

Interface, Design and Visual Indexing

Chris Bowman, Jacqueline Gothe, Daniel Ireland, Mike Leggett

University of Technology Sydney

E-mail: Chris.Bowman@uts.edu.au; Jacqueline.Gothe@uts.edu.au; Mike.Leggett@uts.edu.au

ABSTRACT: Each of the panel are working in related ways in the context of this session, to address the storage and retrieval of the stories of a modern oral and visual culture. Four distinct projects will open out the approaches and thinking being pursued and the overlap that exists between them. We have become aware of one another's work over the last nine months, have been working on our separate projects for varying periods with and without budgets, and also have in common development cycles of from 5 – 10 years.

These short presentations will each highlight the specific problem encountered or theoretical concept being tested and why the outcome of the project could be of wider social value.

KEYWORDS: interface, indexing, interactive, hypermedia.

PAPER

Whatever the origin of our representations.....they must all, as modifications of the mind, belong to the inner sense. Kant

Introduction

Descriptions of Human Computer Interfaces rely heavily on visual metaphors developed in the mechanical machine age – the printed page, the desktop, the map, the graph paper, the soundtrack dubbing cue sheet.... These have provided models towards HCIs which in the transitional sense complement the workings of human memory but which largely fail to stimulate the individual users imagination upon becoming 'immersed in knowledge', or other risks associated with the computer-mediated experience.

Random access in the computer as opposed to the book, is capable of extending the usefulness of the written word and delivering, on-demand, the spoken word, sound and picture. Though the means of achieving this is currently in technical development the general purpose interface capable of delivering indexed sound and image beyond the notion of 'the thumbnail' image set in a key word context, is an area in need of further research. Whilst resources have been invested in the imaging of data for systems management, (in finance, security, aviation etc), little has been expended in the expansion of tools for the humanities and the development of human consciousness that appeal to the intuitive mind or the curious spirit.

Whilst the coding options within the literate society has recently undergone rapid extension – email, hypertext, server messaging, SMS - the rediscovery or reinvention of an interactive oral culture using text, graphics, moving images and sound delivered over high-speed networks will be unable to produce similarly fundamental outcomes without access to indexing that avoids the use of one coding system – text – in order to access another – images and sound. Whilst we acknowledge the impact of computer-mediated gaming, the financial imperatives that have driven this development has eclipsed the possibility of advancing in areas unrelated to entertainment.

We will each speak to our printed position statements for 5-10 minutes, as the focus will be on comparing each of the models we are working with in order to clarify the ways forward, during a concluding discussion, in the more universal adoption of the computer-mediated presentation and reception of knowledge and experience.

Visual Indexing and the Language of Gesture

Chris Bowman:

Since the invention of cinematography motion pictures have undergone continual advances in both technology and content. Now, with the introduction of interactive technologies, the conventions of storytelling through motion pictures are being challenged and reshaped. Primarily, a place is being constructed for the viewer to 'enter' the story and effect change, making choices and seeing the consequences in real time. Given the basic limitations of the computer as auditor, the creative effort of interactive content developers, designers and artists becomes focussed on how to build worthwhile options and how to fashion sympathetic responses. Visual indexing in this context works to move beyond the dominant theory of film narrative to explore intuitive storytelling in terms of mediation, gameplay and meaning.

Currently, I am exploring the rich terrain of visual indexing through the Orpheus Project. Orpheus, a work in progress, will be a modern film interpretation of the immortal story told through the symbolic artistry of Sankai Juku, one of the world's most outstanding dance ensembles. In the world of interactive possibilities Orpheus proposes to use a three part system of navigation to enable the viewer to enter the story. I propose that the three part system will consist of discrete forms of visual indexing to facilitate viewer participation in the following manner:

1) Polar Keys – present the viewer with the opportunity to create changes, sometimes harmonious, sometimes abrasive to the story. This is achieved by providing the viewer access to alternative sequences that explore contrasting subplots and metaphors. These alternatives influence the events throughout the story and most significantly, they are designed to affect the motivational influences of the main characters.

2) Portals – an opportunity to use modes of interaction which explore the hidden architecture of the film and graphic content. In particular, I wish the viewer to manipulate the speed, depth of field, and layering of audio/ visual content. The consequences of this manipulation is to allowing the audience to experience shifts in the key events in the story and experience the sequences from another character's point of view.

