# ENGAGING VISITORS OF ARCHAEOLOGICAL SITES THROUGH "EMOTIVE" STORYTELLING EXPERIENCES: A PILOT AT THE ANCIENT AGORA OF ATHENS

## 1. Introduction

Storytelling applies to nearly everything we do. Everybody uses stories, from educators to marketers and from politicians to journalists (Tsene *et al*. 2014), to inform, persuade, entertain, motivate or inspire. The cultural heritage sector also uses storytelling, yet it tends to be used narrowly, as a method to communicate to the public the findings and research conducted by the domain experts of a cultural site or collection. Museums, for instance, "tell stories" through the informed selection and meaningful display of artefacts and the use of explanatory visual and narrative motifs in their exhibits and in the spaces between exhibits (Roussou 2004). This interpretative process is at the heart of the museum as an unassailable institutional authority (Phillips 1997; Walsh 1997). Nevertheless, storytelling as applied by museums has for the most part been limited to descriptive, scholarly prose. The meaning of many cultural heritage collections and sites is typically communicated *in situ* in didactic fashion.

We believe that museums raise significant new challenges for interactive storytelling research, in how they support forms of story that can help visitors to engage with the cultural content, whether physical (on-site visits) or digital (online). In this paper, we describe the creation of a prototype mobile storytelling experience that attempts to explore a more emotive kind of storytelling in cultural contexts, specifically archeological sites. Research that attempts to push on the boundaries of narrative constructs has begun to recognise the promise of evocative digital experiences for heritage locations, including fragmentary sites.

## 2. Digital storytelling in cultural contexts

The adoption of a more explicit storytelling approach to exhibition design is considered to contribute to making collections even more accessible and engaging for different kinds of audiences: it creates a relaxed environment that raises self-confidence (Johnsson 2006); establishes a universal way of communication; and because it invites the audience to fill in the blanks with their own experiences, it helps to set emotional connections, which are deeper than intellectual understanding (Bedford 2001; Springer *et al*. 2004).

Digital storytelling for cultural applications draws from the rich history of research in interactive storytelling for digital media. In general terms, previous

research can be divided into plot based approaches and character-based systems. Plot based approaches to interactive storytelling are primarily concerned with the importance of narrative structure, and their main focus is that of ensuring that a certain level of coherence and dramatic tension is provided in an interactive story, much as it is in more traditional storytelling media, e.g. Universe (LEBOWITZ 1984), Agent Stories (BROOKS 1996). Character-based systems (CAVAZZA, CHARLES, MEAD 2002; BALET *et al.* 2008), provide a narrative with structural elements that are supposed to emerge (MATEAS, STERN 2005; KRIEGEL, AYLETT 2008) from characters' personalities and functions within the story rather than being imposed by a pre-authored plot.

While such approaches have been successfully applied to games, films, multimedia and other similar forms of interactive digital media, their potential to enhance storytelling in museums is less developed. The online GIZA3D[1] Project offers a storytelling structure to its multimedia-rich 3D world. However, the stories are linear, non-interactive narratives, while the 3D graphics aesthetics use a "cartoonish" representational quality, a shortcoming that can be problematic for interpretation in cultural and educational contexts.

Several on-site digital storytelling approaches use mobile devices to engage the visitor in more interactive or adaptive experiences. The PEACH Project automatically produced video clips on the visitor's device and used a life-like character as a presenter (DAMIANO *et al.* 2008). In Ghosts in the Garden (POOLE 2015), present-day visitors, using a special "Georgian Listening Device", roamed around a historical garden in Bath, UK to discover the "ghosts" of characters based on real people from the Gardens' heyday. The CHESS Project, an EU-funded research project that ran between 2011 and 2014, explored the development of stories that were designed to be plot-based yet interactive, personalized and adaptive (PUJOL *et al.* 2013; VAYANOU *et al.* 2014). For example, in one of the CHESS stories implemented for the Acropolis Museum in Athens, the character, Theseus, asks the visitor to collect virtual "powers" (from exhibits in the museum's Archaic gallery) in order to help him confront King Minos' soldiers after exiting the labyrinth. In another story for the same museum, the character, Melesso, talks about her life, inspired by the exhibits in the gallery. The story's ending culminates with the viewing of the real object, an offering that the once real Melesso made to the goddess Athena. The aim of these story plots, as with other such projects, was to motivate visitors in finding meaningful and personal connections with the objects (ALELIS, BOBROWICZ, ANG 2013). These examples require the visitor's physical presence on the site, and are for the most part single-user. Narrative variations have been investigated by CALLAWAY, STOCK, DEKOVEN (2014) in

---

[1] GIZA3D, Dassault Systèmes, http://giza3d.3ds.com/en-stories.html (accessed: 01/08/2017).

the context of a drama-based mobile museum storytelling guide in order to promote interaction between users.

