

ABSTRACTS

Alphabetical by first author's last name

Eliciting Audience's Experience to Improve Interactive Art Installation

Hanif Baharin, Ann Morrison

Designing with the users in mind is one of the widely accepted design practices in the Interaction Design field. On the other hand, it can be said that audience's experience is the heart of an interactive art. Since Interaction Design has shown that user's involvement in the design process can be beneficial, it is speculated that involving the audiences in the creative process of developing an interactive art piece can make the artist improve the art in general and the audience's experience in particular. In this paper, the experience of eliciting the experience of the audiences of an interactive art installation using techniques adopted from Interaction Design such as prototyping, observation and contextual interview is described. This paper also presents the result from the contextual interview and the improvement made to the installation.

Emergence: The generation of material spaces in Anthony McCall's '*Line Describing a Cone*'.

Susan Ballard

Anthony McCall's solid light film *Line Describing a Cone* (1973) is about the emergence of dimensionality in space. This paper uses *Line Describing a Cone* to discuss emergence as a material algorithmic process occurring across the media of informatic systems and installation art. Evolutionary models of emergence trace patterns, whether behavioral, spatial or genetic. *Line Describing a Cone* suggests the emergence of a new kind of mobilized viewer within gallery spaces who does not necessarily 'evolve' but who (through interruption and noise) becomes an interactive emergent part of the material processes of the work. Noise travels and generates the excess dimensionality within which an emergent material process can occur. It is contested here that emergence can only occur within noisy environments. Emergence then, introduces the process within which viewers interact with and experience art installations.

Evaluating audience experience with interactive art

Zafer Bilda

Protocol analysis is used as a method to analyse verbal and non-verbal data. Interactive art experience protocols involve both types of information; behaviour of the individual interacting with the artwork and her retrospective report of what she was thinking during the primary experience. Interactive experience protocols are analysed by the use of a coding scheme in order to maintain a rigorous and replicable analysis process. The aim of this paper is to describe the development of this generic coding scheme for analysing audience experience with interactive artworks.

Physical or Virtual, it's all Real

Tim Boykett

This presentation investigates several of the projects and processes that have inspired Time's Up as they pull the threads of art, science, entertainment and technology together to make their worlds.

Time's Up's work lies in the development of physical real-time interactive situations. This presentation discusses some of the more theoretical questions that have arisen in the process of developing these pieces, as well as discussing some of the technical issues surrounding the development of realtime reactive audio-visual environments. Pulling ideas from Stanislavski, the theatre director (1) and Damasio, the neuroscientist (2), to investigate the actions of so-called public individuals in constructed situations, Time's Up projects are very physical and attempt to use this physicality to avoid the "crisis of media art." (3) The grinning faces of visitors leaving installations are evidence that this is being at least partially achieved.

One main thread is the idea of the Exploration Narrative to describe the actions of visitors to large scale interactive situations. Bringing together the observation that people attempt to build experience into narratives and to find causality where it can be found, the visitors begin to act as "protoscientists" (Bob Fischer, anthropologist) (4) investigating the constructed world. Multiple perspectives and world-internal possibilities to reflect upon the behaviour of the space and its visitors, encourage a discussion between visitors, and the social level of interaction is raised. This discussion is less about the technical "how" of the installation as about the relational "why", and incorporates the unique experience of every visitor.

Notes

- 1 Constantin Stanlavski's "System" used body memory of emotions. See any of the many online resources.
- 2 Antonio Damasio "The Feeling of What Happens" Vintage 2000.

3 The past few years have seen many claims of and discussions about a crisis in media art which include questions about content, skill levels needed for curatorial and critical expertise, new generation not seeing the newness anymore, and so on.

4 The Exploration Narrative is a model developed to bridge the gap between the Game Gestalt and Narrative Gestalt discussed by e.g. Craig Lindley, enabling the player to be significantly involved (Game) as well as distanced (Narrative) in their interactions.

5 Bob Fischer was a Swiss anthropologist who, among other project investigating the nonlinearity of time perception, taught video with Aboriginal groups in the Australian outback. On one visit to our workshops where he was talking about the re-appearance of nonlinear time perception in the digital age he began an analysis of our projects. He developed the idea of the public individual as "protoscientist" as a cornerstone of this analysis. Unfortunately he was unable to finish this project before his death.

