Mnemovie:
Visual Mnemonics for Creative Interactive Video

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Thesis, Doctor of Philosophy

Creativity & Cognition Studios

University of Technology Sydney

2008

Certificate of Authorship

I certify that the work in this thesis has not been previously submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all the information sources and literature used are indicated in the thesis.

Signed

Date   _____

Acknowledgements

For Deborah, Hal and Aurora, my main sponsors.

The many artists and other researchers, both real and virtual, many of whom are listed in the References, but in particular, Adam Hinshaw, Adrian Miles, Alex Davies, Andrew Brown, Chris Welsby, Darren Tofts, David Tafler, Gerhardt Fischer, John Downie, John Sutton, Kate Richards, Keir Smith, Lizzie Muller, Louise Curham, Lucas Ihlein, Lyndal Jones, Michael Buckley, Murray McKeich, Norie Neumark, Stephen Jones, Sue Healey.

My supervisor Professor Ernest Edmonds and colleagues in the Creativity & Cognition Studios, Faculty of Engineering and Information Technology, University of Technology Sydney, who have given help in myriad ways for the making of these researches over the past four years. In particular, Linda Candy, Shigeki Amitani, Zafer Bilda, Alastair Weakley, Julien Phalip, Brigid Costello and Deborah Turnbull. In the Faculty: Laurel Dyson, Steven Grant, Jim Underwood, Teraesa Ashworth and Andrew Johnston. In the University: Professor Ross Gibson, Annmarie Chandler, Chris Bowman, Ian Gwilt, Andrew Martin and Paul Ashton, the Graduate School and those who approved and administered my Australian Postgraduate Award.

For those I have overlooked, there will come a time when all will be revealed…….

Preface

'While more and more people … are plunged into film history, the experience is far removed from that of the traditional cinema audience bound to a film in its given order at 24 frames per second. In this dialogue between old and new, past and present, the opposition between film and new technologies begins to break down and the new modes of spectatorship illuminate aspects of cinema that, like the still frame, have been hidden from view.' (Mulvey, 2006) 27.

FIG. 1
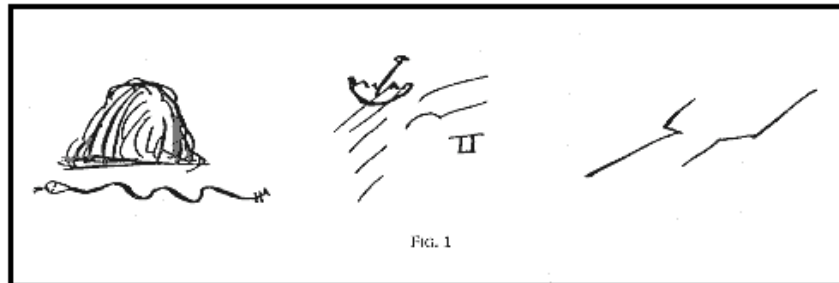
When a man is making a speech and you are to follow him, don't jot down notes to speak from, jot down PICTURES. It is awkward and embarrassing to have to keep referring to notes …. but you can tear up your pictures as soon as you have made them - they will stay fresh and strong in your memory in the order and sequence in which you scratched them down. (Twain, 1914)

My initial encounters with the contemporary era of interactive computer-mediated artworks began in 1992. A small Macintosh SE, a single unit incorporating screen and CPU, placed on a table in one of the vast upper loggias of the Royal Festival Hall in London, containing a 'virtual book' of 'animated poems' by the poet and Chinese scholar John Cayley, demonstrated to me the potential of animated motion pictures controlled through computers.[1]

A few days later I visited the Town Hall Gallery in Croydon, south London, and caught sight of myself on a monitor. The artist had captured my image on the way into the exhibition, added it into a database, then retrieved it along with other visitor's appearances, displayed randomly as we moved through the space. Photographic images as dynamic, randomly accessible resources for memory and the moment, as memory-resonant moments of time were experienced firsthand.

Later that year, the Third International Symposium of Electronic Art (TISEA, 1992), was hosted in Sydney and shortly after, I signed up for a Master of Fine Art by Research on the topic of interactive multimedia. Another decade and the need for further advanced research, delivers me to the present.

