INFORMAL MUSIC APP...

IMAGING ECOLOGIES PANEL: ISEA2012

Imaging Ecologies Panel:

ISEA2012

http://www.isea2012.org/

Thursday 20/09/12.

Harwood Art Center

Albuquerque

New Mexico

Panellists: Mike Phillips, Jill Scott, Chris Speed, Paul Thomas

ISEA2012 Albuquerque: Machine Wilderness is a symposium and series of events
exploring the discourse of global proportions on the subject of art, technology and nature. The ISEA symposium is held every year in a different
location around the world, and has a 30-year history of significant acclaim Albuquerque is the first host city in the U.S. in six years.

The ISEA2012 symposium will consist of a conference September 19 – 24, 2012 based in Albuquerque with outreach days along the state's "Cultural
Corridor" in Santa Fe and Taos, and an expansive, regional collaboration throughout the fall of 2012, including art exhibitions, public events,
performances and educational activities. This project will bring together a wealth of leading creative minds from around the globe, and engage the local
community through in-depth partnerships.

Key words: transdisciplinary, visualization, sonification, FullDome, Data, body, landscape, mobile apps.

Panel Abstract:

The panel describes a range of transdisciplinary strategies and projects for the
visualisation and sonification of complex ecologies through a variety of forms (such as
mobile apps, FullDome environments or urban screens) to manifest information
harvested from the environment – from bodies in landscapes to the body as
landscape.

Format:

The panel consists a series of presentations and demonstrations from the panellists. It
is anticipated that this could be centred around the Digital Dome @ IAIA as many of the
projects already exist in fulldome format or have been produced using engines that
can be rendered out in a fulldome format (such as Omnity plugin for Unity 3D).
However, the presentations and demonstrations could also be delivered in a standard
lecture theatre format.

The trajectory of the manifestations presented can be mapped through transcalar
shifts, from the nano to the microscopic and the personal to the geographical. It would
be possible to play out these shifts within the workshop environment through the use
of the various technologies involved in each project.

Projects being dissected include:

- The manifestation of Atomic Force Microscope data measuring the nano
  landscape revisioned through the use of game engines. This work can be
  presented demonstrated through the realtime projection of this interactive
  artwork.
- The use of collaborative gps mapping systems through mobile phone apps and
  the visualisation of data generated through human interaction with the
  landscape/urban environment.
- The manifestation of biological landscapes inspired by Scanning Electron
  Microscopy images to generate interactive cellular and molecular tissue
  models.
- The use of mesh sensor networked devices to map the environment in
  realtime, and the production of fulldome visualisations of this dynamic data.

The panel will be of interest to an audience made up of creative producers interested
in the use of game engines, sensors, mobile apps and fulldome production tools.
However, the applied, practical and experiential nature of the workshop would interest
an audience motivated to explore the use of open technologies for imaging the world.

Abstract:

The Imaging Ecologies panel embraces the central theme of ISEA2012: 'Machine Wilderness'. Here the Machine Wilderness is interrogated through the use of a range of instruments that explore the transcalar shifts from nano to the geographical.

The panel explores a number of transdisciplinary strategies and projects that have visualised and sonified complex ecologies – from bodies in landscapes to the body as landscape. The instruments used to harvest and manifest this ecological information are examined and deconstructed through pragmatic demonstrations, whilst the theoretical context and methodological frameworks employed by the panellists provide a critical substrate.

The instruments for harvesting information from the complex ecologies of molecular landscapes, the body (skin and tissue) and rural/urban geographies include: Atomic Force Microscopes, Scanning Electron Microscopes, intimate and remote sensors and mobile phones.

The manifestation of this harvested data is revealed through technologies that include: game engines, Fulldome visualisations, interactive installations and mobile phone apps.

The panel will explore the tensions that exist in transdisciplinary interactions, the trauma and transgressions that pit the 'instrumentalists' that measure a clean world uncorrupted by human hands against the 'humanists' who experience the world through 'dirty' unmediated experience.

The emergence of digital imaging technologies that provide access to the photon from the edge of the universe and the atomic force that binds molecules offer us a whole new vocabulary for articulating the world. These instruments open up new vistas, as more dimensions are unveiled, more realities are modelled and more truths envisioned. There are more things in heaven and earth than currently understood in our media philosophy. By presenting new perspectives through the lens of these digital frameworks and associated creative strategies the panel will explore things that lie outside of the normal frames of reference – things so far away, so close, so massive, so small and so ad infinitum.