Modes of Creative Engagement

Andrew Brown,

There is good reason to think that making and interaction with a computer are both inherently engaging, given the amount of time people spend at these activities. However, it is also possible for computer software to be boring or frustrating so, as interaction designers and artists, we still need to pay attention to the modes of creative engagement that different systems foster. The modes of creative engagement proposed in this presentation are different ways of relating with creative activities and the presentation outlines how these modes can inform the design of computer systems that support creativity.

Media Mirrors and Image Avatars

Kathy Cleland

This paper looks at modes of audience engagement in video art and interactive digital media installations where media act as mirrors enabling audiences to observe and interact in a variety of ways with their own image avatars. The paper explores the ways different media constitute and encourage new forms of subjectivity and new ways of seeing ourselves as visible entities and images in the world. As well as looking at some examples of recent new media work, this paper also draws on the work of early video artists whose works are important precursors to these more recent new media art installations.

Touch as the act of signification; naming as a key design concept for gesturally intuitive interactive space.

Roman Danylak and Ernest Edmonds

The act of naming, where sign and the signified are coupled as an act of touching, establishes the foundations for the meaningful use of language. The computer, a language machine, possesses the capacity to input sensory data from the physical environment where signification occurs. To design a computationally extended sensory environment with intuitive gestural interaction will necessarily then have touch as a foundational factor. The universal element in such systems is language; the specific is the context of place, a space where the signifying action of touch occurs.

Frolicking with Phantoms: Illusion in Mixed Reality

Alex Davies (presented by Keir Smith)

This paper explores the induction of specific emotional effects upon individuals through illusion in mixed reality installation environments, using the author's work *Dislocation*, (2005) as a case study. The paper reports on the design and production of *Dislocation*, concentrating on the development of techniques for creating illusion. These approaches can be used to produce compelling works that are not only technically and aesthetically sophisticated, but also provide a sustained engaging experience for the user. It reflects on the effectiveness of these techniques from observations of audience interaction in gallery settings.

Creating a social anxiety interface in the artwork '*In the house of shouters...*'

Anna Davis

'*In the house of shouters...*' is an experimental, quasi-social environment exploring states of social anxiety. This paper focuses on how the highly collaborative processes involved in performing the digital personas, building an interactive prototype and testing it with live participants, led to the discovery of new 'anxious' intensities emerging within the embodied interaction and explores how these findings were implemented into the final interactive framework.

Catching the Interactive Experience: Using the Repertory Grid Technique to Get Qualitative and Quantitative Insight into User Experience

Daniel Fallman

Through an example study of the Reality Helmet, an interactive experience, we present the Repertory Grid Technique (RGT); an open and dynamic empirical technique for eliciting qualitatively information about users' experiences of artifacts, whilst at the same time allowing the data to be subjected to contemporary methods of statistical analysis. RGT is a technique on the border between qualitative and quantitative research and is unique in that it considers holistic aspects of cognition and in that does not, for instance, separate intellectual from emotional aspects of the user experience. In this paper, we argue that it might be worth considering the RGT technique in trying to get at the experience of users and audiences in areas such computer-based interactive art and experiences, performing arts, and theatre and film.

Probes and Commentators: Placing Interpretation at the Heart of Design

Bill Gaver

Designs for everyday life must be considered in terms of the many facets of experience they affect, including their aesthetics, emotional effects, genre, social niche, and cultural connotations. Methodological approaches that emphasise convergent, unitary interpretations are questionable in this context, whether they are aimed at understanding situations for design, creating experiences for users, or assessing the results of one's practice. In this talk, I describe several approaches we have developed that encourage more open-ended and multi-layered interpretations as resources for design research. To understand contexts for our designs, for instance, we use Cultural Probes and Design Documentaries in order to reveal provocative, fragmentary and subjective accounts of people and places. In our designs, we offer open-ended resources, block obvious interpretations, and suggest exaggerated ones, all in order to undermine the designer's authority and promote the user's. For our field trials, we often use ethnographic observations and Cultural Commentators (people whose profession it is to inform and shape public opinion) as resources for multi-layered assessments of designs. Together, these approaches allow us to approach interaction design with respect for the multiple meanings that characterise everyday life.

