

Critical Response 7-Digital Tools

The new technologies of the digital age have the potential to enhance archaeological processes from data collection, to interpretation, to presentation. This week's readings explore the both the values and limitations of current experimentations with digital heritage and provide recommendations for more effective use of digital tools. Each author's conclusions present new insights, which are directly applicable to our own fieldwork, publication, and presentation for the JBH project.

First, Alonzo C. Addison reveals a number of common problems in the process of collecting, recording, and storing archaeological that severely limit the potential of technological tools. The growth in 3D documentation tools have reduced ease and decreased cost of collecting huge amounts of varied data at new levels of detail and precision. However, the value in terms of interpreted knowledge gained from archaeological data has been gravely limited by lack of coordination and sharing. Addison emphasizes issues of data quantity, reliability, and longevity as the main limiting factors. Addison first criticizes the tendency to favor data quantity over quality and to favor attractive images over accuracy – a result of a system in which attractive presentations and papers in the immediate future is more important than the the longterm value of accurate data. Similarly, according to Addison, the rush to presentation has limited the time available for careful mark-up of data in the field and has introduced more errors into the data. Without reliable data and proper documentation, future researchers become reluctant to build upon past work. The problem of data longevity also stems from difficulties in translating data between different digital formats and from concerns with overly protective copyright. New projects often waste much time and resources on duplicative efforts, returning to sites to re-measure, re-photograph, and re-record.

To address these problems, Addison provides a number of useful recommendations. Addison advocates an increased emphasis on careful documentation and the accessibility of data.

Researchers must be aware of the value of sharing data and building on each other's work. I would add further that academic institutions must adapt as well to remove the pressures to rush toward presentation and to present purely “original” work and instead reward derivative works and longterm projects. With the move toward sharing, researchers should dedicate more time and effort to the careful mark-up of data so that it can be clearly understood by future researchers. Next, the barriers to sharing must be eliminated. Addison recommends that archaeologists apply the idea of “copyleft” to mitigate the constraints of copyright and allow for increased collaboration; “copyleft” is an alternative legal agreement in the software world which stipulates that the work is free to all and that all future derivate works and versions must also remain free. To mitigate the problems of formatting, Addison suggests the use of metadata that functions as common guidelines. Each document added to the relational database of an online portal would be tagged with standard identifying metadata. In these ways, Addison hopes to improve the initial processes of collecting, recording, and storing data.

The presentation stage also offers opportunities for the use of new digital mediums. Maria Roussou supports the use of digital tools to create a “virtual heritage experiences” while recognizing the challenges and limitations. Roussou advocates different methods of representation depending on the target audience and purpose. Roussou recognizes a conflict in the representation of virtual heritage environments between accuracy and artistic expression. While technologists and artists tend to be less concerned with accuracy and more concerned with mature, meaningful form, computer graphics tend to be more concerned with accuracy, keeping in mind an ideal of total immersion of the viewer in an ultimate simulated realistic experience. According to Roussou's recommendations, the conflict should be resolved differently depending on whether the visualization is intended for archaeologists or for the general public. The visualization for archaeologists should tend toward realism and contain as few assumptions as possible in order to better serve the purpose of assisting archaeologists with the process of interpretation and the process of resolving controversies regarding interpretation. In contrast, representation for the general public

should aim to bring the past alive and fulfill pedagogical purposes. To this end, Roussou supports the use of methods borrowed from the entertainment industry – methods designed to spark the visitor's interest, empathy, and imagination. Unlike in the entertainment world, the virtual heritage environment must avoid straying into fiction. This poses challenges, especially regarding the use of characters, given the difficulties in visualizing human characters in comparison to architecture and material culture. The desire for simulated experience also poses challenges in moving beyond the visual toward aural and tactile experiences. While Roussou recognizes these challenges, she still values the use of a clear, cohesive narrative, which combines knowledge and spectacle, to capture the interest and imaginations of as many visitors as possible. Keeping in mind the critique of last week's readings, I would argue that a balance must be struck that takes advantage of virtual storytelling methods, while providing room for the visualization of alternative narratives as well.

