and by looking back from the ranges to the sea thereby 'complete the loop'), but also discover and relate more of the stories associated with this coastal section of Australia. Whilst at times in the piece it is possible to realise which 'actual places on a map' are represented, the landscape that is described is a much less specific, more generic place.

The huge advantage of having achieved a prototype 'visualisation' of a concept is that there is something tangible to show, even if it encourages people to say that they 'were lost' on the walk, or disagree with the inclusion of some story or other. The process of group interaction around the prototype, particularly with indigenous people with whom the project has developed a relationship, will reveal misconceptions on the part of the authors and provide unexpected solutions to perceived problems.

The navigational precept presented in the prototype has been re-visited. The orientation of the subject within this virtual space is not so much the issue here - part of working with any interactive multimedia piece is about orientating within it.⁶ But how knowledge is accessed, the indicators that flag the options for knowledge rather than 'more experience', are most important. Whilst in the current prototype version it is not a requirement 'to take the didactic path', since it is possible to enjoy the virtual walk and the things you see and hear on the way, the 'virtual places' in which the telling occurs and the signs that are given to indicate some options are available, have been revised.⁷ The screen space around the central image which moves the view from one Zone to the next will be used to signal the Nodes which access the narratives. Likewise the screen space around the central image of the 'morphing pan' will indicate with a part visible image, or colour, the 'availability' of a narrative.

At the completion of a narrative, whether accessed from a Zone or from a Node, the options offered (the Objects) will, besides offering further narrative, include a Source and/or Index function which will enable users to explore the Content of the work as a resource tool enabling quick access to specific stories and the images and texts associated with them. From here, rather than the previous level, the pre-structured boolean queries for a Web search engine will be launched.

With access to the enhanced resources being proposed, control of the movement between these levels of engagement with the work, with modified coding, will be given to the user, instead of through the use of 'timeout' periods to drop the user back to a previous level.

Content development from the prototype as detailed in Appendix C will include:

- closer working and consultation with the Ulladula Land Council whose country borders onto the area being documented;
- interface programming that will enable the direct reproduction of still images ('on-the-fly') rather than through the film emulation tool of Premiere, which will lead to much improved image quality within the narratives as well as quantities of narratives;
- whilst retaining the basic concept of design a much richer sound environment utilising more sound variation and stereo reproduction;
- a wider range of speakers' voices, both documented and reading prepared texts;
- extended research of narrative material enabling the creation of a greater quantity, and also a selection of stories which more carefully follow the precepts of the project treatment.

Finally

The term interactive has been at the centre of the concept of this investigation, certainly as a thread within the thesis component. At a practical level, both in the development and curation of the exhibition, *Burning the Interface*<*International Artists' CD-ROM*>, or within the production of *Sontel*, interaction has been the key and the style of this investigation into interactive multimedia.

Notes for Part Six

¹ The Australian Film Commission had made a very early intervention into digital media (see Part Two, New Tools) and throughout the 1990s against significant government and industry pressure, maintained a policy of encouraging and providing resources for 'intelligent experimentation' with this new medium, primarily for people with a visual and sound arts background. At the time of writing, the AFC were under enormous pressure to collapse various screen culture infrastructure and experimental production initiatives into the film industry's black hole of feature film 'script development'.

² At this point in time, work in most areas of the multimedia industry was paid at more than twice that amount, considerably more for individuals with talents, such as programmer, who were in short supply.

³ 'giving voice' was an expression used by the indigenous filmmaker Richard Franklyn to describe the setting-up of an indigenous website in Victoria during 1998.

⁴ *Pure Vanity* section from *Image ConText:One* (1979) - see Appendix A: Filmography.

⁵ *Sontel* (1999)

⁶ I discuss this at length in the section entitled Navigating Levels of Meaning, in Part Three.

⁷ Such revisions were considered at a mid-way stage in the development of the navigational coding but were felt to be premature, and anyway, beyond the options within the budget to in effect, begin again.

Appendix A

Filmography

- 1986 *Image ConText:Two* (video)*
- 1984 *The Body on Three Floors* (television)
- 1983 *A History of Airports* (video)
- 1982 *Image ConText:One* (video)*
- 1981 *Vistasound* (film)*
Friday Fried (film)*
- 1980 *Bristol Bands Newsreel* (8mm soundfilm-on-video)*
- 1976 *Sheepman & the Sheared:Parts 1-7* (film)*
- 1975 *Eighteen Months Outside the Grounds of Obscenity and Libel* (video installation)
- 1973 *Erota/Afini* (book and film)*
The Heart Cycle (video)*
Porter Pac (video)*
- 1972 *Tender Kisses* (film)*
wHole (film)*
One (film)
- 1971 *Shepherd's Bush* (film)*
- 1970 *Sheet and Unword* (films with Ian Breakwell)*
- 1965 *The Lark* (graduation film)

*These prints or copy tapes are in current distribution with The Lux Centre (incorporating the London Film-makers Co-operative) and at other centres and collections worldwide - refer to CV in Appendix D.

Much of the 'original master' material from this work was lodged in 1987 at the British Film Institute National Film Archive.

Appendix B

Strangers on the Land (Working Title)

Seed Funding Proposal

for an

interactive multimedia CD-ROM prototype

Principle Artist and Producer: MIKE LEGGETT

"The Australian people are mostly newcomers. They and their land must form a bond otherwise we will always remain poor, confused strangers in our own lands."
Tim Flannery *The Future Eaters*



Strangers on the Land (Working Title)

an interactive multimedia CD-ROM prototype exploring aspects of Australian identity

Principle artist and Producer: Mike Leggett

Synopsis

Strangers on the Land will be a visually and aurally stimulating experience about the land, its appearance, its stories and its ownership. Content will be layered beneath a navigational design analogous to a walk through the Australian bush, though the issues it raises may be applicable to land and people anywhere. The interactive process will directly inform the user's current knowledge and comprehension of concerns around land ownership and utilisation, whether that issue is "certainty" or "land rights".

Treatment

Land is central to Australian culture and history. For indigenous people it is the source of spiritual as well as material nourishment and has been for more than 40,000 years. For all Australians technology and industrialisation have precipitated a crisis in our regard for the land and its capacity to sustain the demands upon which it is called upon to meet.

As a predominantly urban culture much of what we experience and understand about the land is conveyed and interpreted to us by a whole range of media: cinema, television, painting, photography etc. This mediation process places a frame around the subject, whereby 'the land' becomes landscape, an object for distant appreciation.

"Landscapes are culture before they are nature; constructs of the imagination projected onto wood and water and rock." Simon Schama

This production will develop an interface and navigation system, which will enable the user to enjoy as a direct experience a rich visual diffusion of landscape images collected from specific NSW South Coast locations. We consider it essential for the interface design to provide a pleasurable experience whilst providing intuitive access to a range of knowledge. Through a dynamic interactive process, the interface design will encourage the user to explore the many stories, both historical and contemporary, which lie hidden in the landscape. A series of narratives, commentaries and interactions will be encountered which explore the transitions that occur between people and the land, the individual and the landscape - place and memory.



The Interface - a Specification

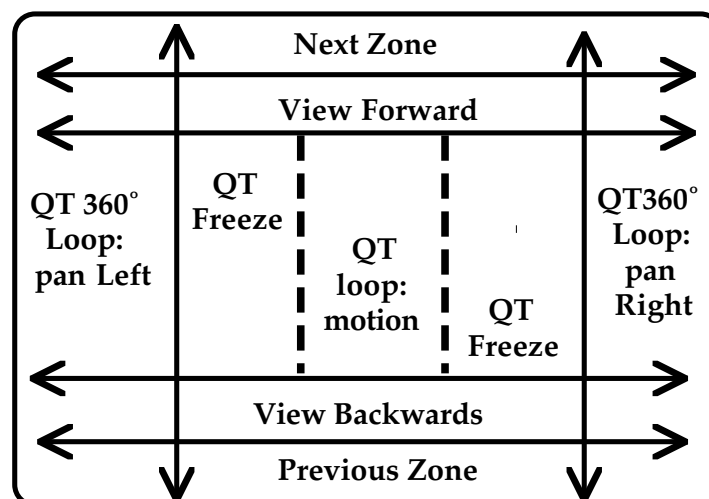
The principle of navigation within this database of objects is centred on gesture - the movement forward to 'go' forward; a movement back to stop still; a move backwards to 'go' backwards. Sideways movement, left or right, enables viewing left or right, giving access to other controlling options. This basic system of navigation, analogous with a walk through a landscape, will avoid dependence on labelled buttons or "bottom of screen controls". The walk will progress using hand to Mouse gesture and move from zone to zone. Within each Zone there will be a 360° pan containing Nodes as 'hot spots' which access short narrative sequences. At the completion of each sequence there will be further options for exploring some Objects.

Movement through this database of images, captions and sounds will be effected in this prototype by using a Mouse, (though this may progress to joystick or a spatially prepared, movement-sensing system).

