

## Research, museums, audiences

### The experience of the MemO Project to increase the accessibility of archaeological collections

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### The problem of objects without context and archaeological collecting: a comparison between research, museums and audiences<sup>1</sup>

Each object carries a memory. It is the trace of those who manufactured it, those who marketed it, and those who used it. An archaeological heritage also holds traces of its deposition, the space in which it was left to rest and the passage of time. This object, however, can also connaturate with a second or third life, with the creation of new memories. Today as centuries ago, these moments can be determined by the discovery of the artefacts, their study and exhibition, perhaps in a museum, or their trade and grouping within private collections.

From the mid-eighteenth century on in Italy, the work of scholars has allowed the establishment of the current archaeological discipline and the most innovative conservation techniques, the drafting of the most strict regulations for the protection of Cultural Heritage and the dissemination of a taste for the ancient that remains today. However, the incredible discoveries above all between Rome, Pompeii and Herculaneum led to the start of a deep and rooted, in the European culture of the time as in the current, desire to possess these objects, incredible documents of a centuries-old history. Alongside legitimate collections, some phenomena take shape, such as clandestine excavations (and the consequent illicit trafficking of cultural goods) or falsification. Over time, this implies the intertwining of true and distorted stories. Stories that can confuse an inexperienced reader and that often deceive the professionals themselves.

Although they are phenomena to be contrasted as illegal and undermining the very idea of Culture, they must be studied for their multiple cultural (historical, artistic, archaeological), social and economic nature (Baggio et al., 2019). The fake object can narrate the technical methods for its production and point out the idea of “ancient” transmitted in various societies. Furthermore, in the eyes of

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<sup>1</sup> Written by Luca Zamparo

many, the object isolated of its context of origin risks losing its importance, as if it were losing its archaeological nature: instead, it still contains a whole memory that nobody can ever steal from it and that only professionals can, once again, bring out to promote and spread a legal and authentic culture.

Based on these considerations, the MemO Project, “The memory of objects. A multidisciplinary approach to the study, digitalization and value enhancement of Greek and South Italian pottery in Veneto”, coordinated by the Department of Cultural Heritage of the University of Padova and supported by the Fondazione Cassa di Risparmio di Padova e Rovigo. The MemO Project, in addition to investigating the spread of Greek and South Italian pottery in ancient and contemporary times in Veneto, has launched an intense campaign of recognition and digitalization of the material present in the regional territory, thanks to the collaboration of 14 different museums, merged into an open-access database explicitly created for research (universities), management (museums) and pleasure (wider audience) purposes. Furthermore, thanks to this impressive material, the MemO Project team is creating the serious game FakeMuse, a tool to make known the authentic archaeological material present in Veneto and to spread a Culture of Legality in the historical-artistic and archaeological field.

