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Locative Media and Spatial Narrative

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This paper explores the debates around locative art both past and present and sets them against models drawn from a broad range of cultural artefacts, examining the potential lessons for contemporary locative media art and interactive public art practice. Specifically examined are issues of architecture and ritual space, the spatialisation of narrative, and Aboriginal Australian, Amerindian, Celtic, Hindu and Christian sacred architectures and land relationships.

Locative artworks based on digital mobile technologies are a relatively new phenomenon. Yet art practices based on site specific works and nomadic strategies are not just old, but ancient. This paper explores the debates around present locative practice and sets them against such models drawn from a wide range of cultural artefacts. The paper questions whether by rooting artistic practice in profound cultural and psychological structures, locative work can be given greater resonance.

The issue of mapping and its distortion by western colonial practice in relation to the colonised is also be examined. Examples of subjective mapping across history are related to current mapping projects using GPS and other locative techniques, researched at first hand by the author, as well as recent practices in virtual and performative space, including the Hosts project (Bath 2005), the author's own current artwork which includes both site specific and broader locative elements.

The narrative potentials of ancient architectural alignments, spatial architectural organisation and acoustic resonance are contrasted with a range of contemporary projects exploiting contemporary architectural spaces including work by Daniel Libeskind and Rafael Lozano-Hemmer. The author has researched these issues in depth for his forthcoming publication "The Mobile Audience, documented in his Weblog : <<http://www.mobileaudience.blogspot.com>>

Locative Media and Spatial Narrative

"Modernization is the process by which capitalism uproots and makes mobile that which is grounded, clears away or obliterates that which impedes circulation, and makes exchangeable what is singular."¹

New Forms

We are entering a new phase in the construction of narrative forms—an age of ubiquitous computing and wire-free communication spaces. The emergent field of locative media art explores the convergence of computer data and location using portable media. The predominant uses of mapping and spatial information necessarily lead us to a radical reassessment of the nature of representation. Now diegetic space can be mapped onto geographic location, how does this alter the modes of audience participation and reception, and can this emergent space for art and performance create new perceptions of space and place in an audience?

The political and economic shape of society ultimately decides the dominant modes of narrative. To many in the contradictory priorities of late capitalism, new mobile technologies seem to offer a unique opportunity to break the determinist “male” control of narrative vision identified by Foucault as dominating in the 19th and 20th centuries and to promote a more decentred and subtle narrative mapping. Feminist perceptions of the passivity of the female under the male gaze in artworks are now undercut by the active role of the ambulant audience, and by the intrusion of the “real” in literal terms, continually subverting of the inherent narcissism of the viewer. In many ways the active participant appears in a liminal state between worlds, whose attention moves between absorption in diegesis, the intrusive “real” and the ambient physicality of the environment.²

The concomitant of this ubiquitous transparency of location is the ability to track the audience, so a whiff of the totalitarian haunts the liberating potential of the technologies. In contradiction, the very same processes of late capitalism are simultaneously draining meaning from the real spaces of our lives. A process identified by Marc Augé as 'Supermodernity', a simultaneous culture of superfluity of places and of no place—the mall, the motorway and the airport.³

Feminist critics such as Mulvey⁴ have often raised alternative strategies to break the negatives of a culture of control.

“One of the most exciting possibilities of cyberspace is the uncontrolled, the live, the networked and multiple, and the dynamic and fleeting. For these potentials to manifest there must evolve a place for stories and worlds that are not centered on an ideology based on control. Perhaps we should create designs that give users control in an uncontrolled world as a way to break that paradigm.”⁵

Much interesting locative practice explores precisely this area. Teri Rueb's *Drift*⁶, for example ties a sound landscape to the movements of the tide on a north European beach. The audience must either give itself to the primal cycles of the sea or risk terminal confusion and data loss.

Locative artworks based on digital mobile technologies are a relatively new phenomenon. Yet art practices based on site-specific works and nomadic strategies are not just old, but ancient. Locative art by its very nature trespasses into the realm of Public Art, but by its interaction with the public transforms our notions of site-specific and ambulant practices defined over the last three decades by artists such as Richard Long, Hamish Fulton, Vito Acconci and Sophie Calle. This paper also questions whether, by similarly rooting artistic practice in profound cultural and psychological structures, locative work can gain a greater artistic resonance.

Mapping as a radical critique

Post-structuralist philosophies have revived an interest in the spatial, identifying the intimate relationship between power and knowledge, particularly in the writings of Foucault, but also in those of Virilio, Deleuze and Guattari:

"By introducing "geographical" metaphors such as site, domain, position, field, and displacement, Foucault (and to a certain extent Althusser) was able to review and re-theorise the relationship between power and knowledge" ⁷

Richard Coyne has extended Foucault's analysis to computer systems, believing them implicated in the objects and practices by which the body is rendered "docile." In a Foucaultian reading the computer is the latest means of subjugating the body through modes of bodily discipline, posture, and the dictates of good ergonomic practice. This critique becomes ever more cogent with the advent of mobile computing.⁸

The GPS mapping practice of modern psycho-geographers, (see GPS Drawing and <http://socialfiction.org>) are seemingly related to the writings of Guy Debord and his practice of the 'Derive', but seldom achieve anything identifiably subversive. "Locative media is: Psychogeography without the critique."⁹ Participants seem to have more in common with the practice of the Flaneur -the alienated outsider enjoying the frisson of other lives.