Condition One (C1)

Movement through the Zones (Mouse ButtonUp)

On-screen cursor rollover zones and function:



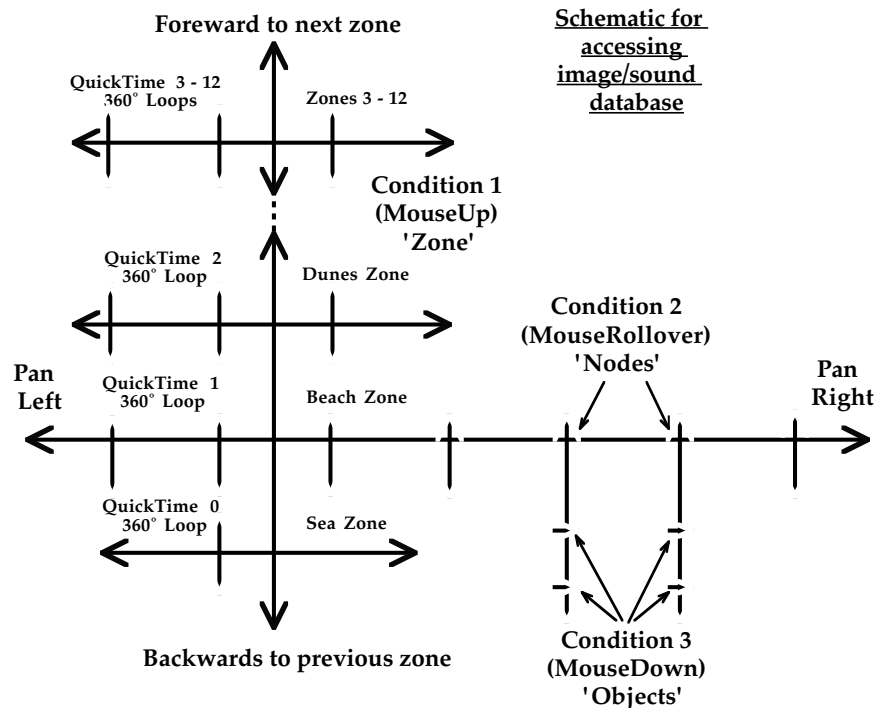
The 'walk through' the landscape represents movement as a series of image steps moving forward from zone to zone. The analogy is continued with the options of being able to look around to left or right; to look backwards; to return to the previous zone.

The view to left or right will be a 360° of the landscape as viewed from one spot through a morphing process. This merges each form and feature of the aspect one to another through a sequence of 12 times 30° static shots. The landscape heaves and writhes as the Quicktime movie plays through - see test - it produces extraordinary shapes and unexpected conjunctures of form and colour which are the nodes for gaining access to other levels. At various nodal points in the pan, (some obvious, others revealing themselves), the user may bring the cursor back to the centre of the screen and thus halt the panning action.

Condition Two (C2)

Selection of a Node - the Narrative Sequence (Mouse RollOver)

The 'node' that is halted in centre screen can now be triggered with a RollOver - there follows a 'narrative sequence'. This will be a visual sequence and a sound track lasting from 10 seconds to 60 seconds. The images will be delivered to the screen in several different ways - as a JPEGview slide show, or Quicktime movie or Quicktime VR. Most often though the images will be full-screen PICT images gathered with a digital camera - successive exposures made on a tripod at each location will enable an illusion of movement within the landscape to be maintained whilst remaining economical with the computer's resources.



Condition Three (C3)

Selection of an Object (Mouse ButtonDown)

At the end of the 'narrative sequence', and before a Timeout period elapses, it is now possible to access a different set of on-screen cursor rollover options via ButtonDown on the Mouse. These will develop the narrative as a series of Object Tags which will:

- extend the factual or anecdotal evidence by providing reference details, or the full text form of a quotation, for instance;
- linking to other Nodes in other Zones to enable a series of narratives which address the same topic to be followed;
- a Web search function which will be effected in part by pre-programmed boolean queries that will deliver links to other sites where further information can be found about the topic that was the subject of the vignette.

The prototype will demonstrate the potential of each of the options.

The Timeout returns the user to the Node selected in the C1 Zone. Here a further Timeout will return the interactive to the Quicktime loop seen at the beginning of that Zone.

"I am before a moving image - it is an image of the sea, the horizon line bisecting the frame of the image, left to right - the surf rolls in, endlessly. "

The Software Engine

The central frame from which one journeys forth creates the introduction to a consistent set of metaphors of navigation which will be controlled dynamically by the internal programming language of the authoring package Director. Basically, translating a top down, left right set of motions in the foreground or say the surface, to a landscape digital video file in the next layer below the surface. This will be a Quicktime video file, which has all the attributes of traditional analogue video tape, but with the added bonus of random access, as the file type also supports a time code for location of frames or sequences.

This can be further extended with use of other file formats in relation to the project and would add the ability to track position relative to the file but relational to other linkable 3D movie files.

The objective is to build a smooth easy to use intuitive "front end" which is compartmentalised into generic self contained software modules which can be written and re-edited by the artist to contain the content of the interactive encounters.



Content

The options for interaction offer a choice between the experiential, and the combination of the experiential and the didactic. The choices are governed by the gestures made with the Mouse and may respond to questions such as:

What lies behind the beach?
What lies in the Bush?
What is obscured by what I see?
What is to be seen behind what is obscured?

The content will be conveyed through a series of parallel discourses encountered at the various Nodes within each Zone. There are two broad areas of knowledge, (the contemporary and the historical) and a third area which speculates upon the conjunction of the two. Each area will be signalled by colour coded Nodes, it thereby becoming possible to 'follow' a discourse thread.

Content Threads

1. Contemporary evidence:

- a) 'Living on the land' : indigenous and non-indigenous accounts.
- b) Popular Imagination and the Culture of Narratives; movies, publishing, advertising etc.

2. Historic and other empirical description:

- a) Historical from local, national and international archives including: official recorded colonial history, recorded personal history both indigenous and non-indigenous, reported by media both local and national.
 - b) Geographical: topographical, flora and fauna, farming and mining, industry and commerce, settlement, etc
3. Ideas and Analysis and the Authorial Presence: the function of the chorus or benshai - comment, conjecture, and projection - moving scale outwards from the local and the specific to the global and the general. This will be effected in part by the use of the Web search engine feature to deliver links that will stay current with issues raised by the interactive.

Audience

There will be two main modes of address:

- a rapid, experiential encounter with a familiar landscape, poetic to the senses but which is presented in a way that prevents simple absorption: it is vivid but unsettling.
- a more measured pace which, like a pause during a bushwalk or a break from a task, encourages reflective thought on conjective even disputative information: it is didactic but in the active sense, like absorbing a well constructed novel, or examining an archeological site.

The audience will have interests in art, ecology, various histories, media communications, etc. They are most likely to be working in industries such as visual art, multimedia, education, tourism, publishing etc.

Distribution and Exhibition

The audience will encounter the work in public spaces and be encouraged to spend longer periods with it in more private and less distracting domains.

As an interactive CD-ROM, this would be publicised and made available for sale through the various target audience outlets, both off-line and on-line. It would also be sent to key national and international festival directors, curators, galleries, museums, universities, government departments of education, tourism, arts etc.

Further Development

Further funding for the project would:

- enable development for more specific use in the art or education setting;
- facilitate a collaboration between the proposer and an indigenous artist or group.

"These histories are about the transformations required in continually remaking constitutive imagination within cultures. In these histories we hear a whole range of alternative forms and plots which handle time/space differently, experiment with identity differently, juggle continuity and discontinuity differently and take as their structures not progress or heroism, but morality, culture, land and Law." (Healy pp71)

For the **publishing and education market** for instance, further development could commence by expanding the depth of references, since clearly the resources available for a prototype limits the number of Nodes and the extent of the Object Tags. Using the prototype, additional support would be sought from publishers, the Board of Studies, Oz on CD, the ABC, university departments, various State and national bodies, (including AME and the Centenary of Federation Fund), to extend the research and production of further Objects attached to Nodes. The active collaboration of scholars in the field, (Healy, Carter, Goodall et al), would be sought.

The capability of the interactive to take input from the keyboard, either in response to specific requests from the material, or as a connection to the internet, and the ability to print selected material, will also be explored at this further development stage, together with a 'smart index' search engine able to work with colour, sound and visual detail descriptors.

For the **art and museum market**, extra resources would be found to enable the interactive to function in an open space. By developing its visual quality and user interface, ie spatial sensing, and utilising projection and multi channel sound, the immersive and experiential aspects will be amplified. This would require high-end graphics-based computers, data projectors and sound / acoustic spaces linked to sensors. The user will immerse into the sound and image, controlling navigation by moving in a space that would be the equivalent of the Mouse positions - literally, locomotion by side-steps.

Using the prototype, various computer industry companies both here and overseas would be approached, together with arts promotional, university and government departments with resources for developing a high-end, high performance version, (SGI for instance), including Museum of Sydney, SOCOG, Centenary of Federation Fund, and other Federal funding initiatives.

To facilitate a collaboration between the proposer and an indigenous artist or group requires complete confidence and equity between partners. This can only happen if the prototype, besides creating its own terms of reference, can demonstrate to the collaborators a *modus operandi* to reconcile the different cultural perspectives. It is proposed that the prototype will aid this process.