In the following sections, we explore key elements in shaping a visitor's experience as observed during the evaluation of the CHESS prototypes, and we describe the design and prototype development of an interactive mobile storytelling experience for visitors of the archeological site of the Ancient Agora in Athens, Greece.

## 3. What makes up an engaging visitor experience?

Schell (2005) defines a successful entertainment experience as such when the right combination of a visitor's levels of interest (the desire and will which enables us to focus attention), empathy (the ability to put one's self in the place of another), and imagination (the ability to fantasize alternate realities), is triggered and maintained throughout the experience (Schell 2005). Storytelling is undoubtedly the best vehicle to trigger these abilities in the visitor experiencing a digital environment of cultural content.

In our attempt to answer the question "How do we engage an audience?" we performed a series of studies with the mobile prototypes during the CHESS project's evaluation activities. The studies showed that various different factors comprise an effective and engaging visitor experience, including: storytelling; interactivity; activities that helped bridge real space and objects with the digital content; impressive technologies such as augmented reality; and support for more social experiences, i.e. that can be shared between visitors on-site and/ or before or after the visit (Katifori *et al.* 2016).

Visitors were particularly enthusiastic about the story structuring of the experience, especially instances of storytelling that were humorous, that provoked curiosity or that revealed unexpected elements of the content. One of the key observations from CHESS was that visitors wanted the stories to be emotionally resonant. Storytelling can be a powerful tool but not all stories are effective in communicating the messages they set out to convey and to grasp and hold their audience's attention. «Why do some stories make us dream while others make us drowsy?» asks Goodman (2015), who then goes on to argue that «the secret ingredient behind all successful stories is a four-letter word – and no, it's not plot. While narrative structure is undoubtedly important, the true test of any story is how it makes your audience feel». Storytelling becomes an even more powerful tool when it taps into our emotions.

Motivated by this premise, the EU-funded H2020 research project titled EMOTIVE[2], which kicked-off in November 2016 and will run for 3 years, aims at developing methods and tools that can support the cultural and

creative industries in designing and developing digital experiences which draw on the power of "emotive storytelling". Specifically, EMOTIVE proposes to research and design:

– a plot-based approach that resonates with people, i.e. stories that are emotively engaging, spanning different genres (romance, comedy, mystery, etc.);
– stories that are (more) non-linear, (more) personalised, (more) adaptive, i.e. aspects that were not covered in CHESS and other projects, while at the same time accounting for multiple users interacting with the story and collaborating to advance it;
– stories that are persistent, combining hybrid story spaces (visitors continuing online and on-site) for users who would like to access content before, during or after a visit to a cultural space.

As a starting point in exploring the role of emotions in storytelling and user experience, we considered adopting an agile development approach to create a first prototype in order to test out some of the above ideas. The prototype, implemented as an interactive mobile application for visitors on-site the Ancient Agora, is described below.

## 4. The Digital storytelling prototype at the Ancient Agora of Athens

The prototype storytelling experience was created and evaluated in late 2016 by a multidisciplinary team of archeologists, interaction designers and computer scientists. The objective of the prototype was to explore if and how visitors could be involved in an emotional journey to the past, going back in time to experience facets of life set in the Ancient Agora. Visitors walk around the site and listen to stories explicitly authored with the objective of striking emotional chords. We believe that well-known archaeological sites such as the Ancient Agora have a high dramatic potential that can help to humanize what is difficult to understand. Thus, the emotional aspect became central to this project: starting from a sentimental involvement, visitors are expected to approach the ancient ruins in a different manner and to become curious about their purpose, use, and significance.

### 4.1 *The site*

The archaeological site of the Ancient Agora of Athens is the best-known example of an ancient Greek agora, located to the NW of the Acropolis and bounded in the S by the hill of the Areopagus and in the west by the Agoraios Kolonos hill, also called Market Hill. The site is being excavated by the

American School of Classical Studies in Athens[3] since 1931. After the initial phase of excavation, in the 1950s, the Hellenistic Stoa of Attalos on the eastern side of the Agora was reconstructed, and today it serves as a museum and as storage and office space for the excavation team.

