Temporal loci and mixed reality: an experiment in diversifying visualizations of time and space

Celeste Tường Vy Sharpe
csharpe@carleton.edu
Carleton College, United States of America

Sarah Calhoun
scalhoun@carleton.edu
Carleton College, United States of America

Andrew Wilson
awilson@carleton.edu
Carleton College, United States of America

This poster explores ways to use augmented reality to represent complex notions of temporality. Calls for diversifying the digital humanities by scholars like Alan Liu, Amy Earhart, Jessica M. Johnson, and Adeline Koh have called attention to the ways in which digital humanities inquiry and tools often struggle to represent diverse artifacts, cultures, and experiences. Spatial inquiry is one area where scholars are critically engaging and presenting layered analyses of space. Temporality, on the other hand, has received significantly less attention. Notions of time vary widely across cultures. Temporal metadata in digital humanities projects such as timelines or visualizations, however, is frequently constrained by the narrow, linear Gregorian conception of time crystallized by the International Organization for Standardization standard 8601 (ISO 8601).

Using Keith Basso's description of temporal loci of events from his 1996 book *Wisdom Sits in Places*, we can see how myth ("in the beginning"; atemporal) and saga ("modern times"; time described by ISO 8601) frequently overlap and intertwine with each other (50). For instance, in the Thai Buddhist temple paintings that Sandra Cate describes in her 2003 book *Making Merit, Making Art* ("The Defeat of Mara and The Enlightenment (Panya)," plate 10) we can see the convergence of multiple different conceptions of time. One striking piece of a mural captures a moment in time after the recently enlightened Buddha defeats the demon Mara, and a cleansing flood washes away the Mona Lisa and a space shuttle. Attempting to fit the complicated relationships displayed in this image into a simple Dublin Core temporal coverage field would be quite difficult, if not impossible.

We identify two main problems that this initial experiment will address. The first is the issue of visualizing multiple temporalities. Our motivating questions are: what are the visual and spatial relationships between the chronological story of the Buddha defeating Mara given how some Buddhists believe that the Buddha is personal and eternal and always present throughout time? How is that expressed in the mural through a wide range of artistic styles and historical references? These questions will be answered through the course of our research.

The second problem is a more practical question of how to use augmented reality to further research and teaching of these complex cultural concepts when both the visual and technical resources are limited. We intend to use the extant low-res photographs available of the "Defeat of Mara" temple mural and Vuforia to create a cross-platform experience of the religious expression. This will allow users to see and select individual elements in the mural (such as the Mona Lisa or the spaceship) and engage with the different ways one can order and make meaning out of the varied chronologies and temporal references. Vuforia allows us to use an existing framework that has the benefit of being accessible on multiple platforms. We believe this is necessary for facilitating the adoption of augmented reality for classroom and preliminary research uses.

Our poster will outline our theoretical framework, detail our development process using the augmented reality framework Vuforia, and provide possible avenues for further lines of inquiry and applications for temporal visualizations. We'll include static images of the AR experience, as well as ways to access our project remotely.