

12

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Proceedings of the 12th International Congress
on the Archaeology of the Ancient Near East

Volume 1

Environmental Archaeology

Hammering the material world

Cognitive archaeology

Modeling the past

Networked archaeology

Endangered cultural heritage



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Multiscale Collaborative Approaches to Archaeological Research for Community Engagement: The Projects *SigNet*, *(in)visible Collections* and *Afterlife*

Vito Messina¹

Abstract

In this paper three collaborative projects of different scales are presented: such projects aim to engage communities and raise their interest and awareness on archaeological materials coming from the Near East and the Mediterranean. Given the necessity of such an engagement to develop future strategies of cultural heritage protection and promotion, it emerges from the experience already made and/or still ongoing that the close relation past-present and the agency antique objects still have on contemporaneity appear as key-points for stimulating positive feedback. The conscious use of digital media to develop dissemination strategies is likewise outlined.

Introduction

The concern for public participation in cultural heritage has characterized the dissemination strategies of the academic community since the Venice Charter (1964). However, only in the last decades, thanks to the possibilities offered by digital platforms and social media, such a concern has become a main issue for scientific projects, among which, *in primis*, archaeological research. The preservation and promotion of archaeological heritage (especially ancient sites) indeed is among the priorities of almost all the activities funded by international Institutions (often governmental).

Community engagement and participatory approaches allow for a shared consensus on archaeological activities; as is well known, the latter need the support of a wide audience to compete with projects developed in the field of the so-called hard sciences. This is particularly true for cultural contexts of the past that have become identity symbols: there is no necessity to recall how much this has influenced archaeological research devoted to the ancient Near East, especially in the period that followed WWII.

Indeed, the crisis that affected the Near and Middle East at a supra-regional level in the last decades has put archaeological heritage, illegal trade, and the threat of antiquities under the light of the media mainstream: therefore, the importance of public participation in archaeology to embody public concerns, needs, and values in decision-making dynamics has been many times stressed in literature.

Within such a frame, archaeological projects and community engagement have become symbiotic.

In this paper, three archaeological projects on materials and contexts of the ancient Near East and the Mediterranean are presented as collaborative approaches to raise community

¹ University of Turin.

interest and awareness². Such projects share the latter aim and the focus on cultural contexts of the ancient Near East but have different scales, both in terms of funds needed and of the consortia leading them. Only one has been completed and fully implemented.

The possibility to create projects as multi-scale spinoffs of a single initiative embodying shared characteristics and aims is likewise stressed as an opportunity to see funded at least some of the work packages that are their backbone. The projects *SigNet*, *(in)visible Collections* and *Afterlife* have been envisioned as interlinked initiatives that can also be developed independently.

The project *SigNet*

The project *SigNet* aims to develop a user-friendly interactive platform and test innovative digital documentation tools to provide open access to otherwise inaccessible archives of digital resources (namely digitized Hellenistic sealings) and study the complex information they provide in a collaborative framework. Through the platform, automated recognition of contents, data mining, and comparative analysis of aggregated large datasets will be actively performed by multi-level users. The concept has been already published in preliminary reports and congress proceedings (Caneva and van Oppen 2016: 222-231; 2017: 127-134).

Automatic image recognition, computer-aided and statistical analyses of a sizeable quantity of objects, along with their semantic evaluation, are bound to offer fresh insights into the archival practices, administration and bureaucracy (Messina 2005: 125-144), as well as the inter-connectivity and cultural trends of the Hellenistic world. The tangible value of archaeological records and the intangible value of their entanglements with ancient societies are here connected for addressing complex phenomena like the increasing propensity to global connectedness and the movement of goods and people on a global scale. Sharing these insights among a wide community of interested parties and the public will enhance our understanding of long-term dynamics that are very similar to contemporary societal challenges.

The use of innovative and user-friendly digital tools for giving relevance to historical sources and resources, the approach to societal challenges from a long-term perspective and the engagement of present-day society in sharing these contents are the main characteristics of the project.