### 4.2  *Stories*

Under the title *1001 stories of the Ancient Agora*, our team explored the idea of several independent stories offered under a unifying theme; that of a developing love story between Ian, an American archaeologist, and a mysterious young Greek woman named Eleni. Of the 1001 envisioned stories, two have been created for this prototype, the story of a grave and the story of the post-Herulian wall. The themes of these two stories were chosen to represent powerful concepts with which people relate to, such as life, death, love, and war. Stories of life or loss have the power to provoke existential reflection, sympathy and even empathy. Stories of tension and triumph ignite our inner fire because struggle is part of human nature (GALLO 2016).

Every story conveys something new about the Agora, its monuments, the historical characters who lived there and the recent discoveries carried out by the archaeologists. Every story can be experienced through different perspectives, and the visitor can choose one or more. In this way, the story of a monument is told, for instance, by characters with a particular affinity with the historical and archaeological context (e.g. a person that really existed, such as the Athenian historian Dexippus) and characters capable of touching different audiences (e.g. a child or an archaeologist of the 1960s as narrators).

*Ian and Eleni*. On his first day at the Agora excavation, Ian, an American archaeologist of the 1930s, meets Eleni, a young local woman who (inexplicably) knows many stories about the Ancient Agora. Ian is intrigued and invites Eleni to meet him later at the site: *So night after night, Eleni and Ian meet at the ancient Agora and she always has a special story to tell…* says the narrator. Romance ensues but at the end of the story Ian becomes suspicious and presses Eleni to tell him how she knows all of the details pertaining to the Ancient Agora. Eleni can only reveal the truth, that she is a ghost from the past.

The story of Ian and Eleni serves as an "umbrella" to encompass a variety of different stories about the Agora. The first two stories developed for this prototype are described below.

*The story of the grave*. The main topic of this story is a mysterious grave, found by archaeologists in the 1960s. The excavations revealed some atypical goods inside the grave, dating back to 850 BC. The objects found are now exhibited in a glass case in the museum that is situated inside the archaeological

---

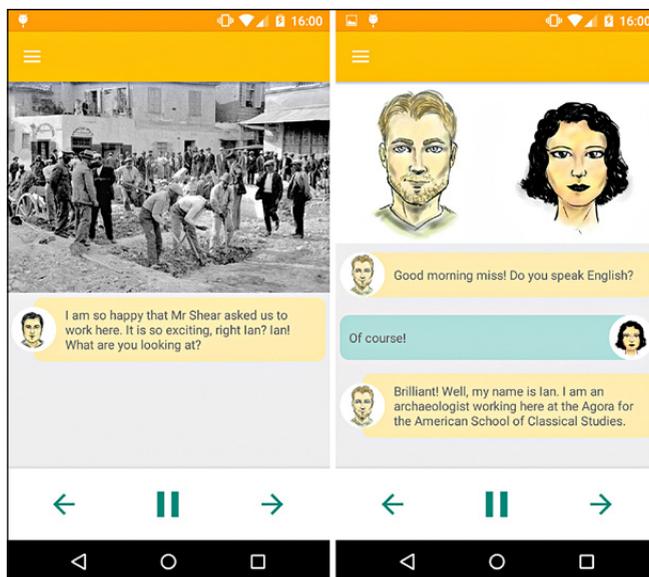[3]  http://www.ascsa.edu.gr/ (accessed: 01/08/2017).

Fig. 1 – Screenshots from the mobile application depicting the characters narrating the stories in the Ancient Agora prototype experience.

site. The characters of the story span three different time periods, 850 BC (death of a prominent woman), 1967 AD (archaeologists discover the grave), and 2004 AD (researchers find out that the dead woman was pregnant). The visitor learns the truth about the grave from the characters "living" in 2004. The following excerpts illustrate the narration style:

850 BC

Narrator: *Glauke was looking, eyes wide open, at her older sister. Herse was so beautiful, wearing her golden earrings adorned with pomegranates. It reminded Glauke of the day she married that handsome, noble stranger with whom she spent so many happy years. Herse was lucky, she had a very happy marriage. Her house was full of everything. And her husband was gentle and kind. The only thing that shadowed her happiness was that the gods did not bless her with children. Glauke would catch her, very often, starring at her kids, 3 boys and 2 girls, with love mingled with pain. And when Glauke yelled at them, every time they would disturb the neighbors with their shouts, Herse would always interfere: «Do not berate them, they are just kids!» and would then hug them tightly. «Glauke!». Her husband's voice dissolved the bitter-sweet memories. Glauke felt her eyes fill with tears. Her sister, sweet Herse. Shortly, her body would be laying on top of wooden planks set on fire, and turn into ashes. Who could*
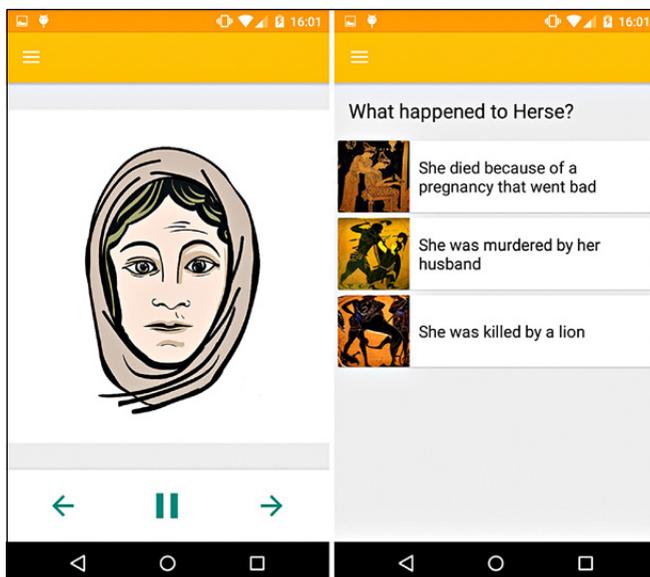
Fig. 2 – Screenshots from the story of the grave depicting one of the main heroines of the story, Herse (left), and an interactive quiz requiring visitor input (right).

*imagine such a disaster? Who could expect that instead of happiness she would meet death?*

*Glauke joined hands with her younger daughter and, following her husband and the rest of the family, made her way towards the burial site. The whole community was here, for the last farewell to Herse. The animals for the funerary feast, 70 kilos almost, were already roasted. The gifts she would take with her were gathered: a splendid necklace made of glass beads, seals and that beautiful pyxis made of clay, with the five conical pinnacles, to hold her belongings. An abundance of gifts, not just for her sister but for the creature too. The one that bears no name. The one that lead her to death.*

1967 AD
[Sound of digging. A transistor playing a 1967 hit, "*L'amour est bleu*".]

Yiorghis (worker): *Hey, boss! Come here to see what we've found!*
Robert (archaeologist): *I am coming! And turn off this transistor radio! It's driving me crazy!*
Yiorghis: *Ok, boss! Look!*
Robert: *Oh, my god! An intact geometric tomb!*
Yiorghis: *And what about this box?*
Robert: *Oh! This is a beautiful pyxis!*

Yiorghis: *Pyxis?*
Robert: *A box, used by women to store their jewelry or their cosmetics. […] Although, this is definitely strange… This kind of cinerary urn was used, as far as I know, only for men…*
[…]

*Can you imagine why a woman was buried in such an unusual vase?*
*1. Because she was an aristocrat.*
*2. It was not unusual after all. Archeologists, in the future, discovered more of these vases used in women's tombs.*
*3. Because her death was connected to that of another human being.*

*[3] Yes, the woman in tomb H 16:6, the "rich Athenian lady" as she is usually called, died 8 months pregnant or after she gave birth to a premature fetus. For many years archaeologists were wondering why her cremated remains were put in a funerary vase destined exclusively for men.*

*The story of the post-Herulian Wall.* The second story is inspired by the late Roman wall erected near the most known building of the Ancient Agora, the Stoa of Attalos. The story concerns a lesser-known event about the history of Athens, the sack of the city by the Herules (a Germanic tribe) in 267 AD. Three characters offer three different perspectives of the event as related to the Ancient Agora. Excerpts from these sub-stories are provided below:

Introduction to the story
Narrator: *Directives, clamors, and noises of weapons. In the faint morning light, the barbarians were outside the gates of Athens. After crossing the Pontus Euxinus and the whole of Greece, the Herules finally smelled the scent of plunder. The Athenians had to fight to save their own city. The city walls were solid; the emperor Valerianus had reinforced them 15 years earlier, and they would have resisted.*
[…]

DEMETRIOS
*Demetrios managed to run away after the barbarians had invaded the city. He climbed up to hide in a leafy tree near the temple of Hephaestus. He was paralyzed by fear for the danger he had narrowly escaped from! Demetrios was a boy – taller and stronger than his peers, but still a boy. Given the scarcity of men able to fight, the adults had asked him to help defend the city, but this was his very first time in war.*
*When the barbarians managed to break the defensive line, one of them, with a long blond beard and a horrible helmet, attacked Demetrios savagely with a heavy sword and by shouting incomprehensible words at the top of his voice. Demetrios screamed out in fear and ran away. «A coward, I'm a coward! But better a coward than a dead man».*
[…]