Presentations:

An Ecoid in a Bush is Worth…

Mike Phillips:

i-DAT is developing a range of 'Operating Systems' to dynamically manifest 'data' as experience in order to enhance perspectives on a complex world. The Operating Systems project explores data as an abstract and invisible material that generates a dynamic mirror image of our biological, ecological and social activities. Eco-OS explores ecologies. Eco-OS further develops the sensor model embedded in the Arch-OS system through the manufacture and distribution of networked environmental sensor devices. Eco-OS provides a new networked architecture for internal and external environments. Networked and location aware data gathered from within an environment can be transmitted within the system or to the Eco-OS server for processing.

Eco-OS collects data from an environment through the network of ecoids and provides the public, artists, engineers and scientists with a real time model of the environment. Eco-OS provides a range of networked environmental sensors (ecoids) for rural, urban, work and domestic environments. They extend the concept developed through the Arch-OS and i-500 projects by implementing specific sensors that transmit data to the Operating Systems Core Database. The Eco-OS project explores the manifestation of real time environmental data (displaying heat, light, humidity and movement, and the aggregated data through dynamic comparisons) harvested from the environment through remote sensor networks of 'ecoids'. The dynamic display of data is facilitated through a FullDome corrected game engine. Eco-OS has been used to deliver the Confluence in the North Devon Biosphere from 10/11-07/12 (**http://confluence-project.org/**).

Figure 2: An ecoid in a bush…

Dermaland: The search for analogies by using 3D interactive models

Jill Scott

Dermaland was originally designed for a dome format, to raise public awareness about skin damage, by making an analogy-the care of our skin with the care of our environment. It was inspired by research into embodiment in Artificial Intelligence and Dermatology about the environmental effects of UV rays upon the cellular layers of our human skin and on the moisture levels in the soil of the earth. The whole surface of Dermaland is inspired by SEM images of all the dermal and epidermal layers in actual human skin specimens right down to the collagen fibres and the capillaries. The shape of the skin model however, is based on a Google landscape map of the fragile ecosystem of the South Alligator River in Kakadu National Park (North Australia). The side effects of unusually intensive sun irradiation already threaten this landscape and the parasites that live on it. In this paper I present a three dimensional prototype, wherein projected film loops of different colours appear to change this real landscape back into human skin. Scientific evidence about Ultra Violet damage from the sun is presented by an overhead projector that projects round images onto the top of this landscape. The dermatologists and the ecologies are worried that due to global warming, the effects of increased UVA and UVB light on these two skins: the human skin and the earth are becoming worse, particularly in in places like the mountains in Switzerland and in the north of Australia. Viewers can interact with these projections by using two magnifying glasses, which can move the projections around, and so reveal the actual effects of UV irradiation damage on the cellular/molecular level and on leaf, plant and soil structures. Two (AI) robots wander around these human and the earth landscapes; their movements are based on Dust mites (that eat human skin) and Weevils (that eat dead plant matter). The projections on backs of the robots add to the drama, as they appear to creep around and nourish themselves on the dead soil and skin cells beneath them. Dermaland, both the working model and the final dome version attempt to be a wake-up-call for viewers about the state of the planet
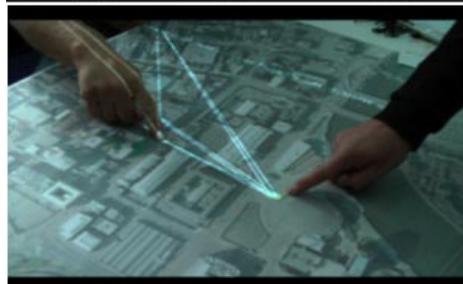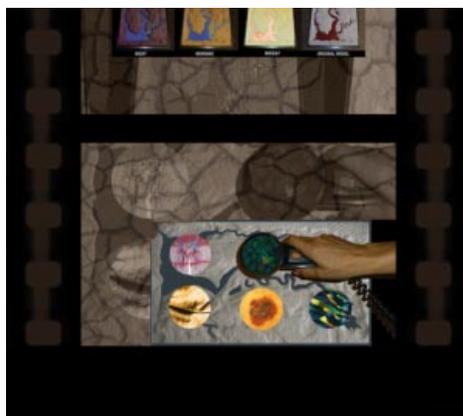
because "evolution is a tightly coupled dance, with life and the material environment as partners" (James Lovelock)

Figure 3: Dermaland: Jill Scott: Kulturama Science Museum. Zurich. Switzerland. 2012.