If one returns to the original Situationist critique of western culture as outlined in Debord's *Society of the Spectacle*, it is clear that most so-called psychogeographic works are embedded in a superficial love affair with technology and the map and a retreat into conceptualist formalism which has nothing to do with a subversive "détournement"¹⁰

Debord never revised his analysis of the "spectacle", further developing it into a theory of the Integrated Spectacle- the information age's bread and circuses equivalent for distraction of the masses. The "Dérive" or drift is a method for subversion, of remapping the world with 'uncontrolled' clarity. Identifying the secret flows of money and power below the surface of the city. The strategy he cites

"The production of psycho-geographic maps, or even the introduction of alterations such as more or less arbitrarily transposing maps of two different regions, can contribute to clarifying certain wanderings that express not

subordination to randomness but complete *insubordination* to habitual influences (influences generally categorized as tourism that popular drug as repugnant as sports or buying on credit). A friend recently told me that he had just wandered through the Harz region of Germany while blindly following the directions of a map of London. This sort of game is obviously only a mediocre beginning in comparison to the complete construction of architecture and urbanism that will someday be within the power of everyone" ¹¹

has been adapted in several locative works. For example Jen Southern and Jen Hamilton in *Distance Made Good* ¹², Paula Levine in *Shadows from Another Place* ¹³ and C5 in *The Other Path*.¹⁴

One of the most lauded recent locative or mobile artworks has been Blast Theory's *Uncle Roy all around you*. Members of the public play as Street Players using a handheld PDA. They have 60 minutes to 'find' Uncle Roy who sends clues, gives instructions and makes observations along the way. Street Players can also see Online Players exploring this same area of the city on the map on their handheld computer. They can send audio messages to Online Players to ask for help. The game drops Online Players into a virtual city. Street Players appear in the virtual city as black figures in a column of orange light. Other Online Players appear as white figures. It remains an uneasy mix of performance and game, with its narrative is only accessible to those who successfully complete the quest. The real and virtual sit in a schematic relationship with the environment itself, only valued as a source of directional clues and the casual bystander remains mystified and excluded.

At Futuresonic 2004, the charge levelled by European cultural critics at the work of Blast Theory was that of a complacently uncritical adoption to the mobile of the industry standard games, unwittingly acting as fashionable agents for intrusive and suspect technologies. Matt Adams rebutted this in interview, pointing to the collaborative co-dependency explored by the work. ¹⁵

Maps and subjectivity

Many exaggerated claims have been made for emergent works in the locative medium. It might be useful to start untangling the myths with this warning from Lev Manovitch:

"GPS, wireless location services, surveillance technologies, and other augmented space technologies all define data space – if not in practice than at least in their imagination - as a continuous field completely extending over and filling in all of physical space. Every point in space has a GPS coordinate which can be obtained using GPS receiver. Similarly, in the cell space paradigm every point in physical space can be said to contain some information that can be retrieved using PDA or a similar device. With surveillance, while in practice video cameras, satellites, Echelon (the set of monitoring stations which are operated by the U.S. and are used to monitoring all kinds of electronic communications globally), and other technologies so far can only reach some regions and layers of data but not others, the ultimate goal of the modern surveillance paradigm is to be able to observe every point at every time. To use the terms of Borges's famous story, all these technologies want to make the map equal to the territory." ¹⁶

There is nothing particularly surprising about this intentional trajectory of the technology: neo-liberal capitalism extends its controlling force voluntarily into every facet of our lives. Every day in the street we can see the blurring of boundaries between public and private, work-time and personal time. While the potential for monitoring and control is growing exponentially, the map can never equal the territory and Borges famous story has a cautionary warning about such hubris:

"...map of such Magnitude cumbersome, and, not without Irreverence, they abandoned it to the Rigors of sun and Rain. In the western Deserts, tattered Fragments of the Map are still to be found, Sheltering an occasional Beast or beggar; in the whole Nation, no other relic is left" ¹⁷

These issues seem to me to mark a step-change in the way technology governs our behaviour. If the real and virtual are so easily melded, with such potential for both personal freedom and conversely, institutional control, where are the responding critiques from the artists? Until recently, very few mobile works tried to find a metaphoric

critique of advancing ubiquity- one can think of Jonah Brucker-Cohen's WiFi Hog¹⁸ whose ironic intentions were even misunderstood by the wifi community at the time.