SigNet has three main objectives:

- The first is to develop innovative digital tools that can be employed to analyse and share large datasets enhanced with metadata. These tools concern two main components: (1) a portal linking information from the different datasets to foster the participation and interaction of users of different communities; and (2) open-source software performing automated content analysis and image recognition addressing the challenges of patterns identification, sealings pairs comparison and deformed seals retrieval in large scale datasets. The interoperability of the portal is based on providing access to big-data and allowing the reuse of information in tandem with a specialised thesaurus for metadata compliant with standards of semantic content in cultural heritage;
- The second objective is to create a participatory, international and interdisciplinary network to address several broad and more specific questions about Hellenistic sealings and archives given their relevance as a category of material culture and marker of literacy, and the way societies stored their memories in private and public spaces. These

2 The present author is the PI of all the projects presented here.

will provide a new image of how the Hellenistic world functioned as a global world of intra-cultural connectivity. The aim is to work in study groups on content that requires systematic comparison;

- The third is to enhance public engagement and citizen science projects in various environments by means of the online platform and developed digital tools, and through an active international network. *SigNet* will thus provide a multifunctional, searchable and collaborative web-portal, linking metadata-enhanced repositories (comprising potentially 50,000 sealings), and contextual information.

As the objects are of miniature size, and difficult for the human eye to distinguish they have remained underexploited; and due to their wide dispersal, archives of sealings (which are a perfect example of localised and static archives) have been mostly studied in isolation and publications do not go beyond the stage of individual inventories. Therefore, they do not allow a real breakthrough towards cross-inventories studies. This major bottleneck will be resolved only through digital technology and computerized image processing that could create dynamic interoperable networks.

SigNet aims to convert these isolated archives into active digital resources. Image recognition software will significantly reduce the workload necessary for studying, describing, analysing and comparing the vast number of artefacts. The repository will comprise high resolution digital images currently housed at widely dispersed institutions. The collaborative platform, conversely, will be easily accessible for the widest possible digital community of interested users and adhere to the standards of LOD: linked open data (Szabados 2014: 51-67). Open access will be offered to information that will be available for further research questions.

The digitization and development of an image processing method should dramatically transform the visibility of this type of material and create a link with museums that have originals without context. Outreach programs aim to promote citizen engagement at all levels of society. Given the very nature of information embodied within the material, the target group will naturally grow well beyond the relatively small circle of specialists. As a result of the immense, but yet untapped potential of Hellenistic sealings, *SigNet* is expected to extract new meanings, give unprecedented relevance to historical sources and foster a deeper understanding of a challenging period of history by the exploitation of data that are often restricted to the field of art history whereas they illustrate cultural interactions and trends, as well as political and economic networks in an enlarged world both segmented and inclusive.

Indeed, the Hellenistic period witnessed many of the cultural phenomena facing contemporary societies and apparatuses, such as globalization and inter-connectivity, as well as the mass-movement of peoples and goods.

The territories conquered by the Macedonian king Alexander the Great at the end of the 4th century BCE stretched from the Mediterranean to the Indus Valley. These territories were ruled for centuries by different forms of government. These regions were inhabited by people of widely different ethnic and cultural backgrounds, among whom Greek and Macedonian veterans and migrants settled. The populations were, in other words, multi-ethnically and multi-culturally diverse – much like modern Europe or America. The inhabitants, likewise, experienced peaceful interactions, violent conflicts and hyper-connectedness very similar to those the world is facing today. Hellenistic societies were similarly confronted with problems of ethnical, cultural and religious diversity, prejudice and privilege, phenomena that are typical of what we call today globalization.

Globalisation can be defined as “processes by which localities and people become increasingly interconnected and interdependent”. These processes do not result in homogenisation but in a world of disjunctive flows with problems and opportunities that manifest themselves in local forms with contexts that are anything but local. Globalisation is nothing novel nor a phenomenon exclusively tied up with (European) expansion or modernity when the world would also become literally global: Globalisation has its history. Historicizing Globalisation will therefore make us better understand how and when our planet became systematically connected and how connectivity works as a long-term process still underway³. The Hellenistic era is arguably the pre-modern period in World History that has most in common with our present-day in terms of dramatic changes and enduring innovations brought about through Globalisation processes.