Comob:

Chris Speed

Comob is a method of social and spatial mapping. This free software for the iPhone allows groups of people to see each other's movements represented on screen as circular nodes with lines linking their individual positions (fig 4.). This data is also sent live to visualisation software that allows observers to see their movement at a distance. Previous GPS applications have mapped and tracked individuals as though they were disconnected points and tracks, however *comob* proposes that those individual tracks are only part of how we move through space. Use of public space is a social activity, one that we do in relation to other people. *Comob* allows for observation of how movement through space is a social activity, and proposes that those movements can be used to map relationships to space.

Since 2009, including ISEA in 2010, the project team have been using Comob in workshop contexts to explore its potential to reconcile social networks that appear on a digital map, with being in the space at the same time. During the workshops it became clear that many different methods of mapping and walking were possible. The workshops featured two types of participation: those out in the street with mobile phones, and those back at base who viewed the street participants movements projected onto map.

Street participants would begin with a very specific idea of what they wanted to map, e.g. the visual pollution of branding, or litter, conceived of as categories before the walk began. These fixed ideas quickly became modified as the walks evolved and the original idea was explored in the actual conditions. The second team viewed the progress of the walkers as circles of light projected onto a GIS map (Fig 5). Annotating the map as they went, this group attempted to record the movements of the walkers (Fig 6). On their return the observations of both groups were discussed and drawn onto the map in an attempt to articulate the experience of 'feeling their way' through the environment in order to detect pollution was translated onto the fixed projection of the map. This relation of the ground to the map allowed for a discussion of the negotiations between the city and pollution as an assumption, and as a walked actuality, and a negotiation between the differing interpretations of participants with the 'view from nowhere', i.e. the map projection, and the 'view from somewhere', on the ground.

Figure 4: Screen Shot from Comob Net iPhone application allowing groups of people to see each others movements and link their individual positions. Developed by J.Ehnes, H.Ekeus for C. Lowry, W. Mackaness, J. Southern, C. Speed & M. Wright. ©2009

Figure 5: Image of participants following the movement of people in the street projected on to a base map. ©2009 J. Southern

Figure 6: Annotations on the base map that attempt to record the movements of the street participants ©2009 J. Southern

Paul Thomas

The presentation will explore the manifestation of the molecular worlds through interactive audio visual installations. Projects discussed include Atomism and Nanoessence. Atomism is a collaborative Installation with Kevin Raxworthy that investigates silver, the mirror, and quantum theories of light. Richard Feynman in his 1979 lectures tells that light hits a mirror at all points not just at the point of reflection. All points on the surface of the mirror receive and reflect light based on the spin of the photon which is not visible to the viewer. Atomism explores what happens to the reflected image along the surface of the mirror making what is invisible visible. The Nanoessence installation aims to examine life at a sub cellular level, re-examining space and scale within the human context. A single HaCat skin cell is analysed with an Atomic Force Microscope (AFM) to explore comparisons between, life and death at a nano level. The humanistic discourse concerning life is now being challenged by nanotechnological research that brings into question the concepts of what constitutes living. The Nanoessence project installation is based on data gathered as part of a residency at SymbioticA, Centre of Excellence in Biological Arts, University of Western Australia and the Nanochemistry Research Institute, (NRI) Curtin University of Technology.

Figure 7: Installation Atomism: Quantum's mirror, John Curtin Gallery 2011 in collaboration with Kevin Raxworthy.