DEXIPPUS

Dexippus: *I freed my city from the enemy. An endeavor worthy of being described in one of my next works. I could write that Dexippus, an Athenian politician and historian, devotee of Herodotus and Thucydides, made the history of his city defeating the enemy with no help from Rome. We were just two thousand in the forest and we managed to defeat the barbarians with a series of ambushes. What a great day for the Athenians!*

*The Athenian pride grew inside his heart while he was walking along the Pana-thenaic Way with his young friend Demetrios.*

Demetrios: *I agree, it was a fantastic endeavor but… don't misunderstand me: a huge part of our city is still in ruins. I was here, in the Agora, when the barbar-ians entered the city. I saw them with my own eyes destroying our monuments. Look at what remains of the Stoa of Attalos: are we going to restore it?*
[…]

CIRIACO (Fig. 3)

Athens, 7th April 1436
Piero: *I got to Athens. I saw huge walls destroyed by time and, both in the city and in the nearby country, marble buildings of extraordinary beauty, houses, temples and numerous statues made by very important artists, and great col-umns, but all these things were only a huge mass of ruins.*
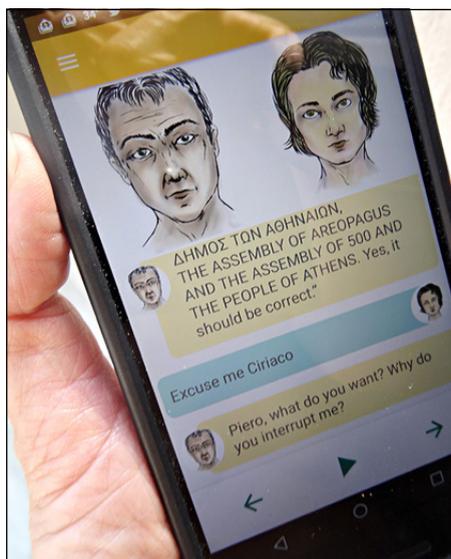


Fig. 3 – A screenshot from one of the stories of the post-Herulian Wall depicting the characters of Ciriaco and Piero and their dialogue.

*Yesterday I read his diary. If he knew, I would've gotten in serious trouble. I've been reading it almost every day during this long journey from Ancona. I know it's wrong, but I admire Ciriaco immensely and wish to learn as much as I can from him. He writes mainly about his life. So different from mine; I mean, I like to travel, to see beautiful places, and yes, to also meet beautiful women, of course. However, Ciriaco is not as interested as I am in these kinds of things.* […]
Ciriaco: *Piero, what do you want? Why do you interrupt me?*
Piero: *I finished the task you assigned to me. Which drawing do you prefer?*
[Both drawings displayed on the screen]
Ciriaco: *Uhm, I like the details in the second… I think you should do another one, you can do better, definitely!*
Piero (mumbling): *Every time the same story. Every time a different mistake. I must have patience!*
[…]

### 4.3 *Implementation*

The stories were implemented using an on-line story prototyping tool created by a team of researchers and developers at the Department of Informatics and Telecommunications of the National and Kapodistrian University of Athens and the ATHENA Research Center. The tool was used by the authors to compile audio, video, text and images into a branching storytelling experience. The resulting multimedia production is exported into a mobile application which can be experienced on any commercially available Android smartphone (Fig. 4). All voices are studio-recorded.
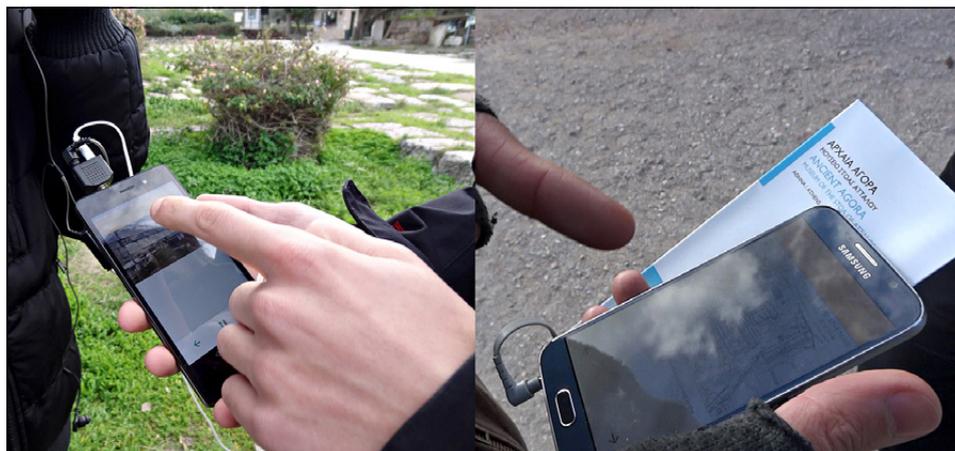


Fig. 4 – Visitors handling the mobile phone with the prototype experience created for the Ancient Agora of Athens.