An Exploration into Deeper Engagements of Audience and Creative Process

Tina Gonsalves

The artist discusses the trajectory of three creative projects dealing with affect and audience. She discusses the progressions of how audience engagement drove her creative process, and how her work developed, from earlier single channel short film works exploring a one-way dialogue with audiences, to more intricate multi-channelled interactive and wearable technology artworks that explored a more complex two-way dialogue between work and audiences. With each project, the role of audiences became more central to her work informing her artistic process.

Participatory Systems

Beryl Graham

'Interactivity' is a notoriously vaguely used term. In this presentation different kinds of reactivity, participation and collaboration are explored with reference to contemporary artworks including those by Harwood, Harrell Fletcher & Miranda July, Ritsuko Taho and Rafael Lozano Hemmer. Using a metaphor of 'conversation', different strategies of interaction are explored, and the tension between fine art venues and the question of "why would you want to interact in an art gallery?" is addressed. With reference to Robert Morris in 1971, and the CRUMB discussion list, some of the conceptual and physical barriers to interaction in art venues are discussed. Despite occasional interest in 'relational' art from the world of fine art, and explorations in 'dialogical' forms from the world of socially engaged art, there is very little understanding between the fields. Studies of behaviours in museums, including those by Christian Heath, are illustrated as examples of the importance of 'human-human interface', but in practice there is little crossover between HCI and HHI. In London, the only new media art currently on permanent display in a museum is in the Science Museum, which highlights the divisions between what Lev Manovich has called "Turing-land" and Duchamp-land".

Can knowledge be shared between these lands? Can a common language be found for a conversation? What would Rirkrit Tiravanija say in a conversation with an HCI researcher?

Towards a visual taxonomy in New Media Art

Ian Gwilt

The objective of this paper is to discuss possible indexical methods that might be applied to the variety of techniques and processes commonly used in New Media Art. A key part in this undertaking has been the

development of a 'visual taxonomy for New Media Art', which it is hoped will contribute to the defining of prevalent forms and trends within the genre. The proposed visual taxonomy can be examined from both a conceptual, and practice based context. Framing a description of New Media in the context of a creative activity that foregrounds the viewers experience, rather than a technologically described model, and is intended to be of interest to artists, researchers, historians, art curators and the art going community.

I will begin with a short definition of New Media Art and the taxonomic concept, followed by an investigation of related indexical examples. I will then step through the objectives of the taxonomy, concluding with a look at the prototype model and how this has been applied to existing New Media Art case studies through a process of data collection and dynamic visualisation.

From Audience to Inhabitant: Interaction as a medium in architecture

Joanne Jakovich & Kirsty Beilharz

This paper presents a framework for conceiving and implementing interaction as a medium in architecture. Architecture is the theoretical and practical art of creating a plan of a complex object or system in which the subjective mapping from a human perspective to components of the system is the core design focus. Traditional architectural design involves the specification of materials, which implement creative expression in the mediums of space, light and time. Interaction, or the reciprocal action between a human and another entity, is the basic medium of expression manipulated by the interactive artist. The aim of the paper is to outline a logical framework for considering the techniques and materials of interaction, as used in interactive art, in the context of architecture. The framework is a four-part collection of interlinking concepts that we established to define i. architecture, ii. medium, iii. interaction, and iv. interaction as a medium in architecture. Following, the implications for implementation of the framework are discussed, based on works by several hybrid artist-architects. The framework is an analytical ground point to base practice and research occurring in this emerging field of spatio-experiential design.

Styles of Participation and Engagement in Collective Sound Performance Projects

Kazuhiro Jo, Yasuhiro Yamamoto, Kumiyo Nakakoji

The SINE WAVE ORCHESTRA (SWO) is a collaborative sound performance project that has been actively performing for the past several years. The basic idea is that each participant plays a sine wave, and by changing its frequency and volume, creates a collection of sine waves as a collective sound representation. Although all SWO works use the same sound representation (i.e., sine waves), different SWO works use different temporal, physical, environmental, and procedural settings. The different settings have resulted in different types of sound experiences for the participants. This paper examines six of the SWO works and discusses what aspects of the settings affect how people engage in collective sound representations.