Hannah Lewi explores another potential digital resource designed for educational purposes: the virtual museum. Hannah Lewi argues that the virtual museum is valuable not as a replacement to the physical museum but as a supplement. In general, the virtual museum is by definition valuable as a tool for education since its mere definition as virtual rather than real presupposes its focus on the educational information derived from objects rather than the objects themselves. “Whereas real collections operate to a greater or lesser extent on the visceral thrill in the presence of the original, with the digital world the information potential of objects predominate” (Cameron 2001:2) However, at the same time, Lewi recognizes that the virtual museum's distance from the real objects also guarantees its role as a supplemental tool, due to its inability to help endow a tangible sense of connection to historic places and their conservation.

While this represents an inevitable limitation to the virtual museum, Lewi also advocates purposefully constraining navigational possibilities. While the digital medium allows for new levels of flexibility in creating loose sequences and non-linear networks, according to Lewi, “too much freedom left the user lost...while too many restrictions defeated the hopes of an alternative mode of representation to the conventional history text” (Lewi 268). A fine balance must be

reached, which both capitalizes on the ability of the digital medium to allow additional thematic links and networks without abandoning the guidance of a linear narrative. Lewi supports the approach of the Western Australian architectural heritage virtual museum, an approach which applies the organizational features derived from the application of the museum metaphor while combining in digital techniques such as hyperlinks. Thus, the museum metaphor translates the traditional linear history narrative into spatial connections via virtual foyers, galleries, and drawers while the hyperlinks indicating relevant thematic relationships provide a less linear but still constrained sequence.

The only question that remains lingering is whether the application of the museum metaphor offers too many gimmicks and whether a simpler tool would be better at honing in on important information. “Do the contemporary graphics and dense graphical interface overshadow or distract users from the context of the history and images?” Lewi suggests that the answer is no, instead highlighting a number of ways the graphics allow for more visually rich and engaging evocation of historical architecture. The ability to present a great mass of maps, architectural drawings, contemporary and archival photographs and to elaborate artistic representations of the architecture in the “background” images as you navigate through the museum enhances the viewer's ability to engage with the visual content – a feature traditionally limited by textual historical narratives and physical displays.

Taken together, the conclusions of these authors offer valuable lessons applicable to our project at the JBH site. First, Addison's emphasis on thorough documentation should induce us to reflect on our notes on our excavation forms and add more clarifying notations if we suspect ambiguity that could be interpreted differently by someone who was not present during the excavation of our unit. If we decide to digitalize any of our data, we must carefully consider our choice of digital formatting. For example, even if the final site report is presented as a single cohesive pdf file, it would probably be a good idea to include links to our class wiki, where files in other formats would be available for download. This is especially important if we include any

tables, since its a huge challenge to translate data from the table images in a pdf file to a spreadsheet or database file – a necessary step for any future researcher who may want to conduct quantitative analysis. Similarly, though my section of the final site report (about my efforts to georeference maps in GIS) will most likely include a few snapshot images, it will be important to make the original input and output files available for download.

While these efforts will help research in future years, it is also important, as Roussou suggests, for our final presentation materials to target an audience from the general public to garner their interest in Providence and its heritage. The virtual landscape tour has the potential to play that role. I personally have very little with multimedia technology, but I can imagine the use of multimedia and graphics programs to create a fun tour that gives the viewer the illusion of interactivity – maybe pretending to transport the viewer back and forth between the time period of our excavations and the time periods of our finds.

Finally, our wiki should probably be expanded to function in a similar way to the Green Farms archaeological project wiki. As Lewi recommends, the wiki should balance the need for linear narratives with non-linear thematic networks, through the use of hyperlinks, in a way the site report cannot. The wiki should provide two sets narratives: one of our week-by-week excavations and one of the history of the site. The narrative of our excavations could easily hyperlink to the relevant part in the historical narrative and to related points on our isolated page about our finds. Meanwhile, ideally, it would be wonderful if the page about our finds offered a way to visualize the artifacts in different groupings and sequences that represent layers and locations of discovery and a historical chronology of the times of origins and times deposited. Our object analyses would also be available there for anyone interested in reading about any single object in particular. Thus, these represent some ideas in how to go beyond the traditional site report and take advantage of the new mediums available in this digital age.