## 5. Evaluation

In order to evaluate this prototype, we invited users to experience the stories on-site the Ancient Agora in December 2016. The goals of this preliminary study were:

– to record user requirements in relation to emotive digital storytelling;
– to address usability and practical issues;
– to assess whether the user experience flows; and
– to determine the potential of the stories in striking an emotional chord.

### 5.1 *Participants*

Seven users, three female and four male, participated in the study. Participants' ages ranged from 20 to 55 years old and included two archaeologists, computer science students and researchers, and an architect/exhibit designer. Two of the participants had visited the Ancient Agora before and knew the site quite well while the others had either never been to it before or had not visited it in recent years.

### 5.2 *Procedure*

The participants were met by the evaluators at the entrance of the archaeological site. An introduction to the goals of the study was given to every



Fig. 5 – A pair of friends experiencing together the stories near the temple of Hephaistus, during the evaluation of the prototype at the Ancient Agora.
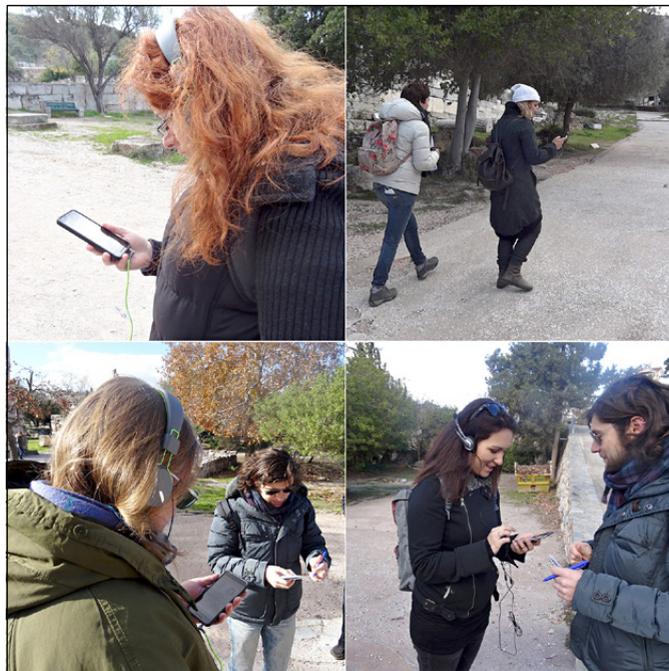
Fig. 6 – Visitors while participating in the study and observed/interviewed by the researchers.

participant as well as consent forms for audio/video recording them. A mobile device with headphones was provided to each. No other instructions were given, since the goal was also to evaluate the application's usability. Two of the users chose to share the same device (Fig. 5), while the rest preferred an individual experience (Fig. 6).

While experiencing the story, participants were shadowed by the evaluators who recorded their path and reactions. Each session lasted from 20 to 40 minutes. After the experience, each visitor was interviewed, based on a predefined set of questions; a focus group discussion followed to collect further comments.

### 5.3 *Preliminary observations*

The themes that emerged from analyzing the interviews were numerous, e.g. issues concerning geolocalization; interactivity and making choices; the use of the screen; sound vs. text; photos vs. sketches; narration vs. dialogue; story style, structure, length and characters; fiction vs. facts; humour; connection to the cultural site; and emotive aspects.

Participants' impressions from this first evaluation of the *1001 stories in the Ancient Agora* prototype were, generally, positive. Despite the unusually cold weather on the day of the evaluation, the participants enjoyed walking around in the Agora: «The whole idea of walking around as someone's telling you not about what you are seeing but a story is very powerful». All visitors experienced the story they chose from beginning to end, while some chose to experience both stories: «It's like being a time traveller and going back to the period you choose to visit». In particular, users were enthusiastic about the potential of the stories and the power of emotions to convey meaning through them. Among the strengths of the experience, according to the users, was the possibility to choose different perspectives; the little-known aspects of history that were revealed in such a dramatic way; the media content displayed on the screen, especially the historical photos of the American School; and the possibility of moving from one place to another at will («It's a narrative where you're free to look around and you have these punctuated moments where it mentions a building and you're, like, oh I'm here in the story!»). However, some participants wanted clear directions on each story's starting point and where to stand.