Partial Reflections: Interactive environments for musical exploration

Andrew Johnston, Ben Marks, Linda Candy & Ernest Edmonds

This paper describes an ongoing project to develop interactive environments for musicians that encourage musical exploration. A process of developing software such as this, where requirements are highly dynamic and unclear is outlined and two musical compositions and associated interactive environments entitled 'Partial Reflections' are described.

The Avoca Project: place and art and interaction

Lyndal Jones

What constitutes an audience? And when could it be said that an audience begins to actually engage with an artwork? For those of us whose political concern as artists has been to challenge the apparent passivity engendered by spectacle, these questions underlie a focus on creating artworks that require physical interactivity between the individuals who constitute an audience and the work itself.

Interactive art as embodied inquiry: working with audience experience

George Poonkhin Khut

Interactive arts practice is considered here as a medium for critical enquiry. An experience-centred approach is used to explore how interactive art works facilitate processes of inquiry and reflection. While it is often said that the role of an artwork is to raise questions, my interest here is in art's capacity to help us develop understanding. Given that it is people and not artworks that are asking these questions, and that meanings evolve *through* audience experience and interaction, it follows that a more detailed understanding of audience experience can help arts practitioners understand some of the ways these forms of inquiry and experience can be afforded by their works. Two frameworks for understanding user experience, drawn from the fields of Human-Computer Interaction and experience-centred-design are used to examine audience experience in *Cardiomorphologies*, an interactive artwork that explores the experience of subjectivity as a physiologically embodied phenomenon.

The Bairdboard Bombardment: a decade of engagement

Mike Leggett

This paper will position aspects of computer-based arts practice a decade ago together with manifestations and directions being taken on the contemporary scene. In the light of recent events foreshadowed by the disbanding of the New Media Fund of the Australia Council, the question is: have artists failed to aspire to the dynamic potential of the earlier period of development, or has arts practice moved into a more mature relationship with audiences through the broadening of creative agendas?

Perceptual Evaluation of Spatial Audio for "Audio Nomad" Augmented Reality Artworks

Nick Mariette (presented by Somaya Langley)

Audio Nomad is a three-year art/science research collaboration on the creative and technological potentials of location-sensitive, mobile spatial audio. The first Audio Nomad productions were two versions of Syren – a ship-based multi-speaker installation using the ship's position from a GPS receiver to render a two-dimensional soundscape. New work including Virtual Wall (Berlin) will create a personal location-sensitive spatial soundscape on headphones using a portable computer, GPS receiver and digital compass. The technological intent is to enable the artist to augment real world objects and spaces with sounds perceived to emanate from them. It is important to know the maximum perceivable accuracy of the intended augmented reality effect, given human and technology limitations, even if soundscape design doesn't always require maximum precision. Ultimately, authoring software features will inform the artist of afforded perceptual quality, enabling better utilisation of the medium's potential. Few similar projects have been produced to date and fewer have published quantitative perceptual evaluation research. This paper reviews the field and describes present experimental results and future work on the perceptual evaluation of binaural spatial audio for mobile augmented reality, especially Audio Nomad artworks.

Conflating forms: *The Shoebox* a case study of merging non-linear interactivity and linear narratives

Janet Marles

This paper describes the conflation of non-linear and linear narratives in digital media using examples from the interactive documentary *The Shoebox* that is built around three 360 degree panoramic virtual reality scenes. In *The Shoebox* users can play each of the three VR scenes as a scripted linear sequence or they can interactively navigate from one scene to another or to additional media. This interactive architecture is to be further extended to include an additional layer. When the user clicks an icon or a node and accesses a fragment of media, for example: video fragments; still photographs; animated stills; or audio clips, the selected fragment descends to a timeline within the field of view. As each icon is clicked these fragments build along the timeline and after a number of segments have been acquired the timeline itself can be played as a linear sequence. The construction of this additional layer of sequential, temporal narrative, obtained through non-linear interactive actions, plays the content of the story in the traditionally, cinematic way.

The reflective practitioner: in creation of a presence based experience

Sarah Moss

This paper will discuss audience as participants and reflect on why interactive artworks require 'safe' environments for exhibition. A pilot study was developed in order to ascertain the artists' conceptualisation of a presence component within a networked system. The study of the interactive artwork *The Element of 'Luck'* was devised to gauge a participant's presence experience in terms of human computer interaction (HCI). It is the first in a series of works that will develop sequentially during the next three years; each layer of new work informed by the progress of the last. This study facilitates a dialogue in relation to the following criteria: 1) presence and facilitating engagement; 2) the audience as participants; and 3) environments for exhibiting interactive art systems.