Crossing information given by hoards of sealings and the buildings in which they were kept and mapping their place of discovery on a Web-GIS would highlight the way human networks and urban spaces did interrelate. The *SigNet* Consortium is a unique partnership of European institutions led by specialists in computer sciences, digital imaging techniques, archaeology, ancient history, sigillography and numismatics (Fig. 1). It is associated with other international projects and institutions in Europe and North America. Proposing a pioneering approach for qualitative and quantitative analyses, *SigNet* bridges the geographical and chronological divides between initiatives, projects, collections and institutions.⁴

The project *(in)visible Collections*

(in)visible Collections is a collaborative project of Turin Institutions, led by specialists in archaeology and computer sciences, to aggregate and manage big metadata using digital tools and web-platforms. It involves the University of Turin (UniTO), Polytechnic of Turin (PoliTO), the Centro Ricerche Archeologiche e Scavi di Torino per il Medio Oriente e l’Asia (CRAST) and Fondazione Torino Musei–Museo d’Arte Orientale (MAO), and it aims to promote and disseminate over the internet part of the city’s cultural heritage, making available museum collections that are undisplayed, and thus unknown.

It also purposes to survey and aggregate metadata on objects otherwise invisible to the public or specialists for building open trusted sources on existing platforms like Europeana (Charles and Isaac 2015) and Cultura Italia and supporting the transfer of knowledge⁵. This

3 See, among recent publications, Appadurai 2001; Hopkins 2002; LaBianca and Scham 2006; Jennings 2011 with earlier bibliography. See in particular, for the Hellenistic and Roman worlds, Erskine and Llewellyn-Jones 2011; Pitts and Versluis 2015.

4 *SigNet* is linked with other projects that are underway, such as the Corpus der Minoischen und Mykenischen Siegel. The Cuneiform Digital Library Initiative (CDLI) by the University of California – Los Angeles (<http://cdli.ucla.edu/>) offers online resources comprising more than 32,000 Mesopotamian seals or sealings. Oxford University and CNRS-ArScAn launched another project on ancient Near Eastern cylinder seals (program Assyronline: sespoa.huma-num.fr) linked to the CDLI. A recent project funded by the European Commission, Byzantine Seals in a Digital Age (under H2020-EU.1.3.2) was developed at King’s College London. Contacts have been established for sharing methodology and outputs with these initiatives, notably with SigiDoc, and other projects, to establish overarching links between these related activities. However, these projects are for the most part not image-based.

5 The creation of web platforms aggregating digital big metadata aims at making cultural heritage accessible for all, and answers to the policies followed by many EU Countries under the recommendation of a letter of interest signed in April 2005 by different European Institutions. The purpose was to give open access to different types of content from different types of heritage Institutions. In order to achieve this, it has been established that digital objects made available for general users are not stored on a central or

will make the Turin's heritage available to users wherever they are, whenever they want it, and create new ways to participate in the cultural and scientific heritage of the city thanks to the use of the most up to date digital media and social networks.

To aid the process of gathering images and metadata regarding these collections, the participants will begin to create an online repository to link the data sets together: this multi-step process will require that this archive be first published online in a linkable, open access fashion. Thereafter, umbrella web-platforms will tie the data sets together allowing global searches, comparison and even statistical analysis: this product will be an invaluable tool for humanists, social scientists and other specialists, even if the ambition target is, in the end, the general public.

The goal is to provide a new instrument for scientific analyses based on aggregated big metadata, but also make the process of web search and browsing easier and faster for non-professional users, and thus foster the promotion of Turin from the cultural and even touristic points of view.

At the initial stage of the project, focus is given to a set of antiquities coming from excavations conducted at Seleucia on the Tigris and Veh Ardashir (central Iraq) by Turin Institutions⁶, which are now kept in the storerooms of the MAO. The focus on this collection is deliberate because of its exceptional importance. These objects tell the history of the cultural interrelations existed between people of Greek and Mesopotamian origin in the period following the conquest of Alexander the Great (end of the 4th–1st century BCE), but also the story of the scholars who discovered them and bridged, still up today, the heritage of people who suffered the threat of Daesh. There are only two other museums in the world that have comparable collections: the Iraq Museum, Baghdad, and the Kelsey Museum of Archaeology, Ann Arbor MI.