Though the style and language of the final paragraph are dated, (even though it follows the 1967 referendum), it could be regarded as an early statement anticipating cultural reconciliation. It is intended that this project will become part of that process.

"The Dreaming is many things in one. Among them, a kind of narrative of things that once happened; a kind of charter of things that still happen; and a kind of logos or principle of order transcending everything significant for Aboriginal man. If I am correct in saying so, it is much more complex philosophically than we have so far realised. I greatly hope that artists and men of letters who (it seems increasingly) find inspiration in Aboriginal Australia will use all their gifts of empathy, but avoid banal projection and subjectivism, if they seek to honour the notion." Stanner

Bibliographical Research Sources (Funding Proposal)

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Appendix C

PathScape

Pathways through an Australian Landscape

Completion Funding Proposal

for an

interactive multimedia CD-ROM

Principle Artist and Producer: MIKE LEGGETT

"The Australian people are mostly newcomers. They and their land must form a bond otherwise we will always remain poor, confused strangers in our own lands."
Tim Flannery *The Future Eaters*



PathScape

Pathways through an Australian Landscape

An interactive multimedia CD-ROM which explores images and sounds from a part of the coastal plain of SE Australia, the location of belief and identity for both the indigenous and non-indigenous people who live there. Through a dynamic and interactive process of presentation, intersections are made with interpretations and mediations about The Land, its many appearances, its many histories.

Principle artist and Producer: Mike Leggett

Treatment

Land is central to Australian culture and history. For indigenous people it is the source of spiritual as well as material nourishment and has been for more than 40,000 years. As a predominantly urban culture much of what Australians experience and understand about the land is conveyed and interpreted to us by a whole range of media: cinema, television, painting, photography etc. This mediation process places a frame around the subject, whereby 'the land' becomes landscape, an object for distant appreciation.

"Landscapes are culture before they are nature; constructs of the imagination projected onto wood and water and rock." Simon Schama

For all Australians technology and industrialisation have precipitated a crisis in our regard for the land and its capacity to sustain the demands upon which it is called upon to meet.

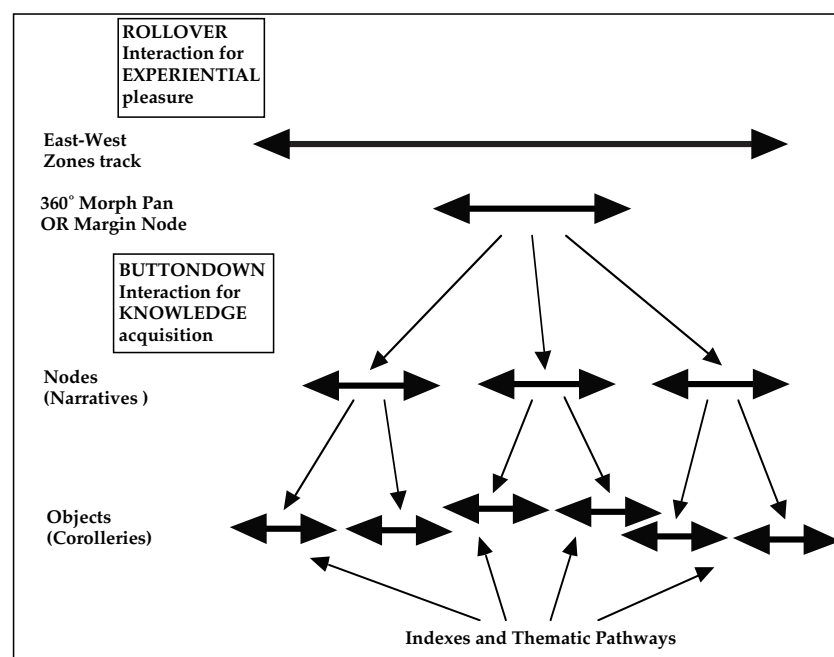
Interface: the Audience

The audience will have interests in art, ecology, history, social relations, media study, communications theory, etc. They are most likely to be working in industries such as visual art, multimedia, education, tourism, government, publishing etc.

The interface design approach is demonstrated in the prototype and based upon two principles:

- a rapid, experiential encounter with a familiar landscape, poetic to the senses but which is presented in a way that prevents simple absorption: it is vivid but unsettling.
- a more measured pace which, like a pause during a bushwalk or a break from a task, encourages reflective thought on conjective, even disputative, information: it is didactic but in the active sense, like absorbing a well constructed novel, or examining an archeological site.

The various levels which the user can explore can be summarised with the following diagram:



Interaction

The prototype has been developed with an interface and navigation system which will enable the user to enjoy as a direct experience a rich visual diffusion of landscape images collected from specific NSW South Coast locations. We consider it essential for the interface design to provide a pleasurable experience and then as an option, provide intuitive access to a range of knowledge. The learning of shortcuts and their skillful use could become a feature of the fully developed version. Game play with the elements of stories may also become part of the experience. The many stories, both historical and contemporary, which lie hidden in the landscape, compel the user to piece together the real picture that is often at variance with the image of a landscape, often regarded as simply the backdrop to events. The series of narratives, commentaries and interactions which are encountered explore the transitions that occur between people and the land, the individual and the landscape, place and memory.

Interface Design - Variations from Prototype

The principle of navigation in the prototype is centred on gesture - the movement forward with the mouse to 'go' forward; a movement back to stop still; a movement backwards to 'go' backwards.

Sideways movement, left or right, enables viewing left or right with a 360° panning action within which access to narratives is indicated.

Moving to the diagonal corners will provide conditional access to narrative options.

Condition One (C1)

Movement through the Zones (RollOvers)

A variation to the prototype on-screen cursor rollover areas and their functions will appear as such:



This basic system of navigation, analogous with a walk through a landscape, moves from one landscape zone to the next and avoids dependence on labelled buttons or "bottom of screen controls". Each Zone represents

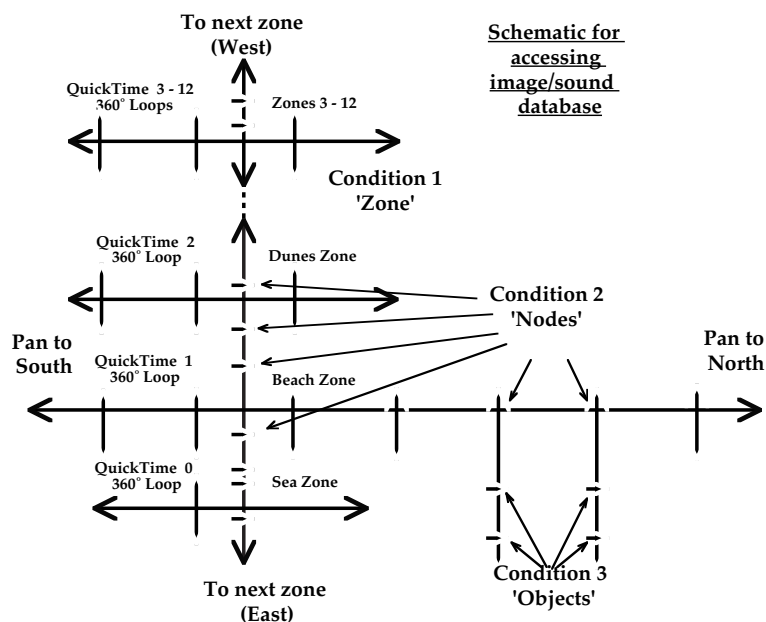
distinctive natural phenomena. At variation from the prototype:

- i) direction of movement, to the ranges (west) or to the ocean (east) will be indicated either with a graphic device to top or bottom of screen; or a larger cursor arrow, or with colour: red towards the west, yellow towards the east. Or a combination of larger arrow and colour.
- ii) access to narrative content will be signalled as part of the 'tracking' or 'perambulation' process from the ocean to the ranges. The space around the central screen will be utilised to display an image/or colour which signal the type or 'the thread' of the available narrative (Node). These partially seen images will correspond with specific points on the path, appearing and disappearing as the user moves along it. By moving the cursor back to centre screen and halting movement the image around the central frame can then be accessed by a rollover to one of the diagonal corners. This will reveal the whole image and possibly launch some sound which in turn indicates the subject of a narrative which can then be accessed in full with a buttondown.
- iii) whereas in the prototype there is a timeout period of 5-10 seconds that, without mouse movement, returns the user through the levels eventually to the screensaver, a fresh strategy will be adopted that enables active control of movement through the levels. This will most likely involve conditional parameters which enable departure from the 360° pan or an image sound narrative by moving the mouse to the top or bottom of the screen, ie through a re-set of the hotspots in the movie pan.

Condition Two (C2)

Selection of a Node - the Narrative Sequence (ButtonDown)

By clicking of the Margin Node, or, as in the prototype by selecting a Node in the Morph Pan, a narrative together with image sequence will launch, or through use of the mouse by the user, exploration of a single image whilst listening to the story.



