Reimagining *Perumthachan's* Pond: Information and Experience in Virtual Reality Narratives

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Abstract

This paper discusses a visual art project, which narrated the popular legend of *Perumthachan's* temple pond through the new medium of virtual reality (VR). The paper primarily focuses on the design process that was adopted to render one of *Perumthachan's* mythical architectural quirks — a shape- morphing temple pond mentioned in *Kottarathil Shankunni's Aitheehyamala* — as an immersive VR experience. This VR experience was first presented to a group of school children at a lower primary school in the village of *Uliyannoor* near the *Uliyannoor Siva* temple, the place where it is believed that *Perumthachan* was adopted and raised by a family of craftsmen. In this manner, the project explored the possibility of refiguring a mythical space as a three-dimensional immersive virtual reality simulation. Such an adaptation produces a unique experience of a mediated narrative wherein auditory, visual and embodied modes of reception generate the phenomenon of "presence." The paper illustrates this by detailing how a feeling of presence can be evoked by incorporating "information" and "experience" into the design of a VR simulation. This means that the factual parts of a phenomenon denoting the informational aspect, could be combined with its emotional or affective parts denoting the experiential aspect, to enable viewers/participants to engage with the VR simulation both cognitively and emotionally, which generates the unique feeling of presence.

Keywords: Information, Experience, Virtual Reality, Narrative.

Introduction

With the advent of technologies such as virtual, augmented and mixed reality, new ways of narration and storytelling are emerging. While traditional forms of visual media such as television and film confine the viewers to a two-dimensional visual frame, virtual, augmented and mixed reality enable total or partial immersion in a media simulation. While VR temporarily suspends the experience of the real life world by supplanting it with a virtual world and enabling the viewers/participants to direct their gaze in 360 degrees, augmented and mixed reality make possible the simultaneous experience of real and simulated worlds, each one complementing the other. These new media interactions are accessible through the support of wearable and handheld devices such as head mounted display units, shutter glasses, mobile

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phones and hand controllers.

These disruptive developments provide scope for new narrative grammars and theoretical frameworks (Aylett & Louchart, 2003). This paper summarizes the details of a visual art project which rendered the popular legend of *Perumthachan's* temple pond as a virtual reality narrative. The VR narrative could be experienced by wearing a head mounted display unit which tracks the head position of the viewer/participant. This affordance known as "three degrees of freedom" enables the viewer/participant to look in any direction by remaining on a fixed point. This also gives rise to user dynamic viewpoint, a defining feature of VR wherein the display is updated according to the specific viewpoint of the user/participant (Brooks, 1999). In this manner, virtual reality technology, through a computer mediated environment, gives the viewer/participant a feeling of presence (Biocca, 1992). It engages the sense of vision, hearing, kinematic and proprioceptory experiences(Walsh & Pawlowski, 2002). All these facets engender a new mode of narrative reception through a combination of information, experience and the phenomenon of presence.

The Myth

Perumthachan, one of the twelve abandoned children of *Vararuchi*, was adopted by a family of craftsmen who belonged to the village of *Uliyannoor. Perumthachan* grew up to become a legendary carpenter and an architect and it was believed that he possessed supernatural abilities. From impressive temple complexes to puckish wired dolls which spat jets of water on unsuspecting passer-by walking over river crossings, the creations attributed to *Perumthachan* are awe-inspiring and amusing. One such creation is the temple pond known as *Paankulam.* Trustees of the *Uliyannoor Mahadeva* temple once commissioned *Perumthachan* to dig a ceremonial tank, about the shape of which they were divided in opinion. Some wanted a circle, a few others demanded a perfect square, and a different group wanted yet another shape. Having failed to reach a consensus, *Perumthachan* settled the issue by offering to a dig a pond which would assume all the different shapes desired by the onlookers as they looked at it from their respective positions (Shankunni, 2004).

Project Overview

With the support of an arts practice grant given by India Foundation for the Arts, a VR recreation of *Perumthachan's* mythical pond was created. By wearing a head mounted display unit (Oculus Go), the viewers/participants

obtained an embodied experience of the changing shapes of the pond. The VR experience was first showcased in the very village of *Uliyannoor*, to the class V students of the government lower primary school near the *Uliynaoor Mahadeva* Temple. The VR simulation was designed by Firefly Creative Studios in Hyderabad. The final simulation was rendered in 4k resolution at 60 frames per second in both mono and stereoscopic formats.