3) Narrative Gates – fashion an opportunity to engage in elaborate passages of text (the Sonnets to Orpheus by Rainer Maria Rilke and the 3rd Century AD Orphic Hymns) and image accompanied with chorus/voice over. These resonant passages create shifts in the story which embody the spiritual relationship between nature, humanity and the universe. The viewer will explore these passages as sound and film compositions.

Much of my work here is focused on the visual codes and index systems used to build and shape this three part system of navigation. In particular, I am interested in further developing the mechanics of computer interaction to enable the audience to remain immersed in the story and its elaborations. From this comes my conviction that the language of manual gesture is the most promising way to proceed. The dimensionality of simple hand movements may tracked and these are translated into corresponding visual and audio transformations.

With the generous support of the Australian Film Commission and the Australia Council the Orpheus project has moved through progressive phases of script development for film, DVD formats and gallery installation. At present, I am developing a prototype for the gallery installation using a Narrative Gate as content. This prototype will test the visual indexing of a 'set' of immersive narrative experiences as they are mediated through a 3D configured Virtual Reality stereographic interface and 'cinematic' gallery environment. This technical configuration and the visual indexes are designed to offer a compelling and absorbing sensory environment within which viewers may interactively weave their own pathways to explore the complexity of themes, characters and settings. In this manner Orpheus will unfold before them in a way of their choosing, which is both personal and unique.

Orpheus is aimed at a broad audience which includes not only those most interested in theatre, dance and

music but also those who appreciate the meld of art and technology. It is intended that the convergence of the 3D configured Virtual Reality stereographic interface and cinematic content will, in part, lead towards networked systems of communication in the fields of collaborative medical/biotechnologies, nanotechnologies, art and design.

Envisioning Corangamite

Jacqueline Gothe and Daniel Ireland

The process of interface design and related notion of indexing find their form in this project in complex ways. The understanding of indexing through this project reveals itself, as a social phenomena, with an immutable relationship between the real world/outside/corporeal and the virtual world/inside/screen. In this scenario the capability of providing an interactive consultation function within a community and policy development framework where the stakeholders range across a diverse user profile provides a site of investigation.

The project team are interested in raising two areas of indexing that is evident in the interface design. First is the issue of the representation of consultation and how that arrives in this project. Second is the indexing that enables an immersive textual experience for the engaged user with an ease of access to the underlying arguments, information and data that support the strategic document.

Sustainable use of natural resources is a major task facing Australia. It is complex and contested ground, where communication between participants - scientists, technical advisers, resource managers, landholders and environmental groups – is central to reaching agreement on problems, causes, goals, priorities and actions.

The project Envisioning Corangamite (<http://www.ccma.vic.gov.au/racs>) – supporting knowledge sharing through information design in the planning for sustainability across real and virtual spaces-takes as its starting point the research, design and testing of knowledge objects and interactions in planning for natural resource management at regional and local levels of scale. The issues of interface design and indexing are major components in the focus of the project. The project is currently in its third iteration of Stage 1. It is hoped that the Project can move into Stage 2 and 3 over the next four years. These next stages will provide the opportunity to explore representations of the environment in a web, print and temporal based forms.

This project is based on the communication strategy Exploring the Communication Landscape (see <http://www.educ.dab.uts.edu.au/ccma/ccma.swf>) for the Corangamite Catchment Management Authority for the Corangamite region – an area of 13,340 square kilometres in southwest Victoria stretching from Geelong along the Great Ocean Road, north through Cobden and Camperdown, Lake Corangamite and part of Ballarat. The

region is defined by the aggregation of its four river basins – Moorabool, Barwon, Lake Corangamite and Otway Coast, plus three nautical miles out to sea.

The four strategic approaches are

1. Broaden models of communication to include an interactionist perspective where the desired outcome is shared meaning.
2. Design with an understanding of complexity utilising principles of information design and visual processing.

The indexing system that has emerged as a representation of the consultation and its contribution to the interface design is a direct result of the articulation by the team that developed the Regional Catchment Strategy of a commitment to community empowerment in the process of natural resource management and the determination that this would be an ongoing process over the five year renewal. This attitude was evident in the notion of the question and the comment which becomes a major index to develop the process of knowledge sharing in the region.

The second determiner of index and interface was a commitment to the text as the foundational. The Regional Catchment Strategy 2002-2007 is not one document but rather a suite of documents comprising a summary, a strategic overview, fourteen published reports, supporting strategies and a record of the regional discussion. This complexity is then placed in the even more complex context of State and Federal natural resource management strategies and policy papers.