The MAO is the only European Institution keeping a collection of this type. Additional importance to these objects is given by the fact that, according to international laws and agreements, they were imported into Europe from a Country in which antiquities are now endangered by war and terrorism. The act of putting this collection into the light of a web platform or network is per se a way for contrasting the illegal trade of antiquities and, thus, terrorism.

Turin Institutions like the University have a long-standing tradition in the protection and valorisation of endangered cultural heritage, especially in conflict areas. This tradition, many times praised and awarded by International Institutions and Entities, becomes a kind of Turin's heritage itself, even if its importance is largely ignored by the public.

At this stage, the objective of *(in)visible Collections* is to digitalize and make available on the web metadata regarding 2,000 objects from Seleucia on the Tigris and Veh Ardashir (Coche). Digital images of all the objects and 3D models of a selection of them will be produced to be stored on an institutional repository – that of the MAO –, and then aggregated by Europeana and Cultura Italia. Once the collection is made available on the web, a social network campaign, exhibit and workshop will be organized to start to disseminate the project's outcome.

unique bank but remain under the responsibility of the cultural institutions that uploaded them and hosted on their networks or repositories.

6 Preliminary reports on the Italian excavations at Seleucia on the Tigris were published from 1966 to 1990 in the journal *Mesopotamia*. Final reports on some of the excavated areas were published by Messina 2006; 2010.

The digitalization of the antiquities from Seleucia on the Tigris and Veh Ardshir is only the first step of our project, however, for we aim at aggregating and making accessible all the invisible collections of Italy and, in the future, of other European Countries, giving particular emphasis to the objects coming from endangered contexts or conflict areas.

A network of Turin scientists and professionals in the fields of the management of endangered cultural heritage and computer sciences, has been created to lead the project and give the possibility to young students of UniTO and PoliTO to be involved in all the project's steps and trained in an interdisciplinary milieu. The project aims to impact on city Institutions (Fondazione Torino Musei, UniTO and PoliTO), specialists and, most important, common users and people interested in the city's heritage and ongoing activities of heritage protection in conflict areas.

The project *Afterlife. The unsaid of past materiality*

The project *Afterlife. The unsaid of past materiality* aims to define an innovative strategy to promote Turin's cultural heritage in the post-pandemic period, disseminating the modern and contemporary history of the city thanks to objects coming from the past. Such objects come from many different parts of the ancient world and have become iconic in their museum contexts: the Museo d'Antichità (MA), Museo Egizio (ME) and Museo d'Arte Orientale (MAO).

In literature and in the media mainstream objects of the past are recalled exclusively to tell the past. However, objects from the past also interact with modernity and contemporaneity and can be bearer of meanings regarding the present just as effectively⁷. Yet their narrative potential regarding contemporaneity –their afterlife– remains unexpressed. In transmitting the objects' afterlife, the aim of this project is to rise new interest in the heritage and history of Turin, experimenting with original forms of storytelling that intercept a wide audience thanks to strategies of community engagement. A network of synergies will also be created between future professionals in the management and communication of cultural heritage, offering university students the opportunity to train through participation in an interdisciplinary project and interact with specialists with different scientific backgrounds.

The project will impact on institutional subjects, such as the University of Turin (which will develop strategies of community awareness and engagement) and the museums involved (which will be able to enhance the promotion of their collections), but above all on broad categories of users such as the general public and public interested in cultural heritage. Thanks to sustainable strategies, community engagement will be encouraged through processes of interaction and inclusion. A renewed interest in the city's heritage and an effective promotion of the city and territory in the post-pandemic period are the outcome.