Maps are by their nature an uneasy mix of the subjective and objective. From early Ptolomeic to colonial, the map reflects the mapmaker's concerns and subjectivities. It is now well known how Mercator projections exaggerated the relative sizes of the northern colonial nations against their southern empires. The area-accurate Peter's projection still shocks by depicting the true size of the southern continents. The mental representations we carry are necessarily complex, and it seems problematic to merely map these back onto social space using locative technologies, but this has been the predominant practice of many early projects such as Locative Media workshop¹⁹ and Urban Tapestries²⁰

This is further problematised by the subjective and partial nature of mental maps, which are far removed from the continuous surface of the map:

“How can mental representations of the spatial world be characterized? The distortions in distance estimation indicate that mental representations do not directly represent space or distance, but rather represent the entities that exist in space. The distortions in direction estimation indicate that mental representations of directions are not continuous, but rather, tend toward the categorical. Together, these findings suggest that spatial elements are organized relative to each other and to a reference frame, and assimilated toward these. And together, these distortions are irreconcilable in a map-like or Euclidean representation.”²¹

But if the perception of space resides in the mind of the beholder, that perception springs from a further complexity of sources. We construct our notions of space through both the “hard wiring” of the body. The unconscious knowledge of space we carry is partially based on an invisible and forgotten sense –proprioception.²² Proprioception is the process by which the body can vary muscle contraction in immediate response to incoming information regarding external forces) and through our culturally determined “soft wiring”, such as politics or religion.

In locative media the body reassumes its primacy as measure and scale in the world. In simplest terms, the body gives us an orientation in the world through its physical structure front, back left right, up down and its relation to the force of gravity.²³

Building as Symbol

Architecture can provide an integrated and compelling model for embodied spatial narratives: one of the primary social functions of architecture is to create ritual spaces. Ritual is a kind of social form in which a designed narrative can unfold harmoniously and simultaneously within the larger context of an interactive environment, in which most of the action is improvisational. We are just beginning to understand the narrative potentials of ancient architectural alignments, religious spatial architectural organisation and their acoustic resonances. Their effects can be usefully compared with a range of contemporary projects exploiting architectural space, including work by Daniel Libeskind and Rafael Lozano-Hemmer.

To illustrate my point about embodied ritual one could point to Chartres Cathedral, which was built in France in 1235 AD. In the nave is the "Chemin de Jerusalem" (Road of Jerusalem), a pavement maze with a completely different pattern to the earlier Cretan maze or Roman mosaics.²⁴ The Christian symbolism is obvious, with the four arms of the cross replacing the pagan symbolism of the former. Pilgrims were supposed to walk the maze as a substitute for a pilgrimage to Jerusalem, or to shuffle along on their knees as a penance.

In the West up until the 18th century, architecture had preserved its ability to frame and support (ritual) actions that allowed the human subject to orientate to a suprasensory Being. In the late 18th century architects complained about a profound crisis of meaning in their discipline. Once cosmography and its mythology disappeared as socially accepted realities, the transcendent referents of architecture became problematic.

This problem of meaning remains a universal one for artists and architects alike, but Alberto Perez Gomez imagines a use of space, which revivifies the lessons of pre-enlightenment practice.

“...An architecture to reveal humanity not in time but made of time, not in space but radically embodied and existing in a thick, vivid present, between the earth and the sky, as a unique place in the universe, always subject to forces larger than ourselves that in fact make us human, call us to take measure and yet always lay beyond the reach of calculation. In order to accomplish this aim, architecture must understand itself *differently*. This is, I believe, the challenge offered by Heidegger: For architectural theory never to accept its status to be merely equivalent to applied science; for architecture never to conceive of itself as a resolution of an equation that may result in efficient “form,” regardless of the complexity or sophistication of the equation, nor to understand itself as “aesthetic object”...Two excellent examples will serve me by the way of closing: Le Corbusier’s Convent La Tourette and Daniel Libeskind’s Jewish Museum”²⁵

Daniel Libeskind’s Jewish Museum in Berlin takes the ritual narrative of architectural space to a new modern extreme. Corridors slope but appear straight; Ceilings lower from five to two metres on seemingly straight corridors, inducing a physical disorientation in the observer, which echoes the disorientation of the Jewish victims of Holocaust. Libeskind’s work is also highly symbolic: based on the broken star of David and the void left by the disappeared is echoed by a physical ‘Void’ running through the heart of the building. Cutting through the form of the Jewish Museum it forms a straight line whose impenetrability creates the central focus around which the exhibitions are organized. In order to cross from one space of the Museum to the other, the visitors traverse sixty bridges, which open into the ‘Void’ space (the embodiment of absence). Spatial narratives in new media have yet to achieve the vertiginous power of such physical narratives. The experience of such a space makes one believe Pallasmaa’s contention that:

“Architecture re-mythologizes space and gives back its pantheistic and animistic essence.”²⁶

