**TRESCAK — Aboriginal**

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**The Aboriginal Dreaming Meets Virtual Reality**

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A recent study supports the claim that Aboriginal Australians are the oldest continuous living culture on the planet (*Science*, 2011), their being directly descended from the first people to leave Africa up to 75,000 years ago. Aborigines developed a rich culture involving custom, lore, and value systems based on the sustainability of their spiritual connection, belonging, obligation, and responsibility to care for their land, their people, and their environment (Andrews et al., 2006). Knowledge of this fascinating culture is still strong within Aboriginal communities and has adapted to live in two worlds, which in part is due to the recent radical change in lives of Australian Aborigines, the arrival of British colonists in the 18th century, and consequent European domination of the Australian continent. Since then, the relationship between the original Aboriginal population and more recent arrivals changed from initial curiosity, through mutual aversion, to ignorance.

In recent years, both parties are trying to improve this unfortunate situation by dealing with consequences of historical actions and better understanding each other’s cultures. Various initiatives aim to explore and preserve the oldest surviving culture in the world and to disseminate it to the broader Australian population. These efforts include developing First Peoples perspectives in mainstream institutions. Other resources on this matter include organisational web pages, multimedia, and digital archives.

The Aboriginal connection with the world is hard to capture, since time—particularly the dreaming or dreamtime—is difficult to express in static forms of presentation. This is where interactive workshops and focus groups can have a profound impact on the way content is consumed. Non-interactive multimedia, such as movies and videos, are a viable substitute, but their creation is expensive and, once made, the content becomes static and unchangeable. Carefully crafted web pages can combine both experiences, using multimedia for presentation and also allowing feedback from presenters. Yet web pages usually provide content for already interested parties rather than attracting a new public.

The main attraction of today is modern technology, enhanced with artificial intelligence, interactive multimedia, games, and virtual reality (VR). Currently, the VR hardware price has dropped down to $8 for Google Cardboard and $199 for Samsung VR, becoming available to the wide public. Computer games and virtual reality combine the interactive possibilities of workshops with multimedia. It allows us to capture and simulate the transient nature of First Peoples culture, the dreamtime, and to present these from various perspectives, either as an observer or a direct participant. Therefore, in our project, we focus on creating an immersive computer simulation, using a computer games approach and virtual reality, focusing on various aspects of life and events that have occurred throughout the history of aboriginal tribes living in Australia.

The benefits of our project are threefold:

1. *We seek permission from Aboriginal cultural authorities (i.e., Elders/Traditional Knowledge Keepers) to capture and record Aboriginal perspectives.*

For the purposes of our simulation, we collaborate with Aboriginal Elders to gain perspectives on the philosophical thinking of surviving in two worlds. Aboriginal people have a holistic worldview and belong to the land, viewing the world from a different perspective—for example, in an Aboriginal voice, ‘We belong to the land and have a responsibility to care for that land’. In this project we recorded what life was like in community pre-contact using motion capture technology. We have also recorded various stories of recollections of what life was like back then and, in collaboration with professionals, co-created with Aboriginal Elders educational plots that motivate simulation participants to explore and understand the perspectives of living in two worlds. We aim to record and digitise Aboriginal languages and place them in the situational context. This not only preserves many already disappearing languages but enables interested parties to learn them efficiently in the immersive manner.

Along with this we are continuously co-creating with Aboriginal people, protecting their intellectual property by appropriate attribution with inputs into a large public database of Aboriginal resources, such as texts, images, videos, and references to be used throughout our project and by any other interested party (available at http://gok.scem.uws.edu.au).

2. *We engage and co-create with the Aboriginal community to understand their perspectives by using simulation technology.*

During the development of our simulation, we initially engage the Aboriginal community to help us co-create the content for our simulation. First, we engage and seek permission from Aboriginal Elders to access their intellectual property and record their perspectives, which can subsequently be presented in a simulation. Later, consulting with Elders and in collaboration with Aboriginal artists, we created the 3D assets of the simulation. These assets concern the landscape of the simulation, design of the original population, and wearables and objects they used. Last, we approach youth from various communities to help us co-create the 3D content and writing new stories, allowing others to re-live their experiences in the simulated environment.

3. *Raise appreciation and appropriate attribution for Aboriginal intellectual property within the non-Aboriginal population.*

Using our simulation, participants can learn by playing a game with a carefully crafted educational plot, which incrementally raises their knowledge about the presented topics. During this experience each party is able to re-live the experience from the perspective of the other party, helping in understanding both points of the view. Moreover, using virtual reality and the gaming approach attracts the ‘digital’ generation or ‘social web’ generation, allowing them to perform in collaborative environments, providing for the deep social experience.

In the first phase of this project, we simulate an aspect of Aboriginal culture in the Parramatta basin in the year 1770, pre-contact and before colonisation. The simulation is presented in two formats.

First, an interactive 3D video game takes the participant on a quest to explore the life of a clan in the Parramatta basin. A spiritual mentor and guardian in the form of an Aboriginal Elder gradually introduces the participant to the daily life of aboriginal clans—the knowledge they possessed, rituals they performed, protocols they kept, and their connection to dreamtime. The Elder presents the participant to clan members, who are performing various tasks such as spear making, tool making, painting, fishing, or preparing food. During these interactions, the participant also learns about aboriginal medicine, astronomy, arts, as well as ceremonies, such as the smoking ceremony, thus learning about their spiritual values.

For the purposes of this simulation we have collected information from secondary and primary sources, captured it in text and video, and used motion capture technology to record animations. In close collaboration with Elders, we chose the best form of presentation, preparing the plot of our game (simulation). A problematic issue was the amount of dialogue we planned to use. Here, it was advised to use as little as possible and to depend mostly on non-verbal language and visual inference, so maintaining the historic accuracy. Yet, for the format of our presentation, we decided to use dialogue and written word to communicate with participants, but we are continuing to explore possibilities for meeting this requirement.

Second, we built a virtual reality experience, using Oculus Rift and a historical narrative to build an immersive exhibit of aboriginal life. This part of the experience no longer depends on written texts and graphical user interfaces; it fully relies on virtual interactions and dialogue. Due to various responses from our test subjects, which varied from very pleasant experiences to slight motion sickness to vertigo, we have limited the duration of the VR experience to five minutes. We are working to extend this time, better understanding the problems related to the VR simulations. Yet we already acknowledged that the biggest drawback of VR is that it will not suit everyone, and therefore we plan to maintain both 3D and VR experiences.

In the consecutive phases we plan to extend our simulation to re-live history through Aboriginal perspectives, from the first contact up until modern times. The goal of this simulation is to put into perspective views from both parties, to understand them and learn from them. Apart from simulating historical events, co-creating the content will open possibilities to include many different life stories and allow for interpretation of historical contexts.

The demo of the simulation can be found at https://www.youtube.com/watch?v=aT\_mwlobwK8.

**References**

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