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Ritual Fire at Virtual Stonehenge

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This poster paper presents the creation and testing of ritual fires at a virtual Stonehenge site. This interdisciplinary research project drew together expertise from subject areas including 3D modelling, animation, digital video, music technology and ethnography to begin to reconstruct and visualise the stone circle and Stonehenge site using traditional archive data and contemporary digital tools and technologies. The researchers are providing collaborative evidence of their methods to demonstrate how virtual models can be used to see, think, interpret and analyse monuments, ritual sites and their uses. The animation accompanying this poster can be viewed on youtube.com which demonstrates how a phenomenological and experiential exploration of a site, might provide archaeologists, historians and heritage visitors with non-destructive interactive experiences and visualisation of ritual activity and its events.

The main focus of this poster paper is to show ongoing research on adding physical environmental effects in particular fire to begin to re-construct representations of ritual practice at Stonehenge. The researchers ask what can be learned by researchers being involved in virtual reconstructions, what insights can be gained by exploring a reconstructed site virtually. The research investigates the advantages and difficulties of an interdisciplinary approach for the project being carried out within a creative arts context rather than within archaeology. The importance of the collaborative relationships between researchers from Art, 3D Design, and Music technology became increasingly apparent as the project evolves accumulating the data which has begun to situates the discussion within a theoretical framework.

The research project team has explored multimedia experimental archaeology in a 21st century context. The team includes Dr. Ertu Unver, Andrew Taylor from the 3D digital research group and Dr. Rupert Till a music technologist from School of Music, Humanities & Media to create a accurate 3D model of the Stonehenge stone zone for anthropological and virtual archaeological studies. Previous research in this area by Taylor focused on investigating prehistoric ritual performances and experiences through acoustic modeling and Taylor & Unver published their 3D environments which included work with 3D scan data, modelling and rendering. Through the collaboration a 3D model of Stonehenge has become more archaeologically accurate through use of digital tools such as LIDAR (Light Image Detection and Ranging) data, virtual physics systems adding sun, wind, rain, and the introduction of virtual human characters. These developments in the project are enabling a phenomenological, immersive, archaeological, educational experience that can encourage viewers to explore with their emotions and bodies, with their aesthetic senses as well as their brains.

In this phase of the project the research team have constructed an extension of previous depictions of art, that explores sacred ritual practices throughout history of the site. This work seeks whether, virtual experiences and models are as able to transport the viewer around a space as paintings and drawings, and see them more readily believable as a physical interpretation. A painting can be seen as an artist’s impression, a rendered 3D computer graphics model may well be seen as more scientific approach although the team believes 3D modelling and animation is experienced by the user re-imagining experiential spaces or images. The work theorises that virtual models may well be seen as more scientific approach although the team believes 3D modelling and animation is expressed by artists re-imagining experiential spaces. This work theorises that the origins of ceremony and ritual are inseparably linked to art. There is a great deal of interest in 3D virtual reconstruction of archaeological site for education and promotion to allow the public to interact with and explore virtual reconstruction of cultural heritage sites. The research has explored the use of digital data and tools such as LIDAR (Light Image Detection and Ranging) data, virtual physics systems adding sun, wind, rain and ire effects. These developments in the project are making it possible to create an immersive fire effect used in in the virtual reconstruction of chemical and physical reactions in the environment. These developments in the project are enabling a phenomenological, immersive, archaeological, educational experience that can encourage viewers to explore with their emotions and bodies, with their aesthetic senses as well as their brains.

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