In terms of shortcomings, although the interface was generally considered easy to use and intuitive, visitors had difficulty navigating inside the site due to the absence of an appropriate map or geolocation service. Some users felt burdened by the cognitive load caused when interacting with the application and listening to the audio at the same time, and suggested that they would've liked to press "start", put the phone in their pocket and walk in the Agora listening to the stories, without being distracted by the screen and interactive activities. Others preferred the more active approach. One participant wanted other/more themes: «I'd like to learn more about society in Antiquity, to feel the aura of being here in the times of Kimon, Perikles, Plato or Socrates. In fact, I would've liked Kimon to give me the tour». All in all, we gathered many suggestions for improvement and proposals for features to be implemented.

## 6. FUTURE WORK

Overall, the main concept at the base of the storytelling approach seemed to work. Storytelling and emotions seem to provoke the visitors' curiosity and engagement with the site. Future work on this research will include the continuation of the authoring of stories by incorporating emotional triggers. We also plan to perform further studies, following an appropriate methodology to analyze the observations, interviews, focus group discussions, and other methods for obtaining results that can guide the iterative design and development of evocative experiences.

We are just at the beginnings of unravelling many promising design possibilities as we approach emotions and experiences more explicitly in our design processes. This preliminary study provides us with the basis needed to continue researching and developing emotive storytelling that can connect visitors to the cultural content and enhance their experience.

## Acknowledgements

Maria Roussou

National and Kapodistrian University of Athens
Department of Informatics and Telecommunications

mroussou@di.uoa.gr

Francesco Ripanti

Università di Pisa
Dipartimento di Civiltà e Forme del Sapere

francesco.ripanti@fileli.unipi.it

Katerina Servi

National and Kapodistrian University of Athens
katservi@gmail.com

## REFERENCES

Alelis G., Bobrowicz A., Ang C.S. 2013, *Exhibiting Emotion: Capturing visitors' emotional responses to museum artefacts*, in A. Marcus (ed.), *International Conference of Design, User Experience, and Usability (DUXU): User Experience in Novel Technological Environments - HCII 2013. Part of the Lecture Notes in Computer Science Book Series (LNCS, volume 8014)*, Berlin-Heidelberg, Springer-Verlag, 429-438.

Balet O., Duysens J., Compdaer J., Gobbetti E., Scopigno R. 2008, *The CRIMSON Project - Simulating populations in massive urban environments*, in 8th *World Congress on Computational Mechanics (WCCM8) (Venice 2008)* (http://vcg.isti.cnr.it/Publications/2008/BDCGS08; accessed: 20/06/2017).

Bedford L. 2001, *Storytelling: The real work of museums*, «Curator. The Museum Journal», 44, 1, 27-34 (http://doi.wiley.com/10.1111/j.2151-6952.2001.tb00027.x; accessed: 01/08/2017).

Brooks K.M. 1996, *Do story agents use rocking chairs? The theory and implementation of one model for computational narrative*, in *Proceedings of the Fourth ACM international conference on Multimedia (MM96) (Boston 1996)*, New York, ACM Press, 317-328 (http://portal.acm.org/citation.cfm?doid=244130.244233; accessed: 20/06/2017).

Callaway C., Stock O., Dekoven E. 2014, *Experiments with mobile drama in an instrumented museum for inducing conversation in small groups*, «ACM Transactions on Interactive Intelligent Systems», 4, 1, 1-39 (http://dl.acm.org/citation.cfm?doid=2602757.2584250; accessed: 20/06/2017).

Cavazza M.O., Charles F., Mead S.J. 2002, *Character-based interactive storytelling*, «IEEE Intelligent Systems», 17, 4, 17-24 (http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=1024747; accessed: 01/08/ 2017).

Damiano R., Gena C., Lombardo V., Nunnari F., Pizzo A. 2008, *A stroll with Carletto: Adaptation in drama-based tours with virtual characters*, «User Modelling and User-Adapted Interaction», 18, 5, 417-453.

Gallo C. 2016, *The Storyteller's Secret: From TED Speakers to Business Legends. Why Some Ideas Catch On and Others Don't*, New York, St. Martin's Press.

Goodman A. 2015, *The four-letter word behind all successful stories*, «Free-range thinking», November 2015 (www.thegoodmancenter.com; accessed: 20/06/2017).

Johnsson E. 2006, *Telling Tales. A Guide to Developing Effective Storytelling Programmes for Museums* (C. Adler ed.), London, London Museums Hub, Museum of London (available at: http://www.museumoflondon.org.uk/files/4413/7468/3728/Telling-Tales.pdf; accessed: 20/06/2017).