New technology is also capable of producing powerful interactive spaces, but even sophisticated site-specific locative work can fall down over the issue of content. Rafael Lozano-Hemmer is one of the most famous exponents of interactive art in public spaces. His *Re: Positioning Fear* Graz 1997 used a web site, web cam, 3D trackers, and customised projection technology to connect a very specific instance of Austrian history

and architecture with remote and local participants. The piece was loosely based on the Cathedral's fresco "the Scourges of God", which depicts the three Medieval fears of the people of Graz: the locust plague (which destroyed the fields in 1477), the Black Death (an epidemic that fortunately never had a devastating outbreak in Graz), and the fall of the city to Turkish invaders (which never happened). Halogen lights tracked people and create sharp silhouettes regardless of position. Internet Relay Chat Web Texts are sent by the public and included in the projections. However, the texts often seem trivial, given the visual impact of the work and the nature of the "fears" being addressed.²⁷

Ancient models

We are only just discovering how sophisticated was the understanding of the relationship between space and ritual in ancient cultures, and how powerful the application of that knowledge affected an audience. Research at Neolithic sites around the UK has revealed striking similarities in their acoustic properties. Key examples still exist in Ireland and Scotland, (such as the huge passage tomb of New grange and the burial mound at Skara Brae in Orkney). These sites contain passageways leading to large circular chambers, and have a resonant frequency (at which sounds naturally echo and reverberate) of about 110hz - the frequency of the male baritone, the second lowest singing voice. Standing waves, where sounds are reflected off walls and superimposed on to one another, have been observed in these and other sites and evidence suggests that the ancient architects realigned stones to create these effects. These frequencies have also been found to induce a state of trance. Archaeologists have suggested that chanting, singing and drumming at these sites would have produced reverberating echoes that might have been interpreted as voices of spirits or gods; they may also have induced physiological and psychological changes in people, adding to their potency as sites of spiritual importance.²⁸

Evidence of seasonal alignment and geometries is also common around the world in the organisation of space by earlier societies, for example in New Mexico the solar and lunar cosmology encoded in Chacoan architecture - through the buildings' orientations, internal geometry, and geographic relationships - unified the Chacoan people with each other and with the cosmos.²⁹

Richard Long revived the experience of landscape as a walked territory, where the forms created echo those of primitive cultures. Western humanity is so far from these concerns, that it seems impossible to envision an ambulant practice that could revivify our primal relation with the land. The GPS drawing project³⁰ simultaneously combines the idea of mapping and walking. One example tracks around the bronze-age *White horse of Uffington*, but ancient land motifs such as this or the *Honey lines of Nasca* were created (like Hindu temple geometries) as a sacred map observable only by the gods, these new landscape drawings seem purely formalistic and based on conceptualist aesthetics.

A Landscape of narrative

Bob Hughes, author of *Dust and Magic* has postulated landscape as a model for new media narratives with each track or journey mapping an individual trajectory through a story space:

“To propose that the path is the narrative is like proposing that the Pyg track is Snowdon, or the Pennine Way is England. Each path is chiefly a route through a particular terrain - and the terrain is the main thing... If that analogy is any good, then the way to create computer narratives is to define the features of the landscape to be explored, and let those define the path.”³¹

Where Cinema appears to be essentially fragmentary and episodic, much of its invented language was concerned with the process of reintegrating disparate elements, spaces and timescales to create a perception of meaning in the audience. Mobile media offers the coherent three-dimensional flow of space along a path, but with the addition of augmented reality, allows a melding together of two very different modes of narrative.

Locative Media Narratives

There are contemporary locative narratives resonant with the reinforcement of site and story? One can think of *Riot*³² from Mobile Bristol and *34n118w*³³, but these tend to deal with an historical past rather than the lived present. Interactive public art has been with

us for over 20 years, and some ambitious examples used locative and mobile media in integrated ways, illustrating multiple approaches to narrative in located spaces. Many of such projects are technically marvellous, but still often fell down on the actual content. Part of the problem is that of the change from considered diegesis to continuous and automatic present, with the user creating the narratives both as subject and object, perhaps a new form of 'pan-cinema':

Paul Virilio uses the example of Michel Klier, and his film *Der Riese* (the Giant) in materialising the change of the function of the cameraman in the film. The film is a montage of images that are recorded by automatic surveillance camera in German cities, and their major public places. Through this example, we come to reclaim the "end of art", this time by Klier himself, who claims this video to be 'the end and the recapitulation' of his art. This is according to Virilio, because the visual subject has transferred to a technical effect, which forms a sort pancinema, which turns our most ordinary acts into movie action, into new visual material. This means a culmination of the progress of representational technologies, of their military, scientific and investigative instrumentalisation over the centuries.³⁴

In 34n118w artists Jeremy Haight, Jeff Knowlton and Naomi Spellman used locative media to "read" a space with GPS and other wireless technology, examining the many layers of city spaces. Marking narrative triggers through locative media, they draw multiple lines from archaeology, fiction, architecture, and design across the urban terrain. Their artwork uses GPS data and an interactive map that triggers live data through movement in downtown LA. The project simultaneously utilises technology and the physical navigation of a city to forge a new construct. To quote Haight,

