**The Research and Development of Performative and Transformational Theatre through Assistive Technologies**

R. Brown, December 2011

I am interested in researching and developing the concept of scalable interactive theatre, combining generative 3D audio visual delivery with natural and intelligent interfaces, for example using games engine technologies coupled with voice and gestural interfaces made possible by the Kinect, a consumer product by Microsoft.

I believe live interactive theatre offers the potential of creating a new type of improvisation and theatrical experience where content is continually dynamic and unfolding, where at any time the performer is able to change persona, interact and effect scene content through gesture and voice.

Chris Topher Maraffi at UCSC's Computational Cinematics Studio defines this area of research as “Performatology”1-3

I plan on adopting a cybernetics/systems approach to the research – examining nested and recursive layers of feedback and interaction between performer, audience, interface, software and content. I would also wish to investigate the application of generative, neural and emergent systems in producing happenstance and serendipity.

Acting as an artistic mode of enquiry, performance would be a driving methodology, generating continuous and iterative development of content, delivery and production technologies.

I envisage the research falling into two distinct but interrelated and interdependent modes of enquiry:   
  
a) an Artistic Mode motivated by the desire to create effective and transformative content and   
b) a Technical mode requiring the production of systems and tools to create and deliver the content.

Collaboration with artists and engineers would play a major part in realising the vision of creating a technical platform and associated content.

The research may result in spin-off applications in areas such as gaming, home entertainment, special effects and site specific installations. The protection and exploitation of IP may thus be a further avenue for development, rather than this becoming a major activity I would expect that commercial exploitation be carried out in collaboration with third parties.

**Interest Areas**

**Technical**

Natural Interfaces, assistive technologies – voice, gesture sensing and interpretative interfaces.

Multimedia content generation, production, database representation, delivery, interaction and improvisation.

Appropriation of consumer and Open Source technologies, eg Microsoft Kinect, Unity Games Engine. VVV, PureData.

**Cybernetics and Systems Theory**   
Methodologies for thinking about how systems, people and environments recursively feedback and interact, referencing for instance, the work of Gordon Pask (IA) and Stafford Beer (VSM).

**Artistic**

Art as a Mode of Enquiry – research led by the creation and exhibition of live interactive theatre – creation of content, production and delivery systems with associated real world testing and iterative development.

Illusion and magic – techniques for suspension of disbelief.

Investigation of artists, groups and performers working in interactive and transformative film and performance - eg Rose English, Maya Derren, Punch Drunk, Forkbeard Fantasy and Forced Entertainment.   
  
My inspiration for the creation of content stems from an interest in the late 19th C early 20th C where many artistic and scientific ideas came together, paradigms evolved and gave rise to new modes of thinking. It was the time when space became curved, electricity was seen as a vital magical elixir, the time of the magic lantern and phantasmagoria, theosophy and spiritualism were in vogue with scientists and the general public alike. Key figures include Thomas Edison, Nikola Tesla, William Crookes, Conan Doyle, Charles Hinton, Henri Poincare and Marcel Duchamp.

A performance would be based around the creation of a dynamic storyboard that would enable a performer to create an improvised narrative evoking various interactive scenes inspired by key characters, historical events and ideologies.

**Relevant experience I would bring to the research**

Since my MA in 1995 I have created and exhibited immersive, interactive and mimetic installations using real time 3D graphics coupled with gestural interfaces. I now wish to move away from the installation concept where the viewer is the actor and the audience is limited towards scalable performances with larger audiences and a variety of delivery platforms.

I have many years of experience working as a researcher, designer and artist in interface design, electronics, software programming, multimedia, video and music production.   
Larger scale projects requiring project management have been realised in collaboration with artists, programmers and engineers.  
  
Commercial and business acumen has been gained from the patenting and production of a gesture controlled lighting interface, business mentoring, training programs and working in partnership, as a director and freelance.

Research experience has been gained in academic institutions through working as a lecturer, researcher, honorary and visiting fellow. I have also conducted independent research in areas of personal interest.

I have some experience in performance but would expect to develop this through training and working in collaboration with other performers.

For further information please see attached CV and website mimetics.com.

**References**

1. Maraffi, C and Jhala, A.: Performatology: A Procedural Acting Approach for Interactive Drama in Cinematic Games, UCSC Computational Cinematics Studio, 2011.
2. Maraffi, C.: Roots of Performatology: From Craig’s Uber-Marionette to Performative Embodied Agents, Proceedings of DH (2011)
3. Maraffi, C.: Performatology: An Arts Approach to Designing PEAs for Procedural Character Animation, In: Proc. of Doctoral Consortium, FDG (2011)