Maintaining integrity to the breadth and the ongoing nature of the process demanded an acceptance of the browsing nature of information gathering on the web and the impossibility of easily grasping the whole. The impetus to find simplicity was counter-pointed by an understanding of the inability to mobilise reduction as a satisfactory strategy in this context of what appears to be vast amounts of information. However the depth of relationships and the linked arguments across policy documents was a major index. The design strategy is evident in the linked reports, comments and hyperlinks to other relevant websites. It is this textual indexing that provides for an immersive non-linear experience.

The aim, for the Corangamite regional Catchment Strategy 2002-2007, in its real and virtual manifestations is to facilitate the ongoing interaction that results from the comments and questions, the updated research in the form of scientific data, reports and relevant strategies and regional news which will be available on the web site, in addition to ongoing live discussion in real spaces. The website becomes a focus to manage this content so that in 2007 when this

Strategy is renewed the evidence of the conversation will be maintained in the database supporting this site.

PathScape

Mike Leggett:

The PathScape project seeks an indexing system capable of accessing personal and public digital documents placed into a topographical context.

There exist several software tools (such as ArcView), related to topography and recorded time and place. These are widely used in the industries related to so-called environmental planning – water and land management, urban layout, national parks, mining and agriculture, etc. They are ingenious, specialised tool sets based on data derived from scientific method - measurement. Combined with GIS satellite data and a range of plug-ins that enable digital images, sound and text files to be attached to specific coordinates, this allows extensive profiles of geographical locations to be constructed and navigated in real-time. The Humanities have adapted these tools, archaeologists and social scientists most notably, with for instance, TimeMap that links through a combination of text and map metaphor, personal oral histories with localities.

My problem with such tools is the plethora of styles and codes they usually incorporate, using maps, diagrams, graphical and typographic devices, each inflected with current tools and fashions in interface design. The user's encounter is like a visit to the aquarium, gazing through the glass at other peoples' lives, before moving onto the next container.

The PathScape project sets out to test the tide line between the practicalities of delirious immersion and the possibilities of indexing the cogent experience, as lived by the subject and lived by others. In this sense it can become a tool, like for instance those used by amateur genealogists, for the accumulation of a library of personal audio and visual material. It is related to the notion of 'infovis' as described by the mathematician Tamara Munzner as being "about tools that exploit the human visual system to help people explore or explain data. Interacting with a carefully designed visual representation of data can help us form mental models that let us perform specific tasks more effectively."

PathScape is an interactive multimedia project progressing through several stages and adopting several iterative forms. In the completed prototype audio-visual indexing forms operate within an interface design developed with a small team of sound and visual artists.

The project accesses representations of the natural world through a combination of gesture and iconic image fragment. The outcome of a recent iterative version, GreenScape, the interactive encounter occurs in a public gallery-type space utilizing a screen and sound

deployment which in conjunction with a gesture recognition system that goes beyond mouse-scale movement, will expand the meaning of a journey into the realm of the performance, as each user in turn is observed talking a walk through the landscape.

The appeal will be to the users knowledge and experience of the natural world, however wide or narrow, sympathetic or antipathetic that might be, and its remediation as an artificial topography. Encountering this range of immersive states will engender a sense of a favoured space. In moving from A to B, or backwards and forwards in parts of that track in exploration, the user will learn the pathway as a visual indexing system through the visual cues (loci) that lead back to the combination of files that deliver the most pleasure, meaning, or other stimulations. The users cultural preference and temperament determines this, whilst giving exposure to, (also as an observer), the cross-cultural preferences of others. The Japanese concept of ma for instance, connotes the complex network of relationships between people and objects. This notion of space-time continuum is distinct from the neutrality assumed of post-Renaissance space, which is then personally and collectively colonised.

The project seeks to reach both general and specialist audiences and can be adapted to do so in disc, installation (interactive cinema) or on-line format. Media assets can be added or removed according to the installational need quite easily, as the engine will review folder contents at each reboot – the framework is dynamic in this sense and can be regarded as a tool. The project accesses representations of the natural world through a combination of gesture and iconic image fragment, so that as Nikos Papastergiadis has put it: “..I seek to grasp the sense of place that is created as art stimulates sensations and engages relations with other people.”