Narrative Structure

A three-act structure was formulated to present the VR adaptation of the mythical pond, to the target audience:

a) **Prologue:** In this act set in a classroom, a storyteller narrates the enchanting legend of *Perumthachan's* temple pond to a group of children at the *Uliyannoor* lower primary school. A sense of wonder is evoked among the students as the story unfolds. The storyteller finally asks if the students wished to see this magical pond. He then offers to take them there.

b) **Simulation of the pond:** After the prologue, the scene transitions to the simulated environment of the pond. An architectural design was speculated, wherein the pond assumed three shapes when seen from three different elevations and directions. At the lowest level, the pond took on a circular shape. At the mid-level, the pond assumed the shape of a square. Finally, from the highest vantage point, the pond looked octagonal. Depending on the elevation and the direction of view, the pond assumed one of these shapes.

c) **Epilogue:** The epilogue follows the VR simulation of the pond, where the storyteller gleefully asks the students about their experience. The narrative is concluded with his affirmation: "all stories bear a grain of truth."

d) **End Credits:** During the end credits, the camera pedestals upwards along a fixed vertical axis and the viewers/participants obtain a bird's eye view of the pond, wherein all three shapes at the different levels become visible.

The narrative combines live action footage and computer-generated modelled environments. While the prologue and the epilogue were shot with a VR camera (Ricoh Theta V 4K), the environment of the pond and the end credits were digitally designed using 3D modelling software (Blender/Nuke) and game engines (Unreal Engine) that render modelled environments for VR. The

live action and modelled environments were edited (Adobe Premiere Pro CC) to create the final VR narrative.

Presence, Information and Experience in Virtual Reality Narratives

A unique aspect of virtual reality simulations is that they induce a phenomenon called "presence." "Presence" denotes a feeling of "being there" or in other words a heightened sense of immersion in a simulated world. This is a state available to a viewer/participant exclusively through the medium of virtual reality. This feeling of being there is also referred to as place illusion (PI) where the participant feels that he or she is inhabiting the simulated environment (Slater & Sanchez- Vives, 2016).

Virtual reality induces presence through other illusions as well such as the "plausibility illusion" (Psi). The feeling of presence is enhanced when the VR simulation generates plausibility illusion. As Slater and Sanchez-Vives (2016) describe:

Place illusion can occur in a static environment where nothing happens – just looking around a stereo-displayed scenario, for example, where nothing is changing. When there are events in the environment, events that respond to you, that correlate with your actions, and refer to you personally, then provided that the environment is sufficiently credible (i.e., meets the expectations of how objects and people are expected to behave in the type of setting depicted), this will give rise to a further and independent illusion that we refer to as "Plausibility" (Psi) that the events are really happening. Again, this is an illusion in spite of the sure knowledge that nothing real is happening.

Both place and plausibility illusions were achieved in the VR narrative of *Perumthachan's* mythical pond. The simulation was modelled based on photographic references of the ponds of Kerala. These photos were gathered after extensive field visits to various temple ponds in Kerala. As in a virtual heritage environment, the simulation of the mythical pond had to combine precise architectural details and affective dimensions.

Virtual heritage projects aim to simultaneously educate and entertain their audiences through immersion, but emotion without context achieves little. Virtual heritage environments demand integrity in information so that audiences do not confuse speculation with fact. Combining affect with information design can create experiences and meanings for an audience that are both educational and emotionally satisfying. (Kruiff, 2012)

While information design collates and presents precise factual details,

providing the appropriate affective context comes under the purview of experience design. The design process adopted to recreate the mythical pond incorporated both information and experience into the VR simulation. Visual details such as the texture of laterite, vegetation, proportions, scale and acoustics were designed based on photographic and multimedia information culled out from site visits to existing ponds. This constituted the "information layer" in the simulation enabling the generation of place and plausibility illusion.

Relying on the "information layer" alone would have rendered the experience of the myth ineffective. A myth falls into a liminal space between reality and fiction. Virtual reality simulations can also be placed at the ontological intersection of the "real" and the "fictional." VR therefore is also an unreality simulator (Slater & Sanchez-Vives, 2016)! Hence the affective layer — constituted by elements such as the narrative context (the prologue and the epilogue), staging and camera moves (dolly and pedestal moves) which build intrigue and offer the viewers/participants fantastic views of the mythical pond, visual embellishments such as lighting and a lively ambience (birds, people, falling flower petals and milkweed follicles) music and voice-overs — completes the VR narration of the myth.

In this manner, presence could be induced by blending informational and experiential dimensions. This makes VR a stimulating storytelling modality, wherein the narrative experience is greatly enhanced through illusions of "place, plausibility and embodiment" (Slater & Sanchez-Vives, 2016).

Conclusion

This paper summarizes the details of a visual art project which adapted a regional myth to the new medium of virtual reality. By demonstrating how information and experience could be blended to evoke a sense of presence, the paper provides scope for speculations on how stories could be narrated through this emerging medium. Such speculations could pave the way for artists and theoreticians to work towards a grammar of VR storytelling through creative praxis and critical enquiry.

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