The Thummer™ Mapping Project – ThuMP

Dr Garth Paine

This paper presents the Thummer Mapping Project (ThuMP), an industry partnership project between ThumMotion P/L and The University of Western Sydney (UWS). ThuMP is engaged in developing mapping strategies for a new interface for musical expression (NIME), the Thummer™, which provides thirteen simultaneous degrees of freedom, and testing such mapping strategies for expressivity and cognitive perceptual affordances.

Site, Surface, Screen: Interactive Art in Public Space

Julianne Pierce

This presentation will provide an overview of two projects which I have curated that exhibit interactive art in public spaces. The first of these is *Luminosity*, a public projection art project developed for the Adelaide City Council while I was

Executive Director of Australian Network for Art and Technology (based in Adelaide, South Australia). The second is The Peoples' Portrait by Zhang Ga, presented as a major visual arts project in the Adelaide Bank Festival of Arts 2006. The presentation Site, Surface, Screen: Interactive Art in Public Space will investigate issues surrounding mounting work in public spaces and the challenges of working in public space and with a general audience.

The promise of little arty micro-fish

Natalia Radywyl

Drawing from an empirical investigation conducted in the Screen Gallery at the Australian Centre for the Moving Image in 2005, this paper considers a methodology for examining visitor behaviour in interactive, media art spaces.

When investigating the interrelated historical narratives of the museum and art object, it appears that in recent times, visitors are being required to exercise increasing levels of self-determination in the museum space. This paper illustrates how a phenomenological framework not only captures emerging forms of visitor agency and experience in the museum, but also sheds light on significant relational shifts between art institution, visitor and art object.

The economy of Interaction in public art galleries and museums

Mike Stubbs

In 1968 I had an early museum experience, watching the 20th scale steam engine stir into life on pressing a button at the Science Museum in London. I pressed a button, something happened. Later as an art student I stood in an art gallery of abstract paintings by Rothko, both experiences burned strong images into my memory. As an artist and curator I have attempted to challenge and progress models and contexts of making and showing art, using strategies, tools and processes within a range of exhibition sites and settings. Sometimes made within practice defined as 'new media' and a period of utopian desires to convert consumers into producers, however has this lead to good art or exhibitions? Increased provision of interactivity whether touch screen interfaces for didactic information or contextualising podcasts as part of the visitor experience in museums and galleries mirrors everyday experience of ubiquitous technological enhancement. These interactive and networked technologies sit across daily life, and a broad range of communities. Within a constant state of emergent technology and society, the distinctions between stand alone new media experiences, interactive museum design and art, are in need of constant re-assessment.

How do we then differentiate discrete media art from new media enhanced display, context and exhibition? With the distinctiveness gone, what are the new values? Has the art gone or become clearer to see, when the creation of technical systems and open source networks are no longer the avant-garde?

Identification-Projection-Interaction: The Participant in an Interactive Art Environment

Mari Velonaki (presented by David Rye)

This paper is an analysis of the spectator's engagement with projected/screen or kinetic characters that can inhabit interactive installation environments. It questions issues of spectatorship and highlights the processes of identification with a character, and therefore interactivity. The theoretical framework employed by the author has been strongly influenced by Jean-Louis Baudry's theory of the cinematic apparatus and his conception of the relationship between the spectator and the projected image. Baudry adopted a psychoanalytical approach to explain the complexity of the relationship between the spectator and the projected 'other'. This paper aims to prove the connection and relevance of applying Baudry's theory of the apparatus within the field of interactive new media installations that employ digital or kinetic characters.

A Study of Interdisciplinary Collaboration in Art and Technology

Yun Zhang, Linda Candy

This paper describes a method based on protocol analysis to study interdisciplinary collaborative activities between an artist and a technologist. The data was collected during an artist-in-residency project COSTART (COMputer SupporT for ARTists). The aim of the research is to understand how artists and technologists communicate with each other during a collaborative process. The paper describes how the research was carried out and, in particular, how the data analysis was conducted using coding schemes developed specifically for this context. At the end of the paper, preliminary findings are presented and future works are indicated.