"The narrative is embedded in the city itself as well as the (in way the) city is read. The story world becomes one of juxtaposition, of overlap, of layers appearing and falling away. Place becomes a multitiered and malleable concept beyond that of setting and detail, to establish a fictive place, a narrative world. The effect is a text and sound based virtual reality, a non-passive movement, a being in two places at once with eyes open."³⁵

Mobile Bristol: Riot 2004 depicted the Bristol Riots of 1831 when the Political Reform Bill had been defeated in Parliament and the vote denied once more to ordinary people. Those people rose up and thousands of them filled Queen Square in the heart of the city to vent their fury. You can hear the rioters' voices as they plunder the surrounding buildings, the flames as buildings burn, the merchants as they flee for their lives and the Dragoon Guards as they saber-charge through the crowds cutting the rioters down in their hundreds. Armed only with a handheld computer and a pair of headphones, anyone connected to the GPS wireless kit could move around an "interactive sound theatre" in the historic square. Different events happened in different cells, and these are triggered by people's movements. As well as a new form of experimental art, the first GPS radio drama-this project is one of the projects of Mobile Bristol.³⁶ In contrast to the various heritage trails in the region, this was an immersive and powerful experience, with an engagement with the immediate spaces of history

Physical Space and Diegetic Space: Audience perceptions

The main direction of my own recent work has been in examining the nature of both the atirical and site specific installation spaces where poetry can be re-imagined as a part of a hypertextual universe. In pursuing this direction I have been attempting to synthesise aspects of cinema, video art and more primitive and associative spaces, to create a narrative form solidly spatialised in a physical environment, rather than mapping onto a virtual one.

My *Understanding Echo*³⁷ installation was an attempt to root interactive narrative in a magical space corresponding to part of the audience's 'collective unconscious' where "memory, dreams and reflections" could rise to the surface. Language played a central role, one indexed directly onto a physical space.

In the central pool was the image of a woman's face, submerged below the surface. From time to time she rose from the depths and talked slowly in short poetic fragments or aphorisms. The audience may not have realised it immediately, but the form of these spoken fragments became ever more personal as they approached the pool. The large changing digital montage projections around the pool represented combinations of memory. The figure rising from the waters loosely corresponded to the nymph Echo, in myth forced to forever repeat the last lines of her lover Narcissus's speeches. The woman

is by turns embittered, flirtatious and coquettish, disillusioned and enthusiastic: ignoring the audience one minute; hectoring them the next. Her character moves through a wide emotional range, returning obsessively to her situation and the unhappy love affair, which caused it. The woman inhabits the present, but lives only in the past. She projects her loves and fears onto the audience. We are immersed in her longings and become her blank screen: the spatialised narrative and the poetic monologues were fused together in the environment of the piece. Once an audience entered the installation room, they became part of the diegetic space of the narrative and were continually addressed directly or obliquely by the character of Echo. The precise sequencing or order of the fragments became irrelevant. There is no linear temporal curve involved. The more a visitor interacts, the more intimate the knowledge they gain of Echo's character.

This process was extended in *Triple Echo* 2003³⁸ where the sound flow tracked seamlessly from screen to screen with the moving interactor, and culminated in *Hosts* 2006³⁹, a mixed site-specific and locative work both for Bath Abbey and the City of Bath, similarly using "sticky video", where through audience sensor technology, video characters track individuals across space through a succession of screens, reacting to an individual's movement and attention. An audio landscape of a capella voices accompanied the visitor between screens. By standing in front of a screen for a short time the participant triggered a video 'host' who addressed the chosen individual with a series of aphorisms.

In a second phase of the project, using GPS locative technologies, aphorisms sent in by the public via a website, are edited and wrapped onto 3D head "meshes" which are then rendered animated, lip-synched and mapped back onto the city to spontaneously emerge on mobiles at various locations. These can be collected into flocks by individual participants and displayed on public screens.

The piece is a reflection on human life and death, history and absence. The "Hosts" may be taken to represent a variety of presences from the angelic to the historic. It is an attempt to map an invisible co-present onto a city in a meaningful way.

Conclusion

The emergent field of locative media art explores the convergence of computer data

and physical location using portable media. I have argued that convergence should necessarily lead us to a radical reassessment of the nature of representation through the embodied form of the experience. It also seems to me that physically experienced locative art reveals a medium where the auditory can finally stand on an equal footing with the visual⁴⁰ and where magnified artistic resonance can be achieved through a deeper knowledge of spatial grammars.

Whereas the history of cinema is one of the development of a visual language of increasing subtlety and expression, Locative Art is in its infancy and has yet to deliver work of comparable range and depth. It is too early to define as an artistic medium, but geographical space as extension of narrative is a concept as relevant to architects as it is to cultural theorists, filmmakers or media artists, It seems an essential first step in understanding the potential of a medium where the audience appears to act as a liminal persona to analyse how earlier cultural artefacts have successfully embodied meaningful social and cultural transitions through the spatial.