The project will be divided into five phases, which allow to develop the different aspects of the project independently of the completion of each phase (Fig. 2):

1. identification of objects (or collections of objects) of particular importance for their agency, namely their interaction with the present. The choice will be made jointly by the research group and museum institutions involved;

7 Think for instance of the so-called *Mensa Isiaca*, a bronze table with Egyptian-like engravings from the Roman age, which witnesses the international vocation of the Savoy dynasty and the renewed importance of Turin after the fall of the Napoleonic regime. The *Mensa* was initially acquired by the Savoy from the Gonzagas in the first thirty years of the Seventeenth century, it was deported in France by the French Directory, and then returned to the city after the fall of Napoleon.

2. documentation through archival sources on the post-depositional phase of the objects. This information will be found in museums' catalogues, in archives of city institutions that have contributed to the formation of archaeological collections, or in private archives, also taking into consideration private collectors;
3. elaboration of a specific narrative for each object (or collection of objects) based on the information found in archival sources. This will concern the modern and contemporary history of institutions and individuals with whom the objects have somehow interacted during their post-depositional phase;
4. experimentation of new forms of storytelling based on the possibilities offered by digital media (podcasts or videos on social platforms) and tools (beacons or QR codes in museums), as well as on the elaboration of more traditional forms of expressions adapted to new ways of dissemination (hypertexts based on LOD protocols and procedures for reducing the semantic gap);
5. dissemination of storytelling through specific fallout strategies.

Conclusions

To date, only the project *(in)visible Connections* has been implemented so that outcomes can be evaluated. Though a project of small scale, *(in)visible Connections* has successfully targeted different types of communities to rise their interest and awareness on objects kept in a European city but coming from distant geographic areas of the Near East.

The dissemination strategy following the completion of objects' digitalization and meta-data tagging has been developed on a narrative based on the objects' agency in antiquity only to a limited extent. It was also and primarily focused on the history of the Turin Institutions and people that discovered the objects themselves and on the present situation of crisis of the Country from which they come (Iraq); the efforts made to develop joint initiatives of cooperation to protect heritage under threat have been also emphasized. This has led to interesting results.

Community feedback analyses conducted in collaboration with the Fondazione Torino Musei provided an extremely positive response. This is evidenced when looking at the OSINT analysis (Fig. 3) of redundancy in the general media (press and social) and in the web of stories relating to the archaeological missions in Iraq led by a renowned Turin Institution: the CRAST. The data relating to the OTS (Opportunity to See) frequency, and the corresponding AVE (Advertising Value Equivalency) effectively describe the success of such a strategy for the public. Indeed, the awareness of the link that archaeological materials also have with contemporaneity creates new interest. Such an interest is directed on the one hand towards the objects themselves, now seen in a new light, on the other hand towards the history (still in progress) of people who interacted and still interact with those objects.

Web pages (of press or blogs), through which the stories of the Turin people engaged in Iraq have been disseminated, have been widely viewed and this has led to the opening of the exhibition 'On the Banks of the Tigris' held at the MAO, which used ancient objects for a narrative of the present. The potential of up-to-date digital media also emerges clearly as a way of dissemination: the positive outcomes of dissemination strategy developed as such has led to envision a project that will be further developed in the frame of the PhD programme Technologies for Heritage (T4C) of the University of Turin. Such a project aims at investi-

gating people participation in cultural heritage management via mobile applications to be developed on purpose⁸.

In the end, the agency antique objects have on contemporaneity looks a very promising issue to be addressed in future strategy of public engagement aiming at raising the interest and awareness on archaeological materials and contexts. The ancient Near East further appears as a matter of renewed interest due to the challenge we are facing and the new generations will continue to face: to protect and promote world heritage through widely disseminated knowledge.

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8 The project iCommunity is currently being developed and has led to the publication of preliminary reports on the potential of mobile application in public participation. See Nasrolahi, Messina and Gena 2020; Nasrolahi *et al.* 2021.