The act of 'being in the world' of related research, affects directions taken and affordances encountered, as in any other endeavour. The 'snapshot' herein of my research and the research of others is therefore a four-year time exposure of captured written information and thoughts from the recent to the more distant past. Though so many 'leads' and possibilities were assiduously followed-up, it does not claim to be exhaustive. Making connections and establishing relations between aspects of several otherwise specialised disciplines, was motivated not only by understanding more deeply the tools and technologies available to the artist, but also the university culture supporting broader research objectives.

The significance of this became amplified to me for instance at meetings of senior researchers, where documents presented supported in a parallel sense, my personal research objectives. Thus for example in June 2006, one of the

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[1] Later that year I purchased his collection of works, all made using the revolutionary Hypercard software, on a floppy disc (Cayley, 1992). Cayley is now a well-known artist, the winner of prizes and residencies around the world and a prolific experimenter with poetic and generative forms. http://homepage.mac.com/shadoof/net/in/

handful of invited delegates to the *Symposium on Supporting Creativity with Search Tools*, Washington DC, affirmed the activity of searching a database or collection as *"…part of a creative process."* (Kules, 2006).

Creativeness, like memory, has many descriptions and meanings subject to context, particularly when conjoining with the visual image. A famous user of visual memory aids was Mark Twain. At one point he was delivering memorised lectures nightly, but he found remembering the ten phrases he used to structure his presentation difficult. So he tried the first letters of each phrase, written on the ends of his fingers. But he sweated them off during the course of the lecture. So he used pictures instead….

The image of the 6th Century technology of the letters of language dissolving before the speaker's eyes as he determines to aid his memory is a suitable metaphor to commence this written account. Plato would have been equally unimpressed by the muteness of the images Twain chose to stimulate memory. In a world drowning in images of affirmation, invariably set against a backdrop of intractability, this research affirms mutability as a guiding research principle.

Mike Leggett

April 2008

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Abstract

There is a problem with storing and retrieving audio-visual digital media files using information and communication technologies employing text-based indexing systems. Fundamentally, the complexities of language as a semantic system do not serve well the complexities of the motion picture document.

The objective is to propose effective and affecting means by which creators and audiences can store and retrieve the video files with which we work, communicate and entertain ourselves, increasingly each day. The research has employed practice-based research to extend our understanding of the precept of a taxonomy based on the visual mnemonics of the motion picture document.

The research approach draws on the work of Schön: *"…our knowing is in our action…"* (Schön, 1983) 49, together with Norman's description of two modes of cognitive behaviour, the experiential and the reflective (Norman 1993) 16. This is echoed by recent work on 'the configuration of indexicals' (indexicality) where communities of expertise can collaboratively establish *'..shared meaningful objects…'* within a referential network (Sarmiento and Stahl, 2007). It joins many others, who have identified the activity of searching a database or collection as *"…part of a creative process."* (Kules 2006). These researchers have informed the production of evidence in my research, that takes the form of experimental models from which data has been gathered, both in the making of the artefacts and their evaluation.

A series of seven experimental Models have been built using movie files encountered as full screen motion-picture images, navigated with four-way gestural interactivity. Mnemonics – aids to memory – are deployed taking two broad approaches: a schema, (from the Greek *skhema*, meaning shape), imparted with a word description at the outset of the interactive encounter of a primitive to describe navigational principles for each Model; and the images and sounds within the movies, associatively and semantically related mnemonically to the knowledge domain of the collection.

Conclusions emerge from two areas of practice-based research, the artist/designer and the potential user group. Initially, evaluation of the objective of each experiment with the creativity support tool - the Mnemovie engine – revealed the need to design interactive movie Models specifically for each

collection of movies. Subsequently, observational data from the test subjects both confirmed and contradicted the precept, leading to the description by participants of their own navigational designs using the Mnemovie system for personal movie collections.

Further research objectives are reported emerging from the conclusions, proposing specifications for a system, or series of systems, incorporating further development of the Mnemovie engine support tool, live performance collaborative projects, generative systems, and opportunities for interactive sensing systems technology.