Each narrative will usually be restricted in length to 30 seconds maximum. Users will thus be motivated, if they wish to hear more of a longer story, to continue in the subsequent or neighbouring part of the path, or the morph pan, for its continuation. Searching along the path through the Bush for the continuation point of a story will at first be a fragmented experience for the user but as the path is learnt, gradually experience, and visual and sound memory, will help re-assemble the complete story. Each Morph Pan will give access to stories related to 'a single issue' and the interrelated stories they contain - such as: the logging industry; the effect of tourism on local ecologies; etc.



Condition Three (C3)

Selection of an Object (ButtonDown)

At the end of the 'narrative sequence', and before a TimeOut period elapses, it is now possible to access a different set of on-screen options via ButtonDown on the Mouse. These will develop the narrative as a series of Object or corollaries from the initial story, which will:

- extend the factual or anecdotal evidence by providing reference details, or the full text form of a quotation, for instance; an Index to all the content would be accessed from here. This could utilise several on-screen devices - an indigenous totem, or a non-indigenous symbol - enabling linking to other Nodes in other Zones creating immediate access to a series of narratives which address the related topics to be followed by the user;
- as a part of the Index option, a Web search function will be enabled in part by pre-programmed boolean queries which will deliver links to other sites where further information can be found about the topics of a Node or Object narrative.

In addition, a greater depth of programming will:

- better manage the opening / navigation of many narrative sequences in many folders. This would allow smoothing of transitions between levels, both upwards and downwards, and be achieved with the possible use of a new metaphor.
- improve bugs and speed problems and the enhancement of CD-ROM playback will be reworked to give the interface a much more responsive feel. This will include extensive beta testing as well as CD optimisation prior to Quality Assurance to software/ computer industry standards.

Further options:

- A Compass/Sun like device that sits on screen and rotates indicates some sense of location to the user, could be an optional item that is turned on when required.

TimeOut periods will return the user to prior levels until the screensaver image of surf on the beach is reached. The screensaver will display individual words or phrases extracted from the narratives which will, like the Index, be linked directly to a content database.

"I am before a moving image - it is an image of the sea, the horizon line bisecting the frame of the image, top to bottom - the surf rolls in, endlessly. "



Content

The options for interaction offer a choice between the experiential, and the combination of the experiential and the knowledge-based. The choices are governed by the gestures made with the Mouse and may respond to questions such as:

What lies behind the beach?

What lies in the Bush?

What is obscured by what I see?

What is to be seen behind what is obscured?

Motivation for the short-term encounter or sustained involvement over the long-term will rely on a compelling interactive process which leads the user through a series of pleasurable and remarkable encounters with sound and image, offering as an option to the user, an engagement with areas of knowledge designed to intrigue and inform, linked together by this landscape.

The content will be conveyed through a series of discourses encountered at the various Nodes within each Zone. The two broad areas of knowledge arising from human interaction with the material circumstances of this country, the contemporary and the historical, part fact and part belief related to this landscape, will form the researched substance of this fully developed version.

Zones

The number of Zones traversed will expand from the six in the prototype to twelve in the full version:

0	Sea and Headlands	Not in prototype
1	Beach	In prototype
2	Creek	"
3	Dunes	"
4	Light Bush	"
5	Wetlands	"
6	Rainforest	"
7	Highway	Not in prototype
8	Rainforest Gulleys	"
9	River Flood Plain	"
10	Ranges Slopes	"
11	Ranges Peaks	"

These Zones form the skeletal structure for exploring the landscape, its appearances and its stories. Each area of discourse will be signalled by colour-coded or image Nodes visible within each Zone, it thereby becoming possible to 'follow' a particular discourse or thread.

Content Threads Summary

1. Contemporary evidence:
 - a) 'Living on the land' : indigenous and non-indigenous accounts.
 - b) representations through Popular Culture; movies, publishing, advertising etc.
2. Historic and other empirical description:
 - a) Historical from local, national and international archives including: official recorded colonial history, recorded personal history both indigenous and non-indigenous, reported by media both local and national.
 - b) Geographical: topographical, flora and fauna, farming and mining, industry and commerce, settlement, etc
3. Ideas and Analysis and the Authorial Presence: the function of the chorus or benshai - comment, conjecture, and projection - moving scale outwards from the local and the specific to the global and the general. This will be effected in part by the use of the Web search engine feature to deliver links that will stay current with issues raised by the interactive.

Content - Development from Prototype

A full version of this interactive will incorporate changes to the navigational structure already outlined on page 5. Other developments from the prototype, listed below, also have implications for the density of content related material.

Indigenous People

A meeting with the Ulladulla Land Council and the Budamurra Aboriginal Corporation in Ulladulla at which the prototype was demonstrated has led to the Land Council expressing a desire to contribute stories to a full version. A non-exclusive licence to include these stories would be purchased. In addition, we are currently researching ways in which Budamurra could become the producers of the narrative sequences through a related customised training program auspiced by Metro Screen.

Should Budamurra not be in a position to produce all sound and image material then the project producers will provide copies of material collected during Budamurra sequences, and the final production, to the community and also to the archive of the AIATSIS library.

The aim of the project is to retain and develop the methods of consultation and collaboration with the Budamurra Aboriginal Corporation that has existed amongst the crew and copyright holders during the making of the prototype. This will preserve the integrity of stories licensed to the production, and their context, within the structure of the overall work.

Production Programming

Adjustments and improvements to the script programming in the prototype will enhance production techniques for scripting each narrative sequence in the full version. The implementation of an automated procedure to batch convert a series of image files and a sound file into a linear 'slide show', will allow more time to be devoted to optimising navigation features, and the preparation of a range of stories in Quicktime format. These will provide timings for each image which are then entered into a plain text document which, in effect become coded interpretations of the QT movies. These, when pasted into Director, then call the original picture and sound resources, (more economically stored assets than QT movies), to create the picture and sound narrative 'on the fly'.

Sound

A stereo track will be introduced to the sound design, running in conjunction with parallel mono tracks and 'spot' effects to provide a richer sound presence tied closely to zone character and ecology - volume level could also become relational to location within a Zone. Budamurra and Bruno Koenig the sound designer have both indicated a desire to collaborate closely in this respect. Stereo sound design will also considerably enhance the sense of place during the morphed pans, for instance.

In close collaboration with the interface programmer, sounds to indicate sequence transitions and to confirm option-taking, together with the creation of silent spaces will extend the dynamic operation of sound throughout experiencing the process of interaction.

Spoken Text

A greater variety of voices would read the prepared texts than was possible in the prototype, in order to create both a greater level of surface and expression and the ability to use the first person form of address. In describing the natural world, ie a geological setting, or relating the events of the past, ie the development of the timber industry, these will be communicated through the use of the narrative form rather than that of the lecture. Each of these stories or groups of related stories will be directly accessible through the index/content section under short titles - The Geologist's Story, The Timber Worker's, The Sawyer's Story etc.

Resource, Index and Search Capabilities

Sources of cultural material will be referenced as an option from the end of each narrative sequence and as a searchable index. The design of the index could include thematic pathways suggested by icons, images, as well as words.

In order to maximise the 'resource potential' of the completed project one of two indexing systems will be selected:

- Indexing System (lite) - at the end of every narrative movie a 'Source/ Index' icon will enable the user to view a text document containing source and possibly technical data (the kind stored with each QT 4.0 movie). A few keywords associated with each narrative sequence could also be searched from this option location, to enable the launching of narratives with the same keyword.
- Indexing System (full) - similar to the indexing of above but with more comprehensive features, such as cross references to other narrative keywords held in a searchable database enabling users to research particular themes via a three-framed indexing structure.
- A snake like optional item on screen could display a topography of the track, and the location of the user as an icon could be indicated. This could also be used like a scroll bar.

To extend the use of the interactive as a learning resource, options for other kinds of input from the keyboard will enable:

- through connection to the internet, pre-scripted complex searches of the Web to be undertaken with an improved dialogue box interface;
- the ability to print selected material from the index database.

Content Research and Copyright

Further development will commence by expanding the depth of references made in the prototype and through fresh research into the Zones that will be new to the full development version. Besides the authoring of fresh material, this will be pursued through libraries, archives and the Budamurra Aboriginal Corporation in Ulladulla. The active collaboration of scholars in the field, (Healy, Carter, Goodall et al), will also be sought.

A database of the 'content assets' will be established to enable efficient selection of material as well as the tracking of potential rights payments to, and permissions from, copyright holders. It is envisaged that much of the historical material will be outside copyright.

Kathryn Wells, the researcher, will also liaise and develop with Budamurra, cultural protocols and a contract for the production or joint-production of suitable material based on the non-exclusive rights to stories. The project will respect Budamurra's desire for overall product integrity and benefit, including in the process of production, the contribution of multimedia production knowledge and skills by crew members to Budamurra community members.

Technical Research

Further research will seek extra resources would be found to enable the interactive to function in a large open space or gallery, for the art and museum market. By developing its visual quality and user interface, ie spatial sensing, and utilising projection and multi channel sound, the immersive and experiential aspects will be amplified. The purpose of this research will seek simply to enable, rather than prevent, the migration of programming and content to high-end platforms.

Marketing, Distribution and Exhibition

The audience will encounter the work in public spaces and be encouraged to spend longer periods with it in more private and less distracting domains through the purchase of a CD-ROM. This would be publicised and made available for sale through the various target audience outlets, both off-line and on-line.