Biographical Data:

Panelists:

Mike Phillips, Jill Scott, Chris Speed, Paul Thomas

Professor Mike Phillips

Mike Phillips is Professor of Interdisciplinary Arts, University of Plymouth, School of Arts & Media, Faculty of Arts. He is the Director of Research at i-DAT, an Arts Council England National Portfolio Organisation and a Principal Supervisor for the Planetary Collegium. His R&D orbits digital architectures and transmedia publishing, and is manifest in a series of 'Operating Systems' to dynamically manifest 'data' as experience in order to enhance

perspectives on a complex world. The Operating Systems project explores data as an abstract and invisible material that generates a dynamic mirror image of our biological, ecological and social activities. He manages the FulDome Immersive Vision Theatre (IVT), a transdisciplinary instrument for the manifestation of material, immaterial and imaginary worlds. The IVT is being used for a range of activities, from cross disciplinary teaching to cutting edge research in modelling and visualisation. Through the IVT i-DAT is developing a FullDome transdisciplinary residency and commissioning programme. These projects and other work can be found on the i-DAT web site at: www.i-dat.org.

Professor Dr. Jill Scott,

Institute Cultural Studies, University of the Arts. Zurich.

www.z-node.net,**www.artistsinlabs.ch**,**www.jillscott.org**

Jill Scott is Professor for Art and Science Research in the Institute Cultural Studies in the Arts, at the Zurich University of the Arts (ZhdK) in Zürich, Switzerland and Co-Director of the Artists-in-Labs Program (a collaboration with the Ministry for Culture, Switzerland). She is also Vice Director of the Z-Node Doctorial program on art and science interfaces at the Planetary Collegium, University of Plymouth, UK. Since 1975, She has exhibited many video artworks, conceptual performances and interactive environments in USA, Japan, Australia and Europe, but exploring the interface between the body and technology. In the last 10 years, her artwork has focused on the relation between neuroscience and ecology. This series called "Neuromedia" consists of interactive media sculptures and dome ideas that explore the perceptual feedback loops of body to understand neural complexity. Touch or tactile perception is paramount to the understanding of neural developmental problems, visual impairment, tactile substitution and environmental damage. She has published a monograph on her 28 years of her work entitled *Coded Characters* (Hatje Cantz 2002, Ed. Marille Hahne) and edited two others: *Artists-in-labs Processes of Inquiry (*2006) and *Artists-in-labs Networking in the Margins, (2010)* both with Springer/Vienna/New York. She is also co-editor of other books with Springer: *The Transdiscourse Book Series* (2010-) and *Neuromedia: Art and Neuroscience Research (2012)*. She just returned from a residency in audio-physicology at SymbioticA, University of Western Australia.

Dr Chris Speed:

is Reader in Digital Spaces across the Schools of Architecture and Landscape Architecture at the University of Edinburgh, where he teaches undergraduate, masters, supervises PhD students, and directs research projects. Chris has sustained a critical enquiry into how digital technology can engage with the field of architecture and human geography through a variety of established international digital art contexts including: International Symposium on Electronic Art, Biennial of Electronic Arts Perth, Ars Electronica, Consciousness Reframed, Sonic Acts, LoveBytes, We Love Technology, Sonic Arts Festival, MELT, Less Remote, FutureSonic, and the Arts Catalyst / Leonardo symposium held alongside The International Astronautical Congress.

http://fields.eca.ac.uk/

Dr Paul Thomas:

Dr Paul Thomas, has a joint position as Head of Painting at the College of Fine Art, University of New South Wales and Coordinator of Collaborative Research in Art, Science and Humanity, (CRASH) Curtin University. Paul has chaired numerous international conferences and has co-curted a show of Australian media artists for ISEA2011 and the John Curtin Gallery Perth. In 2000 Paul instigated and was the founding Director of the Biennale of Electronic Arts Perth.

Paul has been working in the area of electronic arts since 1981 when he co-founded the group Media-Space. Media-Space was part of the first global link up with artists connected to ARTEX. From 1981-1986 the group was involved in a number of collaborative exhibitions and was instrumental in the establishment a substantial body of research. Paul's research project Nanoessence[1] explored the space between life and death at a nano level. The project was part of an ongoing collaboration with the Nanochemistry Research Institute, Curtin University of Technology and SymbioticA at the University of Western Australia. The previous project Midas[1] was researching at a nano level the transition phase between skin and gold. In 2009 he established Collaborative Research in Art Science and Humanity (CRASH). Paul is currently writing a book on Nano Art.

Back to previous page