¹ Crary, Jonathan, *Techniques of the observer: on vision and modernity in the nineteenth century* (Cambridge: The MIT Press, 1990), p.10.

² "Prophets and artists tend to be liminal and marginal people, "edgemen," who strive with a passionate sincerity to rid themselves of the clichés associated with status incumbency and role-playing and to enter into vital relations with other men in fact or imagination." <<http://www.coas.drexel.edu/humanities/faculty/thury/Turner2.html>>2004

³ Augé, Marc, *Non-Places: Introduction to an anthropology of supermodernity*, Verso, 1995

⁴ See Mulvey, L 'Afterthoughts on "Visual Pleasure and Narrative Cinema" Inspired by King Vidor's *Duel in the Sun* (1946)' in *Framework*, 15-16-17, summer 1981, pp 12 – 15

⁵ Mary Flanagan, *Navigating the narrative in space: gender and spatiality in virtual worlds*, Art Journal, (Fall 2000)

⁶ Teri Rueb, *Drift* (April 2004) part of *Ohne Schnur* curated by Cuxhaven Kunstverein- the installation covered a 2 km x 2 km region on the Wadden sea that is filled with areas of interactive sound. The piece creates a space of flows consisting of sounds and words that travel like particles on simulated air and water currents loosely based on actual oceanographic and meteorological data. <<http://www.terirueb.net/drift/>>
http://www.kunstverein-cuxhaven.de/ohne_schnur/englisch/index2.htm 2005

⁷ Michelis, Angelica "The Woman in the Red Dress: Gender, Space, and Reading" *Modernism/modernity* - Volume 10, Number 1, The Johns Hopkins University Press (January 2003) pp. 210-11 :

⁸ Coyne, Richard. *Designing Information Technology in the Postmodern Age: From Method to Metaphor*. Cambridge, MA: MIT Press, (1995)

⁹ Saul Albert <www.twentiethcentury.com> (message dated Tue Apr 27 2004)

"Locative media is: Psychogeography without the critique.

Algorithmic psychogeography, the term used by <http://socialfiction.org> to describe their rule-based derives through the city, is not just a development, but actually a fundamental reversal of the critical use of this Situationist tool."

¹⁰ Guy Debord, *Society of the Spectacle*, Detroit 1977, translated by Black and Red, original text published as "La societie du spectacle", (1969) Paris.

¹¹ Guy Debord, Introduction to a Critique of Urban Geography, Published in *Les Lèvres Nues* #6, 1955

¹² Jen Southern and Jen Hamilton "Unfeasible Symmetry" Artists Newsletter Magazine (October 2003) article on Distance Made Good shown at The Gallery, Stratford-upon-Avon, UK. July 2002 <<http://www.theportable.tv/dmg/index.html>>

¹³Paula Levine, *Shadows from Another Place* (2003)

Levine builds upon this link, creating Hybrid space between Baghdad and San Francisco composed of the transposition of Baghdad and San Francisco. A mapping of the first US attack on Baghdad is superimposed upon San Francisco. The longitude and latitude of each bombsite is marked in San Francisco using a GPS device.

¹⁴ C5: The Other Path (April 2004) <<http://www.c5corp.com/projects/otherpath/index.shtml>>

In April of 2004, C5 set out on a month long Great Wall trek, starting in the northwest desert of China and following the Wall eastward to where it runs to the edge of the Yellow Sea. GPS data collected during this trek is being used to develop a pattern matching search procedure for locating the most similar data model in the most similar terrain in California.

¹⁵ Interview with Martin Rieser for "Mobile Audience" (January 2005)

¹⁶ Lev Manovitch, *The Poetics of Augmented Space: Learning from Prada* <http://www.manovich.net/DPCS/augmented_space.doc>(2003)

¹⁷ Jorge Luis Borges, Trans A. Hurley, "Of exactitude in science" in *A Universal History of Infamy*, in *Collected Fictions*, Penguin (1999)

¹⁸ Brucker-Cohen, Jonah, *Wifi-Hog: From Reaction to Realization* <<http://locative.net>>

(2003) "In 2003, I began working on a project called "Wifi-Hog" that was a direct reaction to the claim of ownership that corporations and individuals were placing on public wireless space. The project consisted of a laptop connected to a Portable Video Jammer (PVJ), and some custom circuitry that communicates to software on computer. The software was comprised of a packet sniffer (such as Carnivore) and wireless stumbler (such as NetStumbler which allows the software to find open networks) which monitors incoming packets from an open node. The idea was to only allow traffic originating from the Wifi-Hogger's IP address to access network, otherwise the PVJ is switched on, blocking others from connecting to the open node"

¹⁹ Locative Media Workshop: The international workshop entitled "Locative media" focusing on GPS, mapping and positioning technologies took place from July 16 - 26, 2003 at the K@2 Culture and Information Centre on an abandoned military installation in Liepaja on the coast of the Baltic Sea <<http://locative.x-i.net/>>

²⁰ Urban Tapestries <<http://urbantapestries.net/>> Proboscis: Urban Tapestries (2002-4) The Urban Tapestries software platform allows people to author their own virtual annotations of the city, enabling a community's collective memory to grow organically, allowing ordinary citizens to embed social knowledge in the new wireless landscape of the city.