The interactive will be promoted and marketed as both an installation and as a CD-ROM take home to key national and international festival directors, curators, galleries, museums, universities, government departments of education, tourism, arts etc.

Research Resources and Bibliography

Refer to *Strangers on the Land* seed funding proposal.

Appendix D

CURRICULUM VITAE June 1999

Research and Exhibition

- 1999
- Recipient, curatorial research travel grant, New Media Fund, Australia Council. Itinerary including - Invencao Sao Paulo (ISEA99) to present, 'Media Art, Autonomy and Country', joint paper with Ellen Pau (Hong Kong); Ars Electronica, Linz; Kiasma, Helsinki; San Francisco Museum of Modern Art; Walker Art Center, Minneapolis; Smithsonian, Washington DC; ZKM, Karlsruhe and others in Philadelphia, New York City, London, Berlin and Amsterdam.
 - Research, development and curation of Digital Hybrids for the Museum of Contemporary Art, Sydney on the work of Natalie Jeremijenko and Perry Hoberman - exhibition postponed to 2000.
 - Paper on curatorial research tour to NxT Symposium, Darwin.
 - Panel member for Bug, multimedia exhibition at Melbourne Film Festival.
 - Principal artist and producer, funding development proposal to Australian Film Commission for 'PathScape - pathways through an Australian Landscape'.
 - Recipient, travel grant from NSW Film & Television Office.
- 1998
- Australia Council On-Line Forum; "Do We Produce too Many Arts Graduates"; consultant, moderator and evaluator.
 - Principal artist and producer, seed funding proposal to Australian Film Commission for 'Strangers on the Land (Sontel)'.
 - Recipient, travel grant from NSW Film & Television Office.
- 1997
- Videotage International Video Art Festival, Hong Kong: 'Microwave' exhibition of contemporary artists' CD-ROM.
 - BURNING the INTERFACE <International Artists' CD-ROM>: exhibition curator for tour to Perth and Brisbane.
 - The Cyber Frontier: the Digital Future: research and presentation for the 5th International Documentary Conference, Brisbane, November.
 - 'Digital Media and Public Spaces' paper given at:
'Art-Iculations' conference, PICA, Perth;
Key Centre for Media and Culture Policy Research, Griffith University;
and in modified form at:
AFC ICD seminar 'Exhibiting Digital Media';
Design Centre, University of Western Sydney;
Fine Art Dept of the Northern Territory University;
'(Cracking the) Binary Code' conference, CCP at Interact97, Melbourne.
 - Recipient travel grant from Industry and Cultural Development Branch of the AFC to attend Fulbright Symposium, Darwin.
 - VISNet proposal for NAVA with Merlin Integrated Media to DoCA for Australian Cultural Network project.
 - 'Figures on a Beach' CD-ROM production proposal to AFC.
Film print purchased Australian Film Commission.
- 1996
- BURNING the INTERFACE <International Artists' CD-ROM>: exhibition curator for the Museum of Contemporary Art, Sydney, March - July and tour to Adelaide and Melbourne.
 - ISEA96, Rotterdam: Panel Session Chair 'Digital Media and Public Spaces', with the travel support of the Australian Network for Art & Technology.
 - Brisbane International Film Festival: 'From Silents to Cyber' CD-ROM and cinema exhibit, The Hub cybercafe.

- 1995 -ISEA95, Montreal: paper 'CD-ROM - the 21st Century Bronze?', made possible with a research grant from the Industry and Cultural Development Branch of the AFC, which included visits to centres in Canada, England and Ireland.
-ELECTRONIC MEDIA ART DIRECTORY: International Distribution and Exhibition. Researcher and Editor for the Marketing Branch of the Australian Film Commission.
-'Intersections95' art and technology conference, UNSW: paper 'Burning the Interface - Artists' CD-ROM'.
- 1994 -'DIGITAL MEDIA and the VISUAL ARTS': discussion paper for National Association for the Visual Arts.
Film print sold to National Library of Australia
-ARTISTS' CD-ROM: grant from Film Development Branch of the Australian Film Commission to research exhibition proposal for the Museum of Contemporary Art, Sydney.
-'Intersections94' art and technology Conference, UNSW: paper 'CD-ROM - the 21st Century Greek Bronze?'
- 1993 -BEAGLE BAY: series of digital photo and Quicktime pieces based on NSW South Coast location.
- 1992 -LOCUS: distributable computer/interactive study of the dynamics and context of the interface between machine and viewer.
- 1990 -PREDICTION PIECE #10: video and computer image component development for Lyndal Jones's performance.
- 1989 -PARADOX relational database: research and production of various databases for Community Services Victoria, Inner Urban Region.
- 1988 -FACEWORK : treatment on the human face and the people who make it their livelihood.
-TALES GATES : installation, MIMA Experimental; Gertrude Street Gallery, Melbourne.
- 1987 -THE DIARIES OF A WELSH SWAGMAN : treatment for Teliesyn.
-24 HOURS : 8mm film-on-tape installation; Watershed Gallery, Bristol.
- 1986 -COLWAY THEATRE TELEVISION PROJECT : outline script for Teliesyn, shortlisted by Channel Four Television arts. CONJUNCTIONS : outline script for Bristol Film Workshop, shortlisted by ACGB.
-PLANK POINTS and TALE OF A GATE : photo-constructions in South West Arts exhibition, Watershed Gallery, Bristol.
- 1985 -READINGS FROM.... : treatment and pilot tape, for Bristol Film Workshop.
-SPORTING CHANCE : treatment and pilot tape with Bristol Film Workshop.
- 1984 -THE BODY POLITIC : treatment and pilot for Bristol Film Workshop.
-JUNGLE : treatment and pilot tape with Playwrights Company for Bristol Film Workshop.
-NEW DANCE AND LIVE MUSICIANS : treatment and rehearsals with Dance Centre for Bristol Film Workshop.
- 1983 -THE OTHER SIDE: EUROPEAN AVANT-GARDE CINEMA 1960-1980 : USA film tour exhibition.

- 1982 -JETHRO TULL : TEA : SOLO : IMAGE ConTEXT:THREE : four treatments for Bristol Film Workshop and Channel Four Television.
- 1980 -BRUNEL'S DREAM : collaboration with Bristol University Drama Department on the conception, design and installation of projection devices for a production by John Downie.
-BBC OMNIBUS : collaboration with arts programme about the 'first casualty of broadcasting'.
- 1980 Film Print sales : to British Council for tour of USA; to National Library of Australia in Canberra; to Paris and New York Film Co-ops.
- 1977-9 -IMAGE ConTEXT : lecture/performance to accompany film presentations.
-BEAUTY & THE BEAST : collage exhibited at Camden Arts Centre surrealist show.
- Film Print sales : to Arts Council for tour in Europe and Australia, Perspectives on Avante-Garde Film; to South West Arts; to ACGB for the Hayward Gallery exhibition, FILM AS FILM.
- 1976 -SHEEPMAN & THE SHEARED : a film commenced in 1969, examining the conjunction of film and a rural landscape. In seven parts, total duration of 30-minutes
-ARTISTS' BOOKS : ACGB touring exhibition.
- Film Print sales : to BBC TV Open University 20th Century Art series.
- 1969-75 -OUTSIDE THE GROUNDS OF OBSENIETY AND LIBEL AND INSIDE THE GROUNDS OF HYDE PARK : video installation Serpentine Gallery, London.
-NOTES FROM A YEAR-ROUND MOVIE and NOTES FROM A VISIT TO THE JAN VAN EYCK AKADEMIE : silk-screen prints for The Recollection, SW Arts touring exhibition.
-EROTA/AFINI : a two-way narrative, in film form, (30-minutes), and book form; published by Beau Geste Press, Devon.
-INTERVIEW : an auto-interview, for Austrian Television, 1-minute.
-PORTER PAC and THE HEART CYCLE : two 15-minute videotapes exploring the potential of portable industrial video equipment.
-TENDER KISSES : film examines the television image within a domestic environment : 20-minutes.
-'wHOLE' : an archeological dig in progress: a 5-minute film.
-ONE : an exhibition/event by visual artist Ian Breakwell in the Angela Flowers - Gallery, London : 20-minute film.
SHEPHERD'S BUSH : a fragment of film expands the confines of the cinema : 15-minutes.
-APG (Artists Placement Group) exhibition, Hayward Gallery, London : design and operation of video facility.
-SHEET : with Ian Breakwell, a bedsheet is encountered in a variety of locations and events : 25-minutes .
-UNWORD : an event/performance by Ian Breakwell in which the camera as performer produces a film: 50-minutes
- Production Award, Visual Arts panel, South West Arts; Prizewinner, South West Arts/ Westward TV Open Art Competition; Production assistance Award, Film&Video panel, Arts Council of Great Britain.
- Film Print sales: to Belgian Film Archive, to Belgian BRT television channel.