Katifori A. *et al.* 2016, *Cultivating mobile-mediated social interaction in the museum: Towards group-based digital storytelling experiences*, in *MW2016: Museums and the Web 2016 (Los Angeles 2016)* (available at: http://mw2016.museumsandtheweb.com/paper/cultivating-mobile-mediated-social-interaction-in-the-museum-towards-group-based-digital-storytelling-experiences/).

Kriegel M., Aylett R. 2008, *Emergent narrative as a novel framework for massively collaborative authoring*, in H. Prendinger, J. Lester, M. Ishizuka (eds.), *Intelligent Virtual Agents. Proceedings of the 8th IVA 2008 International Workshop (Tokyo 2008)*, Berlin-Heidelberg, Springer, 73-80.

Lebowitz M. 1984, *Creating characters in a storytelling Universe*, «Poetics», 13, 171-194.

Mateas M., Stern A. 2005, *Structuring content in the façade interactive drama architecture*, in M. Young, J. Laird (eds.), *Proceedings of the First Artificial Intelligence and Interactive Digital Entertainment Conference (AIIDE) (Marina del Rey 2005)*, Menlo Park (CA), American Association for Artificial Intelligence Press (available at: http://www.interactivestory.net/papers/MateasSternAIIDE05.pdf).

Phillips D. 1997, *Exhibiting Authenticity*, Manchester-New York, Manchester University Press.

Poole S. 2015, *"Ghosts in the Garden": Locative gameplay and historical interpretation from below*, in *Challenge the past / diversify the future (Gothenborg 2015)*, Gothenborg, University of Gothenborg, 93-96 (available at: http://old.react-hub.org.uk/heritagesandbox/projects/2012/ghosts-in-the-garden/).

Pujol L., Roussou M., Poulou S., Balet O., Vayanou M., Ioannidis Y. 2013, *Personalizing interactive digital storytelling in archaeological museums: The CHESS project*, in G. Earl, T. Sly, A. Chrysanthi, P. Murrieta-Flores, C. Papadopoulos, I. Romanowska, D. Wheatley (eds.), *Archaeology in the Digital Era. Papers from the 40th Annual Conference of Computer Applications and Quantitative Methods in Archaeology (CAA) (Southampton 2012)*, Amsterdam, Amsterdam University Press, 77-90 (available at: dare.uva.nl/cgi/arno/show.cgi?fid=545855).

Roussou M. 2004, *Learning by doing and learning through play*, «Computers in Entertainment», 2, 1, 10 (http://portal.acm.org/citation.cfm?doid=973801.973818; accessed: 01/08/2017).

Schell J. 2005, *Understanding Entertainment: Story and gameplay are one*, «ACM Computers in Entertainment», 3, 1, 835-843.

Springer J., Kajder S., Borst Brazas J. 2004, *Digital Storytelling at the National Gallery of Art*, in D. Bearman, J. Trant (eds.), *Museums and the Web 2004*, Arlington (VA), Archives & Museum Informatics (available at: http://www.museumsandtheweb.com/mw2004/papers/springer/springer.html).

Tsene L., Saridaki M., Roinioti E., Chrisanthopoulou Ch., Tsakarestou B. 2014, *Playful Transmedia Storytelling: The case of Petite Pousette*, in *International Digital Storytelling Conference: Digital Storytelling in Times of Crisis (Athens 2014)*, Athens, 1-10.

Vayanou M., Karvounis M., Katifori A., Kyriakidi M., Roussou M., Ioannidis Y. 2014, *The CHESS Project: Adaptive personalized storytelling experiences in museums*, in I. Cantador, M. Chi, R. Farzan, R. Jäschke (eds.), *The 22nd Conference on User Modelling, Adaptation and personalization. UMAP 2014 Extended Proceedings (Aalborg 2014)* (http://ceur-ws.org/Vol-1181/pros2014_paper_04.pdf; accessed: 20/06/2017).

Walsh P. 1997, *The Web and the unassailable voice*, «Archives & Museum Informatics», 11, 2, 77-85.

ABSTRACT

The use of interactive storytelling by museums and heritage sites lends to the creation of experiences that support visitors in engaging emotionally with the objects on display. Finding ways to connect to the cultural content is even more important for visitors of archaeological sites due to the often fragmentary nature of the exhibits, which can leave them wondering what was once there and how it relates to them. In this paper, we describe the creation of a prototype mobile storytelling experience that attempts to explore a more emotive kind of storytelling in cultural contexts. The prototype was evaluated in a preliminary study that took place at the archaeological site of the Ancient Agora of Athens. The observations provide insights for the design of future iterations of such emotive storytelling experiences.