### **Making the invisible accessible: 3D modelling for archaeology<sup>2</sup>**

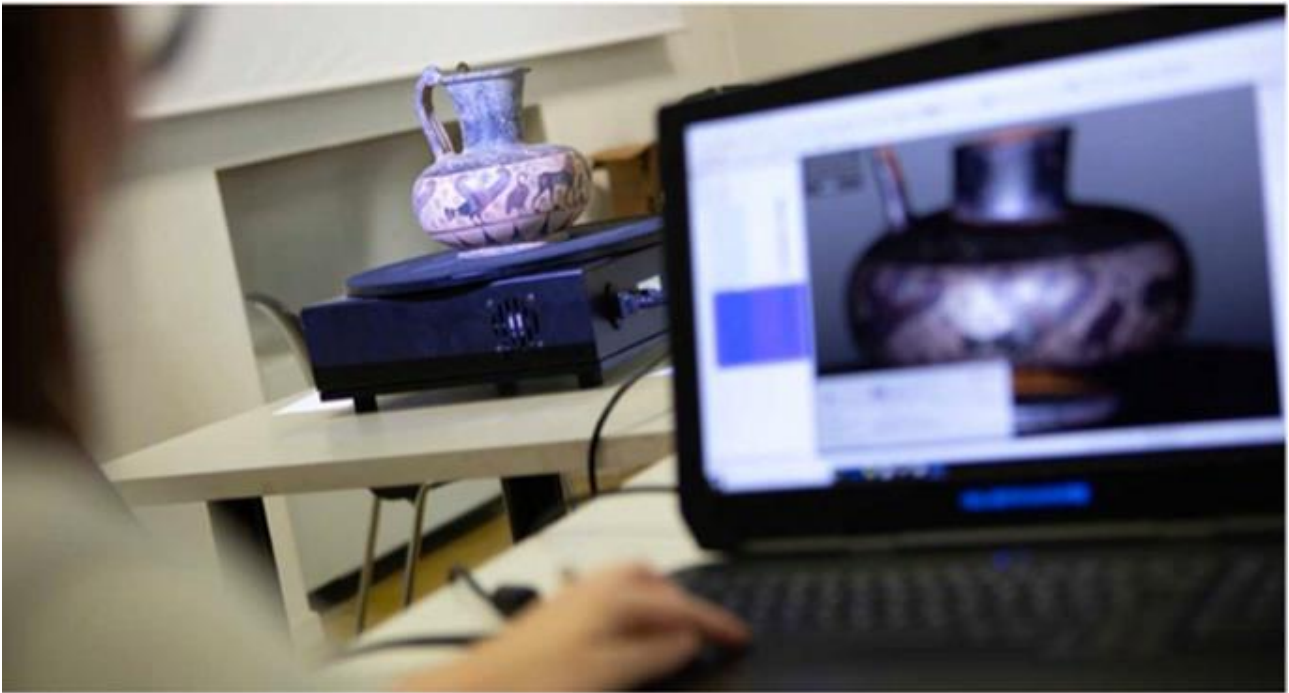
In Digital Humanities, the term “project” takes an operational approach: it involves planning, managing of resources, and the collaboration among scholars of quite different disciplines, leading, in turn, to new interactive and experimental research. Moreover, a project is an activity that “projects” something that, at the very moment, does “not exist”. On this ground, the research project here presented applies methods and hardware belonging to the field of engineering known as Reverse Engineering, using a structured light system scanning instrument, on Greek and South Italian pottery. The advent of information technologies has substantially eroded the gap between humanities and scientific applications and brought on a growing concern for preserving and enhancing what is currently defined as the Digital Heritage. Digital models, in particular, are complex projective information capable of drawing out aspects of an artefact not visible to the naked eye from potentially endless viewpoints.

The acquisition of the objects was performed by taking a set of partially overlapping range scans to acquire many shots and to produce the so-called range maps with geometry, topology and RGB information (Fig. 1). These range maps were processed to convert the data encoded into a single, complete, non-redundant and optimal 3D representation (a triangulated surface). The processing phases (usually supported by standard scanning software tools) are:

- Range map alignment, to put all the single range maps into a standard coordinate system where all the scans lie aligned on their mutual overlapping region.
- Range map merger (or fusion) to build a single, non-redundant triangulated mesh.
- Mesh editing to improve the quality of the reconstructed mesh (Faresin and Salemi, in press).

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<sup>2</sup> Written by Emanuela Faresin



*Fig. 1. A structured-light 3D scanning was used to issue a geometric model of micrometric resolution in all its parts. The object was measured with 10  $\mu\text{m}$  accuracy using an automatic turntable (© E. Faresin)*

### **Legality Education and Museums: the Serious Games<sup>3</sup>**

In order to spread the issues of legality education in the archaeological field, and the subject matter itself, the design of a serious game (Michael and Chen, 2006) inside the MemO Project has been included.

For the reasons, FakeMuse has been designed, a single-player mobile game developed for Android smartphones, where players will play the role of an intern curator of a fictional archaeological museum to collect as many artefacts as possible as a consequence, expand the museum collection. The aim will be reached by understanding if the proposed objects are authentic or not. If players can do this, the artefacts will be added to the collection and exposed; in this way, the museum will also increase its economic income, named MusEuros. To facilitate the decision process, the players can spend the cultural coin of the game named Lauros to obtain some clues associated with the artefact. Lauros are obtained by playing with some minigames and buying particular short magazine articles (Fig. 2). The design of FakeMuse followed specific requirements. The target group selected for the game is young adults (19–24 age) to twenties and thirties (25–35 age) who do not have a specific background in humanities. The characteristics of our target users have been established, creating a set of personas as a reference during the design process. For what concerns the game's contents, it has been decided to use authentic artefacts to present to the players, and all articles and minigames contents are made by the archaeological members of the MemO Projects, using a web portal related to the remote application database. The players will obtain information on the artefacts collected, knowing the membership collections, the description, and the real museum where they are exhibited.

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<sup>3</sup> Written by Daniel Zilio.



Fig. 2. Three examples of screens: The Home and the Newsstand with magazines (© D. Zilio)

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