SCREENINGS at exhibitions, cinemateques, festivals, colleges, universities and conferences throughout Europe, Australia and the Americas including; Institute of Contemporary Art, London; ACME Gallery, London; Tyneside Cinema, Newcastle-on-Tyne; Arnolfini Gallery, Bristol; Beauborg, George Pompidou Centre, Paris; Edinburgh Festival; Espace d'échanges d'Art Contemporain, Lyon; Chapelle des Penitents Blancs, Avignon; Kommunales Kino, Hanover; Kino Mansfield, Derbyshire; Frankfurt Book Fair, Germany; Third Eye Centre, Glasgow; Derby Lonsdale Independent Film Awards, Derbyshire; the Parachute Center, Calgary; Pacific Cinemateque, Vancouver; Pacific Film Archive, Berkeley, Cal; Canyon Co-op, San Francisco; Rocky Mountain Film Centre, Boulder, Colorado; Theatre Vanguard, Los Angeles; Carnegie Institute Museum of Art, Pittsburgh; Millenium Film Workshop, New York City; Center for Media Study at SUNY, Buffalo, New York State; SCREENINGS cont: Musee des Beaux Arts, Montreal; Centre for Experimental Art and Communication (CEAC), Toronto; Bristol City Art Gallery; Newlyn Gallery, Cornwall; St George Project, Liverpool; The Basement, Newcastle-on-Tyne; Stejdlicht Museum, Amsterdam; Museum of Modern Art, Oxford; Milan Biennale, Italy; National Film Theatre, London; X-Screen, Cologne; Walker Gallery, Liverpool; Pesaro Festival of New Film, Italy; ART Spectrum exhibition Alexander Palace, London; CAYC Gallery, Buenos Aires, Argentina.

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RealTime /32 'Sontel' in liftout 'Working the Screen';
Vertigo Vol1 No9, 'Margaret Tait Remembered' by David Curtis.
- 1998 <Compacts> oeuvres numeriques sur cd-rom : Presses Universitaires de Rennes :
'Towards a new Economy of the Digital Work of Art' Bertrand Gauguet
- 1997 World Art, 'Burning the Interface'
- 1996 Real Time /13, 'At the Real and Space of Interface' Keith Galeish
Artlink V16 No2&3, 'Landmark Exhibition' Lyn Tune
Photofile No 40, 'Making Strange' Darren Tofts
'Squatting the Media' Linda Wallace
Art+Text No 54, Burning the Interface review.
Time magazine June 3, 'Spirit in the Machines'
Click! on-line mag May, 'Words for the Cities'
Real Time /11 'Critically Interactive' John Conomos

Other reviews and previews for Burning the Interface in:

The Good Weekend; Sydney Star Observer; Sydney Morning Herald; Sunday Telegraph; The Australian; Daily Telegraph; Capital Q-Xtra; The Age; AFC News; Australian MacUser; She; ArchiData News; Blitz; City; Elle; Beat; On the Street; 3D World; The Canberra Times; Australian Printer magazine; Smarts; PC Week; Sun Herald; Weekly Computer Report; Artlines.

Diverse Practices: a Critical Reader on British Video Art pp355

- 1988 Experimenta 1988, Melbourne; catalogue.
1986 Charting Time : Serpentine Gallery, London: ACGB touring exhibition catalogue.
1985 Film & Video Artists on Tour.
1984 South West Survey : exhibition catalogue
Regional Film & Video Directory.

- 1983 "The Other Side - European Avant-Grade Cinema 1960-1980": USA film tour catalogue.
- 1980 Screen Volume 20 No. 3/4: "Film-Related Practice and the Avant-Garde."
- 1979 Film as Film : Hayward exhibition catalogue.

Post Production

- 1993 PREDICTION PIECES: compilation tape of all the Pieces #1-10 for retrospective exhibition installation. 60-minutes for Lyndal Jones.
- 1989 SHADOW OF THE CHIMNEY: the residents of the Western suburbs in conflict with industrial polluters. 48-minutes by Still Moving Pictures for Film Victoria, off-lined from BVU.
FIRST TIME TRAGEDY, SECOND TIME FARCE: the Bicentenary and colonial history. 60-minutes by Counter Productions for Film Victoria; as co-editor, on film.
- 1988 TROUBLING THE TYRANTS: 40th anniversary of the signing of the UN Declaration of Human Rights. Promo by Open Channel for Museum of Victoria, off-lined from BVU.
MELBOURNE DIG: chronicling the largest archeological excavation undertaken in the City. 40-minutes by Warner/Hughes for Film Victoria, on film.
- 1987 BEFORE THE LAW :police training,bail, sentencing and social work reveal British Law at work. 4 X 30 minute documentaries by Forum Television for Channel Four TV, off-lined from Betacam.
WHAT'S NEXT? :youth unemployment,training and recreation in the year of the British General Election. 25-minute promo by Forum Television for the Educational and Social Research Council, off-lined from Betacam.
IOLO MORGANWYG-the Bard of Liberty : dramatised documentary about the 17th Century Welsh poet and nationalist, the inventor of "the Welsh tradition". 50-minute English and Welsh language versions by Teliesyn for S4C and BBC Wales, on film.
- 1986 DANGEROUS CHARACTERS :the Italian ethnic community in Britain, 1920 to 1945, the rise of Mussolini's Fascism and the British Governments extra-ordinary responses. Two 50-minute programmes,(sub-titled),by Imageworth for Channel Four Television, on film.
THE AFRICAN FROM ABERYSTWYTH : Professor Gwyn Williams on David Ifon Jones, the Welsh socialist, his deep involvement in South African politics and who, in 1921 in Moscow, became the Comintern representative for the whole of Africa. 50-minute English and Welsh language versions by Teliesyn for S4C and the BBC, on film and tape.
- 1985 AN ISLAND BUILT ON COAL :using archive and contemporary interviews with the protagonists, a history of the British coal industry since nationalisation in 1946. 40-minute programme by Trade Films for Channel Four Television, on film and tape.
LEST WHO FORGETS? : Gwyn Williams in the Soviet Union for May Day 1985 and the 30th anniversary celebrations for the end of World War Two. 50-minute English and Welsh language versions by Teliesyn for S4C and the BBC, on film.
- 1984 CREFFTAU : a group of Welsh craftespeople working in glass, wool, stone and on paper describe their lives. Three 30-minute Welsh language versions by Wyvern TV for S4C, off-line from film.

Also, regularly working for HTV and the BBC, cutting news, sport, current affairs and documentary.

Recent Production

- 1999 Strangers on the Land (Sontel): principal artist and producer of CD-ROM prototype with Brad Miller, Adam Hinshaw, Alex Davies, Kathryn Wells and Bruno Koenig.
- 1988 CIRIA Quality Systems: produced and directed second unit shoot in Melbourne for promo by Michael Barrett Productions.
- 1986 IMAGE ConTEXT:TWO : a sequel to Image ConText:One, from the point of view of the consumer. 60-minutes on video for Bristol Film Workshop.
- 1985 THE BODY ON THREE FLOORS : a collaboration between a zoologist, a dancer, a jazz musician, a clown, a writer, an art historian and the film-maker to produce an experimental programme for television about our attitudes to play and creativeness. 50-minutes on film and videotape for South West Arts and TSW-Television South West. Screened at the 1987 Melbourne Film Festival.
- 1984 A HISTORY OF AIRPORTS : the nature of modern flight and its antecedents freely explored with writer, John Downie. 50-minutes on videotape, funded by the Gulbenkian Foundation.
- 1983 IMAGE ConTEXT:ONE :a description, framed through an historical analogy, of the material and organisational factors affecting the producer of film and video working at the fringes of the commercial film and television Industry. 50-minutes on video for Bristol Film Workshop education programme.
- 1981 VISTASOUND :an experimental film exploring the relationship of sound-to-image utilising an identical soundtrack against three very different picture versions. 45-minutes on film for Bristol Film Workshop,part funded by the Arts Council of Great Britain.
FRIDAY FRIED : four spoken narratives on sound inter-relate with four locations on picture. 15-minutes on film for Bristol Film Workshop.

Also, during this period, scripts, treatments and pilots through Bristol Film Workshop for Channel Four Television, Arts Council of Great Britain and the British Film Institute.

Education and Training

- 1993-99 University of New South Wales, College of Fine Arts; Master of Fine Art degree by research. Topic: Interactive Multimedia
- 1989-91 CSV Management Level One 5-day course; short courses in PC Support, Lotus and Paradox.
- 1968-71 Assistant film editor with BBC Television for Panorama, Softly Softly, Tomorrows World; serials, drama, light entertainment and comedy.
- 1966-68 General assistant with Rolls Royce Aero Engines Film Unit,Bristol.
- 1962-65 Regent Street Polytechnic, (now University of Westminster); Diploma in Photography with cinematography. (Selected for National Film Theatre annual graduate film screenings 1966). L.I.I.P. (Licentiate Institute of Incorporated Photographers).
- 1961-62 Croydon College of Art foundation studies.'A'level Art.
- 1957-61 Ottershaw School; 8 'O' level GCEs.

Teaching

- 1971-85 Exeter College of Art and Design, (now University of Plymouth); part-time Senior Lecturer in film, video and photography.
- 1977-78 Newcastle-on-Tyne Polytechnic Faculty of Fine Art; part-time Lecturer II in film and video.
- 1971-72 Somerset College of Art; Lecturer I, Foundation Studies.