²¹ Barbara Tversky, Joseph Kim, Andrew Cohen, *Mental Models of Spatial Relations and Transformations from Language*, Stanford University/ Indiana University
<<http://www.psych.stanford.edu/~bt/space/papers/tverskykimcohen99.doc.pdf>. >(1999)

²² I came across this description in *Weird Medical Conditions*, a web discussion board Registered: Jan 2002 Location: UK Posts: 12233

“...Anyways, I once watched this documentary about this guy that had no proprioception.

“What’s proprioception?” (Sic) I hear some of you say. Well it’s the ability of your brain to actually know where your body is. It means you can do things like walk, like pick up a bottle and drink from it, take a piss, and do all those things that you really don’t ‘think’ about doing anymore. Walking is the best example. The fact that you just know, without thinking, that to put one foot in front of the other in motion will make you walk. Your proprioception means that you can walk down the street and think about other things rather than wasting your time thinking about walking. This is the lower level, non-conscious and biological part of living organisms. The brain’s own biological knowledge of its make up (i.e. body) that it exists. This is not something that self-awareness and conscious usually knows about, it’s something that just ‘is’ in all living organism, it’s the biological mechanism of the body and brain together.

So there was this guy, a butcher, in the UK who one day wakes up and couldn’t get out of bed. He just couldn’t move. They called an ambulance and he was taken to hospital and they couldn’t find anything wrong with him physically. He was, as far as they could see, a perfect healthy human being, but for some reason he just couldn’t move.

It was only after they started examining his brain activity that they noticed a problem. They do all that CAT scan stuff and other electrode on the head monitoring type shit, and came to the conclusion that he had lost his proprioception somehow. His brain simply did not know that his body was there anymore”

²³ See Paul Rodaway, *Sensuous Geographies: Body Sense and Place*, Routledge, London and New York 1994

²⁴ Lonegren, Sig, *Labyrinths-Ancient Myths and modern uses*, Gothic Image Publications 1991

²⁵ Eystein Wilhelm Ruyter AN INTERVIEW WITH JUHANI PALLASMAA : student architecture paper Issue 3 - (March 1999) <<http://org.ntnu.no/a/mar99/juhani.html>>

²⁶ Juhani Pallasmaa, *The Architecture of Image: Existential Space in Cinema*, Rakennustieto Oy, Helsinki (2000)

²⁷ Re:Positioning Fear featured during the third international Film and Art Biennale in Graz, Austria, a Relational Architecture piece transformed the courtyard façade of one of Europe's largest military arsenals, the 350 year old Landeszeughaus. featured during the third international Film + Arc Biennale in Graz, Austria, a Relational Architecture piece transformed the courtyard façade of one of Europe's largest military arsenals, the 350 year old Landeszeughaus.

²⁸ Newgrange Burial chamber reveals haunting sound of past, Sunday Times, Irish Edition, (15th July 2001) see also <<http://www.orkneyjar.com/history/tombs/tombacoustics.htm>>

²⁹ Sofaer, Anna, The Primary Architecture of the Chacoan Culture: A Cosmological Expression in Anasazi Architecture and American Design, edited by Baker H. Morrow and V. B. Price, Albuquerque, NM: University of New Mexico Press (1997)

³⁰ GPS Drawing White Horse Hill Uffington, Oxfordshire, UK. 18/09/01 Jeremy Wood, Hugh Pryor. The stylised horse is the oldest of all the British chalk figures. Archaeological surveys have suggested that it dates back 3000 years to the late Bronze or Early Iron Ages.

³¹ Hughes, Bob Narrative as landscape. <<http://www.bobhughes.demon.co.uk/NasL.html>> (2004)

³³ Liz Crow and Ralph Hoyte collaborated with Mobile Bristol to depict the Bristol Riots of 1831 in a new form of experimental art, the first GPS radio drama was an immersive and powerful experience, with an engagement with the immediate spaces of history. Riot was performed in Queen's Square in Bristol in May 2004.

³³ 34 north 118 west premiered November 15, 2002 at the Art in Motion Festival <http://www.xcp.bfn.org/highlight.html> 34n118w deals with a different historical hinterland in LA to that of Riot in Bristol, but adopts similar methods.

³⁴ Dr. Kia Lindroos, Non-Linear Narrative As a Form of Political Action: Viewing Chris Marker's Film Sans Soleil (2002) <www.essex.ac.uk/ecpr/events/jointsessions/paperarchive/mannheim/w22/lindroos.pdf>

³⁵ "the narrative is embedded in the city itself as well as the (in way the) city is read. The story world becomes one of juxtaposition, of overlap, of layers appearing and falling away. Place becomes a multi-tiered and malleable concept beyond that of setting and detail, to establish a fictive place, a narrative world. The effect is a text and sound based virtual reality, a non-passive movement, a being in two places at once with eyes open."

