Using digital technologies to create meaningful social and cultural experiences at archaeological sites

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As with museums, people typically visit archaeological sites in social groups. These visitors might join together as part of organised tours or they might make their own way to site with family and friends. At a rural destination like the UNESCO-designated Neolithic site of Çatalhöyük, independent visitors are relatively rare: people come from around the world (but predominantly from within Turkey itself) accompanied by their schoolmates, their tour groups, their partners, children or other known travelling companions. In this way, their visits can be defined as collaborative exercises, almost always realised via some degree of interpersonal cooperation and conversation.

Once on site, however, the extent to which such collaboration continues in a meaningful way is a matter for debate. How do visitors relate to one another while touring the archaeological record? How do they share their learnings amongst themselves and how does this sharing enhance or detract from the material culture in front of them? How do they use locations like Çatalhöyük – recognised as universally-relevant historical sites – to foster precisely what these sites are meant to foster: that is, real cultural understanding both about people from the past and between people in the present (including fellow tourists)? In other words, how do we ensure that the visitor experience at archaeological sites capitalises on the group dynamic, using the various group members to stimulate collectively thinking, discussion and reflection on the material record, and to create relationships between people in the moment – whilst touring the site itself?

Social interaction between visitors to museums has long been recognised as a critical component of the museological encounter. Conversation, in particular, has been highlighted as important to visitor experience in museums, so much so that recent research suggests it might be used as a metric for successful engagement. To facilitate such interaction, computational technologies are now increasingly intertwined into the normal visitor tour. These technologies range from digital displays that enable delivery of information to multiple people at once – including interaction between group members and collaborative planning and replanning of visits – to devices which send alerts to individuals to generate conversation between them (and others) about the contents of the museum.

These initiatives are significant because such technologies – mobile devices in particular – are often understood to be incompatible with face-to-face engagements between people. Mobile phones and tablets, for example, have regularly been accused of privileging the personalised experience above the group experience and hindering engagement between visitors overall. The paraphernalia

Screenshot from a video recording of two student volunteers testing a collaborative, mobile-delivered digital storytelling experience at Çatalhöyük. Funding for this research has been provided by the British Institute at Ankara (video footage by Vassilis Kourtis)

associated with mobiles, including headphones used to deliver content to improve the visitor-exhibit relationship, can further impede human-to-human connectivity; for instance, they can literally deafen visitors to the voices of their companions. The devices' screens themselves can also get in the way, distracting visitors from the items on display and focusing their gaze upon the machine instead of on the museum itself. Efforts to use mobile devices to post to social media sites in order to create 'conversations' about the exhibits with audiences outside of the venue can be similarly problematic. The likelihood of generating real and sustained dialogue through such posts is debatable, making the exercise a passive one at best.

Despite these challenges with mobile technologies, many individuals and groups, both at museums and at archaeological sites, have continued to experiment with their possibilities. As reported in last year's *Heritage Turkey*, the Visualisation Team at Çatalhöyük is one such group. Our experiments have been motivated by seven years of qualitative and quantitative data collection about visitor experience, which testify to the site's complicated nature and resultant unintelligibility to many individuals. At Çatalhöyük, the archaeology is exposed, relatively uniform in colour and difficult to differentiate. Visitors cannot choose their own path through the site, cannot get close to any of the artefacts (which are transferred to museum stores upon excavation) and cannot experience the main attraction – the excavated buildings – from within the buildings themselves (only from a ramp overlooking them and via a generic replica house). Yet visitors also tend to arrive on site with mobile phones in hand and with knowledge derived from researching Çatalhöyük before arrival.

For these reasons, in 2014, funded by the British Institute at Ankara, we collaborated with the international CHESS Project (Cultural Heritage Experiences through Socio-personal interactions and Storytelling; http://chessexperience.eu/) to produce mobile-delivered

digital stories about Çatalhöyük for visiting audiences. These stories aimed to enrich the on-site experience by connecting the physical remains of an excavated home (Building 52) with the 'biographies' of two hypothetical individuals associated with that home: Abla, a Neolithic woman who once lived in the building, and Archie, a modern-day archaeologist who excavated it. Using CHESS's existing digital platform, we authored Archie and Abla's narratives in collaboration with the Çatalhöyük Research Project, integrated them into the platform and added further functionality to personalise and offer choice within the user experience. After preliminary evaluations of this experience with a series of users, we concluded that what continued to be most obviously missing was (1) interaction between visitors themselves and (2) sufficient aids to evoke the site properly as a once lived-in and fully built environment.

Accordingly, in 2015 with generous Institute funding, we returned to Çatalhöyük with a larger team comprised of members of CHESS (Akrivi Katifori, Vassilis Kourtis and Maria Vayanou of the University of Athens), plus Laia Pujol of LEAP (LEarning of Archaeology through Presence; https://www.upf.edu/leap/) and Narcís Parés of Universitat Pompeu Fabra, Barcelona. We sought to extend our previous work by restructuring it to account for not only the feedback from our users but also the weaknesses of many mobile apps. In other words, we redesigned Abla and Archie's stories in an effort to promote conversation and collaboration between group members on site. The redesign entailed several rounds of brainstorming and group critique of content, followed by populating the CHESS mobile platform with a variety of interactive points of contact designed to facilitate collaborative learning in a two-person visitor group.

These interactive experiences between visitors took a variety of forms. Firstly, we experimented with narrative variation – the practice of supplying different information to each user through their respective mobile devices in order to encourage conversation between them to compile the complete story of Building 52. At multiple points, the digital narrative would split such that one visitor would exclusively follow Archie's story, while the other followed Abla's. A task or question would then be posed to each visitor which could only be resolved by mutual dialogue.

Secondly, we inserted references to current human behaviours, including personal practices and reflections, within the narrative. Visitors were then prompted to share their thoughts with one another before selecting to move along in the storyline. Thirdly, we attempted to integrate playful, comic points of interactivity between users; in particular, by asking visitors to choose objects displayed on the mobile device (and excavated from Building 52) for their companion. The intent here was to nurture not just knowledge sharing, but laughter, fun, rapport and camaraderie amongst the visiting pair, which have been demonstrated as integral components of successful visiting experiences.

Finally, we experimented with the notion of creating a 'shared screen' between visitors, wherein they were prompted to position their two mobile devices adjacent to one another, each displaying one half of a specific image. In so doing, visitors were then able to see the full picture and from there collaboratively explore the digital content related to Building 52 (in front of them on site).

We subsequently conducted a handful of preliminary evaluations with non-specialist and specialist visitors, and are now in the process of analysing the resulting data. We are already aware, however, that in the future we would like to stretch the interactive experience between visitors much further – not only in terms of types of interactions, but so too in terms of scale: interactions between triads and even larger groups, as well as interactions between strangers and diverse visiting parties that happen to be on site simultaneously.

Ours is amongst the first experiments with social engagement via mobile storytelling applications at remote, complex archaeological sites. Our early findings suggest that such applications have real potential to cultivate meaningful person-to-person and person-to-material culture interactions in situ between individuals using their own independent pieces of handheld technology. Importantly, though, our work also hints at the promise of these apps to impact human understanding more profoundly, generating active cross-cultural, cross-generational and cross-site reflection and critique in the moment through shared experience.

Screenshot of a playful interactive exercise in the narrative