Also, visiting lecturer and external assessor to Colleges of Art, Universities and Polytechnics throughout Britain, Europe, Australia and the USA, including; University of Western Sydney, Nepean; Canberra School of Art; Slade School, University College, London; Royal College of Art, London; University of Reading, Berkshire; Newcastle-on-Tyne Polytechnic; Newport College of Art, Gwent; Jan van Eyck Akademie, Maastricht, Holland; Alberta College of Art, Calgary, Canada; University of British Columbia, Vancouver; San Francisco State University, California. University of Kansas, Lawrence; State University of New York, Binghamton; Queens University, Ontario; Falmouth College of Art, Cornwall; St. Martin's College of Art, London; Phillip Institute of Technology, Bundorra, Melbourne; Victorian College of the Arts, Melbourne; Alexander Mackie CAE, Sydney; Sydney College of the Arts; State College, Melbourne; University of Oklahoma, Norman, Oklahoma; University of Western Sydney Nepean; Key Centre for Cultural Policy Research, Griffith University.

Previous Positions and Employers

- 1992-99 Multimedia Consultant & Database Administrator, National Association for the Visual Arts.
- 1989-92 Information Systems Manager (ADM5), Community Services Victoria, Inner Urban Region.
- 1979-89 Producer/Director and Editor, self-employed freelance, Film and Television industries.
- 1971-85 Senior Lecturer/Lecturer II, part-time; Exeter College of Art, Devon, England. Film, Video and Photography artist/film-maker.
- 1968-71 Assistant Film editor, BBC Television.
- 1966-68 General Assistant, Rolls-Royce Aero Engines Film Unit.

Community

- 1996-99 Board member, dLux Media Arts (Sydney Intermedia Network).
- 1997 Acting President, Sydney Intermedia Network.
- 1986-87 Chair, Association of Cinema and Television Technicians (ACTT), Western Regional Group and Western Freelance Shop.
- 1985-87 Member, Council of Management, Bristol Community Dance Centre.
- 1979-82 Committee member, ACTT Western Freelance Shop and National Committee for Francised Workshops.
- Director Treasurer, Bristol Film Workshop.
- 1979-80 Chair, South West Arts Film Advisory Panel.
- 1976-77 Co-ordinator, South West Independent Film-makers Tour.
- 1975-82 Founder Member, Independent Film-makers Association.
- 1972-73 Organiser, Exe Gallery exhibition programme.
- 1968-96 Founder member, London Film-makers Co-operative

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- Artmaster*, occasional journal of the Masters of Fine Art students, COFA UNSW, 1993-1995
- Benjamin, Walter 1970, *Illuminations*, edited with an Introduction by Hannah Arendt, Jonathan Cape, London.
- Boissier, Jean-Louis 1994, *Two Ways of Making a Book, working notes for Flora Pentinsularis*, artintact issue 1 book and CD-ROM, Zentrum fur Kunst und Medien (ZKM), Karlsruhe, Germany.
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- Burch, Noel 1979, *To the Distant Observer Form and Meaning in the Japanese Cinema*, Scolar Press, London.
- Conomos, John 1994, *The Work of Art in the age of Digital Reproduction*, Photofile No.44 April 1995.
- Continuum* Volume 8 Number 1 1994, Electronic Arts in Australia, ed Nicholas Zurbrugg, The Australian Journal of Media & Culture, Murdoch University, Perth, Australia.
- Critical Art Ensemble, 1994, *The Electronic Disturbance*, Autonomedia, Brooklyn, NYC.
- Critical Issues in Electronic Media*, 1995, ed Simon Penny, State University of New York Press, Albany, NY.
- Curtis, David 1971, *Experimental Film - a fifty year evolution*, Studio Vista, London.
- Directory of Electronic Arts* 1995-96, CHAOS - see under Guide International des Arts Electronique.
- Dixon, Rachel 1997, *Other Spaces - the marketing, distribution and exhibition of interactive art*, Australian Film Commission, Sydney.
- Electronic Arts in Australia*, 1994, ed. Nicholas Zurbrugg, *Continuum* V8 No1, The Australian Journal of Media & Culture, Murdoch University, Perth, Australia.

- Gauguet, Bertrand 1998, *Towards a New Economy of the Digital Work of Art?* <Compacts> oeuvres numériques sur cd-rom; Presses Universitaires de Rennes, France.
- Gidal, Peter 1989, *Materialist Film*, Routledge, London.
- Guide International des Arts Electronique* 1995-96, CHAOS Editions, Paris, and John Libbey, London.
- Harvey, Sylvia 1978, *May'68 and Film Culture*, British Film Institute, London.
- Kerckhove, Derrick de 1995, *The Skin of Culture: Investigating the New Electronic Reality*, Somerville House Publishing, Toronto, Canada.
- Leggett, Mike & Michael, Linda 1996, *Burning the Interface*<International Artists' CD-ROM> catalogue, Museum of Contemporary Art, Sydney.
- Legrice, Malcolm 1997, *Abstract Film and Beyond*, Studio Vista, London.
- Lesy, Michael 1973, *Wisconsin Death Trip*, Pantheon Books, NYC.
- Lesy, Michael 1976, *Real Life*, Pantheon Books, NYC.
- Lesy, Michael 1980, *Time Frames*, Pantheon Books, NYC.
- Mediamatic* (journal) 1985-1999, Mediamatic Publ, Amsterdam.
- Miles, Adrian 1996, *The Emperor's New Clothes*, Media International Australia No 81, AFTRS, Sydney.
- Munsterberg, Hugo 1916, *The Photoplay: a psychological study*, Appleton & Co, New York 1916, reprinted Dover Publications 1970.
- Negroponte, Nicholas 1995, *Being Digital*, Hodder & Stoughton, NSW, Australia.
- Penny, Simon 1994, *Working in Electronic Media*, Continuum V8 No1, op.cit.
- Renan, Sheldon 1967, *The Underground Film - an introduction to its development in America*, Studio Vista, London.
- Riley, Vikki 1994, *I Touch Myself: Linda Dement's electronic bodyscapes*, Photofile No.44 April 1995.
- Schama, Simon 1996, *Landscape and Memory*, Fontana Press, London.

- South West Film Directory* 1980, ed. Rod Stoneman, South West Arts, Exeter, Devon, England.
- Thinking about Exhibitions*, 1996, eds Reesa Greenberg, Bruce W Ferguson, Sandy Nairne, Routledge, London.
- Thoms, Albie 1978, *Polemics for a New Cinema - writings to stimulate new approaches to film*, Wild & Wooly, Glebe.
- Tofts, Darren 1995, *The Bairdboard Bombardment*, in 21C, Gordon + Beech, Melbourne.
- Tofts, Darren and McKeich, Murray 1998, *Memory Trade - a pre-history of cyberculture*, Interface and G+B Arts International, Sydney.
- Tyler, Parker 1969, *Underground Film - a critical history*, Secker & Warburg, London.
- Walter, Ernest 1969, *The Technique of the Film Cutting Room*, Focal Press, London.
- Wark, McKensie 1997, *The Virtual Republic*, Allen & Unwin, Sydney.
- Woolley, Benjamin 1992, *Virtual Worlds*, Penguin.
- World Art* /18, Gordon & Beech, Melbourne.
- Youngblood, Gene 1970, *Expanded Cinema*, Studio Vista, London.

Published Articles and Papers

by Mike Leggett

1999

Electronic Space and Public Space: museums, galleries and digital media, Continuum V13 No2 July 1999, ed Darren Tofts, The Australian Journal of Media & Culture, Murdoch University, Perth, Australia.

ISEA98 CD-ROM review, Leonardo Digital Reviews, MIT, Mass.

1998

A Digital Crisis, Byeline (Craft South), Adelaide.

Being Connected, RealTime /26, Sydney.

Cultural Windows, RealTime/24, Sydney.

Planet of Noise, Leonardo Digital Reviews, MIT, Mass.

Zoe Beloff and Mari Soppola CD-ROM reviews, World Art /18, Gordon & Breech, Melbourne.

1997

Respect and Indigenous Interconnectivity on the Fulbright Symposium, RealTime/21, Sydney.

Cyber Cultures & Techne exhibition review, RealTime articles/18, Sydney.

Artists' Burning Art : Contemporary International CD-ROMs, essay in catalogue of the Microwave Festival '97, Videotage, Hong Kong.

Planet of Noise CD-ROM review, Photofile No.52, Australian Centre for Photography, Sydney.

Shock in the Ear: Norie Neumark, MESH #11, experimenta, Melbourne.

Under a Federal Sun?, RealTime/20, Sydney.

Microwave catalogue essay, Videotage International Video Festival, Hong Kong.

ISEA96, ANAT Newsletter, Adelaide.

The Australian Cultural Network, NAVA Newsletter, Sydney.

1996

Digital Media and Public Spaces, Panel Session paper, Proceedings of the International Symposium of Electronic Art (Rotterdam), ISEA, Holland.

Burning the Interface<International Artists' CD-ROM> catalogue, co-ed Linda Michael, Museum of Contemporary Art, Sydney.