Jeremy Hight, Narrative Archaeology Streetnotes (Summer 2003)

³⁶ Mobile Bristol is a professionally co-ordinated team of business and academic researchers from Hewlett Packard, Bristol University, UWE and digital product experts The Appliance Studio. <http://www.mobilebristol.co.uk/QueenSq.html> (Summer 2005)

³⁷ Martin Rieser, Understanding Echo, DA2 Commission, shown at Cheltenham Festival of Literature 2000, Watershed Media Centre, Bristol and ISEA2002 in Nagoya, Japan 2002 <http://www.sof.org.uk/artists/martin_home.htm><<http://vision.mdg.human.nagoya-u.ac.jp/isea/program/E/artists/a137.html>><<http://www.da2.org.uk/projects/echo.htm>>

³⁸ Martin Rieser: Triple Echo (2003), research pilot, using a contemporary triple screen exploration of the Orpheus Legend, funded by the AHRB

³⁹ Rieser, Martin: Hosts was funded by the AHRB and was shown in Bath Abbey (February 2006) <<http://www.martinrieser.com/Hosts.html>>

⁴⁰ Cubitt, Sean, Digital Aesthetics Sage (1998) p116-7

" Any relation to screen will require that the audience be mobilised... Sound enters space not to imitate sculpture or architecture, but, through electronic webs, to weave a geographic art that understands too that the passage of time is the matter of history: a diasporan art."

Martin Rieser Short Biography

Educated initially in English Literature at Bristol University and subsequently in Fine Art at Goldsmiths College and Atelier 17, Paris.

1988 exhibited at the First International Society of Electronic Artists (FISEA) conference held in Utrecht

1989 curated the first International survey exhibition of Digital Printmaking: The Electronic Print at the Arnolfini in Bristol. He was also a consultant in the Art and Computers exhibition in Computer Art held in Cleveland that year. He also has experience of curation and judging through number of other international exhibitions in electronic art, including The Electronic Eye-European Media art at Watershed in 1986. Arcade 2- Digital print 1997, Arcade 3 installation 2000

1990 created an interactive exhibition utilising giant digital panels and interactive sound installations composed by Edward Williams with an accompanying multimedia program on the theme of The Electronic Forest. This was one of the first such installations of its type and prototyped the connection of such exhibitions to the internet.

1993 devised and directed the Media Myth and Mania section of the joint Watershed/Artec exhibition and CD publication From Silver to Silicon. The latter piece has been shown at many venues around the world including Milia in Cannes; Paris; ICA and the Photographer's Gallery, London and at ISEA Montreal.

1995 Watershed/Cambridge Darkroom residency which involved constructing a self-curating web site and multimedia piece called Screening the Virus, based around publicly submitted artwork on HIV/Aids related themes. This was later short listed for a Wellcome Trust Sci-Art award.

1996 Other visual research projects included: the

direction of a collaboration involving five other artists (collectively known as Ship of Fools) using the subject of mythologies to explore the full range of narrative and visual interfaces in interactive media in a piece called Labyrinth. This work involved drama, digital image, virtual environments, and interactive video at F-Stop Gallery in Bath and as part of the Cheltenham Festival of Literature. It has been previewed at a number of other venues including the Oberhausen Short Film festival in Germany and at ISEA in Montreal.

1997 helped to make a successful lottery bid to fund a national digital arts initiative Imag@nation now transformed into DA2: a major arts initiative promoting digital art practice nationally, and internationally.

1999 Understanding Echo, funded by the DA2 Open Commission. An interactive video drama, altered by human presence, it was shown at the Cheltenham Festival of Literature, Watershed, Bristol and at ISEA2002 in Nagoya Japan.

2001 research project Triple Echo won an AHRB award and involves a three screen interactive video depicting a love triangle based on the Orpheus legend.

2001 Co-edited: New Screen Media: Cinema/ Art/Narrative (BFI/ZKM, 2002)- which combines a DVD of current research and practice in this area together with critical essays. Published extensively in various journals such as Convergence and Leonardo and in ISEA conference proceedings.

2003 Shortlisted for TRACE new media writing fellowship and Clark's digital Bursary

2004 Awarded ACE United Artist's Senior Research Fellowship and Residency at Coventry University

2004-5 Awarded AHRB research leave for a year to write a book on Locative Art "The Mobile Audience" and to create a new interactive work Hosts.

2006 Hosts exhibited at Bath Abbey

He is currently employed by Bath Spa University College at Bath School of Art and Design as Professor of Digital Arts, was Principal Lecturer in Digital Media at Napier University in Edinburgh at

the Department of Photography, Film, and Television
1997-2000. in post as Senior Lecturer in Electronic
Media at UWE Bristol between 1986 -1998 He set up
one of the first post-graduate courses in the UK
in Digital Art and Imaging at the City of London
Polytechnic 1980-85