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Fig. 1: The SigNet Consortium

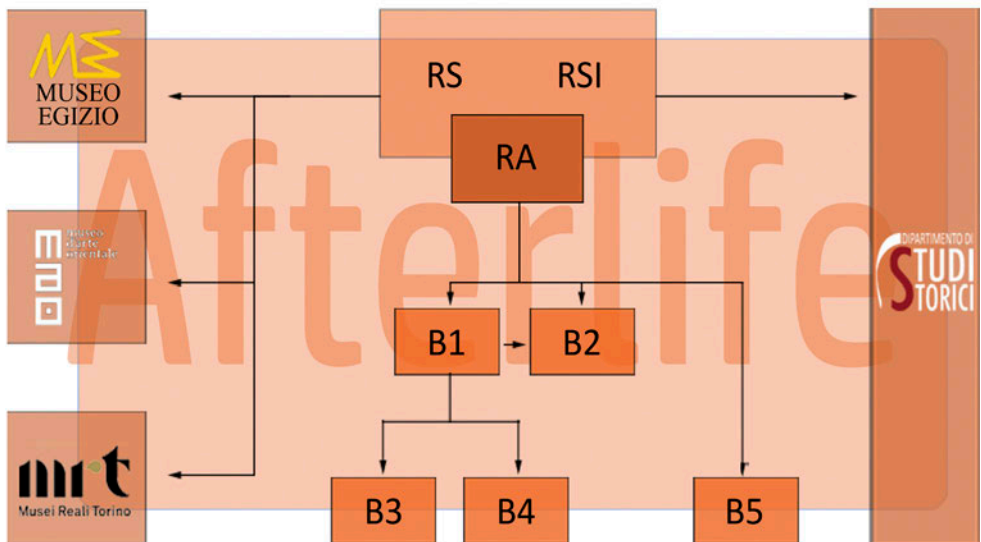
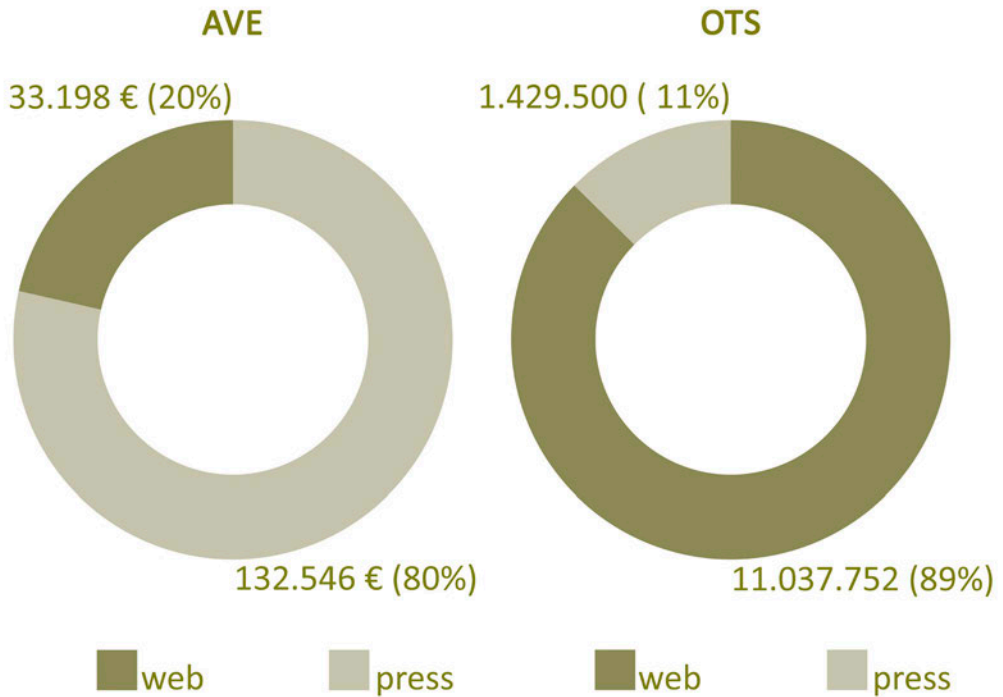


Fig. 2: The Afterlife PERT



TOT AVE	AVE press	AVE web	AVE other media
165.744 €	132.546 €	33.198 €	0
TOT OTS	OTS press	OTS web	DAY AVERAGE
12.467.250	1.429.500	11.037.750	74.209

Fig. 3: OSINT analysis of the project (in)visible Connections' outcomes (source: Fondazione Torino Musei)