Burning the Interface, Artlines 1/4, Art Law Centre of Australia, Sydney.

CD-ROM - the 21st Century Bronze?, Media International Australia No.81, AFTRS, Sydney.

CD-ROM - 21st Century Bronze?, MESH Experimenta issue, experimenta, Melbourne.

Coding the Possible, /15 RealTime, Sydney.

Intractible Images ISEA95 report, MESH, experimenta, Melbourne.

Issues of Interface, Artlink winter 1996, Adelaide.

Literate Ears, RealTime/11, Sydney.

Past Presence, RealTime, Sydney.

Phobias, Fashion and Hope, /13 RealTime, Sydney.

Programming Art, Sydney Morning Herald.

CD-ROM - the 21st Century Bronze? Burning the Interface<International Artists' CD-ROM>' catalogue, MCA, Sydney.

Margaret Tait, in A Directory of British Film & Video Artists, ed David Curtis, Arts Council of England, London.

1995

CD-ROM - the 21st Century Bronze?, Proceedings of the International Symposium of Electronic Art (Montreal), ISEA, Holland.

CD-ROM Art, RealTime, Sydney.

Waxweb - photo-images Buzzing on the Wires, Photofile No.45, ACP, Sydney.
Electronic Media Art - an international guide for exhibition and distribution (editor), Australian Film Commission, Sydney.

Storm, columnist, May, June, July, August, September issues, Melbourne.

1994

Interactive - a Seminar, Art Master number 3, College of Fine Art, University of New South Wales, Sydney.

Interactive - a Conference, Artmaster issue number 4, COFA UNSW, Sydney.

Interactive - a Presentation, Artmaster issue number 5. COFA UNSW, Sydney.

1992

Found Sounds, in Essays in Sound, eds Davies, Jonson, Jokovich, Contemporary Sound Arts, Sydney.

Illustrations

- 1A. *Image ConText: One* (1979/1983): videotape, 50mins, from the introduction section : Mike Leggett.
- 1B. *Image ConText: One* (1979/1983): videotape, 50mins, from the final section : Mike Leggett.
2. *Abstract Film and Beyond*, Malcolm Legrice, 1997. (Dust jacket) The images on the front cover are from the John Whitney film *1-2-3* (1970), described by Legrice as: *'the clearest and most satisfactory work in this field (programmed artistic form) to date, the most appropriate to the computer process being the simplest: an unedited, black and white, time 'sculpture'...'.*
3. *Cyberflesh Girlmonster* (1995): image from interactive multimedia CD-ROM : Linda Dement.
4. *A Digital Rhizome* (1994): image from jewel-case cover : Brad Miller.
5. *Discobulus* : 4th Century Greek bronze figure.
"To anticipate the social impact on the present of electronically compressing time and space, is a problem - on the future, daunting. Could Guttenberg have anticipated the impact of formalising the written word using wooden blocks? Could Daguerre or Fox Talbot have predicted the social effect of organising silver salts onto metal and paper? Would Logie Baird, (the inventor of television), have given-up if he had seen a promo for Australia's Funniest Video Show? To extend the time frame further - what would Myron, the 4th Century Greek artist responsible for the Diskobulus have felt about his work being reproduced as a flat image, in colour, some 2,400 years after his death? Or indeed, having his work reproduced on paper, in colour, in a magazine circulated to thousands of people, so that one of these could then fax to me a copy of the image, to be photographed onto a slide, to be projected onto a screen, in front of us here. I wonder. How the artworks currently being made into a permanent artefact in CD-ROM form be mediated to audiences in the 44th Century, 2,400 years from now."
 From the end of the paper, *CD-ROM - the 21st Century Bronze?*, given by Mike Leggett at the Intersections'94 Conference.
6. *'...the bairdboard bombardment...'* illustration by Greg O'Connor on page 39 of 21C magazine #2 1995 of an article by the same name by Darren Tofts.
7. *A Digital Rhizome* (1994): image from interactive multimedia CD-ROM : Brad Miller.
8. *Anti-Rom* (1995) : image from interactive multimedia CD-ROM : SASS group (UK)

9. *30 Words for the City* (1995) : image from interactive multimedia CD-ROM : John Collette.
10. *ScruTiny in the Great Round* (1995) : image from interactive multimedia CD-ROM : Jim Gasperini and Tennessee Rice Dixon. (USA).
11. *Die Veteranen* (1995) : image from interactive multimedia CD-ROM : Stephen Eichorn, Tjark Ihmels, KP Ludwig John, Michael Tuma. (Germany)
12. *A Digital Rhizome*: op.cit.
13. *Flora Pentrusularis* (1994) :image from interactive multimedia CD-ROM Jean-Louis Boissier. (France)
14. *Family Files* (1997) : image from interactive multimedia CD-ROM : the image of the clockfaces is a matrix of frames that give access to the various movie file diaries - see illustration numbers 15-16.
15. *Family Files* (1997) : image from interactive multimedia CD-ROM : the next in the progression from the illustration 14 above.
16. *Family Files* (1997) : image from interactive multimedia CD-ROM : gradually the clock frames are replaced by full-screen diary images which, at their end, return to the clock faces in the sequence 14-16.
17. *Planet of Noise* (1998) : image from interactive multimedia CD-ROM : Brad Miller and Ken Wark.
18. *Planet of Noise* (1998) : image from interactive multimedia CD-ROM : Brad Miller and Ken Wark.
19. *Waxweb* (1989-95) : screen grab from Web browser image David Blair.
20. *Waxweb* (1989-95) : screen grab from Web browser image David Blair.
21. *Waxweb* (1989-95) : screen grab from Web browser image (detail) : David Blair.
22. *Waxweb* (1989-95) : screen grab from Web browser image : David Blair.
23. *Waxweb* (1989-95) : screen grab from Web browser image : David Blair.
24. *Beyond* (1997) : series of images from the interactive multimedia CD-ROM, as reproduced in a layout in World Art #18 : Zoe Beloff.
25. *Burning the Interface*<International Artists' CD-ROM> catalogue cover (1996)

26. *Espaces Interactif Europe* exhibit curated by Annick Bureau, Paris, 1996.
27. *Burning the Interface*<International Artists' CD-ROM> banner on the side of the Museum of Contemporary Art, Sydney, (1996).
28. *Burning the Interface*<International Artists' CD-ROM> exhibition gallery, the first encountered upon entering. The 'lily-pad' shape visible was used throughout the galleries and functioned as a floor-mat (to cover cabling), a desktop (on which to place the monitors), and a ceiling suspended acoustic surface (with which to absorb sound being emitted from the desktops).
29. *Burning the Interface*<International Artists' CD-ROM> stand-up, back to back monitor/computer plinth with headphone option. The grille set-in to the desktop through which sound is emitted is just visible to the right of the mouse in front of the left hand monitor. In the background on the wall are some vinyl signage, of the icons used in many interactive CD-ROMs, with explanatory texts.
30. *Burning the Interface*<International Artists' CD-ROM> exhibition gallery containing one of the double stand-up plinths in use on the right, and one of the Web connected computers on the left. In the background, the entrance to the installation space used for *Mnemonic Notations V*, (1994), by Phillip George and Ralph Weyment.
31. *Imaginary Landscape #8* (1997) : an image composited by Mike Leggett in Photoshop using an image made with an Apple 150 digital camera, one of the first digital cameras to be retailed. With this camera, images were gathered for inclusion in the two seed-funding project proposals to the AFC, including this one from a series called *Imaginary Landscapes*.
32. *Voyage de la Corvette l'Astrolabe*, Historie, Atlas 1, Plate 34, Paris 1833. Lithograph by Victor-Jean Adam, based on drawings by Louis Auguste de Sainson.
33. *Corroboree* (1888 est), is one of several drawings that are seen in *Sontel* by the artist Ulladullah Mickey, (or Willy the Cripple), and are the earliest known artworks by a South Coast Aboriginal which incorporate traditional European techniques, such as in this picture, employing pen, ink, crayon and pastel on surveyor's paper. (Organ 1990)
34. *The creek bridge* location from *Sontel* (1999), CD-ROM prototype.
35. *Crown Property - the arrow head* : from *Sontel* (1999) CD-ROM prototype.

Acknowledgments

Deborah Ely; Bonita Ely (no relation!); David Watson; Linda Michael; Louise Pether; Bernice Murphy & Leon Paroissien; Bill Seaman, Professor Liz Ashburn and those other artists and flaneurs who shared the resource of the Research Lab at the College of Fine Arts, the University of New South Wales; Michael Hill and Kate Ingham at the Australian Film Commission; the directors and staff at the venues who participated in the tour of Burning the Interface<International Artists' CD-ROM> in Adelaide, Melbourne, Perth and Brisbane; Darren Tofts; Keith Gallasch; Annemarie Jonson & Alessio Cavallaro; Shiralee Saul; John Potts & Maria Stukoff; and the many others who have encouraged, contributed to and aided with, directly and indirectly, the contents of this thesis.

It is dedicated to the countless artists who are burning their eyes out staring for long hours at the incandescent phosphor screen that conveys their joyful images and illuminating imaginations.

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