Reading, accessing, connecting cultural resources of Pozzuoli

Carlo Gerundo(ª), Guilherme Nicolau Adad(ª)

(a) Dipartimento di Ingegneria Civile, Edile e Ambientale, Università degli Studi di Napoli Federico II, Piazzale Tecchio 80, Napoli, 0817682319, carlo.gerundo@unina.it

Introduction

Urban settlements are the result of humans interacting with their environment, and these interactions produce the exceptional value of a particular urban agglomeration. The *Phlegrean Fields* (*Campi Flegrei*), in the Metropolitan City of Naples, is a unique territory due to the presence of a volcanic system that has influenced the circulation of the people and the settlement patterns of the constant urban development that has taken place in this site since the Greek foundation. Moreover, the *Campi Flegrei* have always evoked the image of ancient times, where "history and myth merge with landscape and nature". These picturesque features have inspired travelers, painters and writers from Italy and abroad from ancient times to the present day. Over the centuries, history has left traces that have resisted the changes and the development of society. In this sense, Pozzuoli and the *Campi Flegrei* contain many of these traces of the past, even if the information that they bring is not adequately safeguarded and valorized. As a matter of fact, the city of Pozzuoli currently lacks the integration of different elements that compose its natural and cultural landscape, as well as a connection to bind its cultural resources. This shortage makes difficult to do an overview of the importance of the city's heritage and to understand what makes it important.

Targets

In order to valorize the exceptional worth of the territory and to understand its dynamics over time, the aim of the present paper is to interpret and to create a method able to guide both local governments and private initiatives to understand the integrity of this cultural landscape, to link the geological characteristics of the site (the volcanic system and the bradyseism phenomenon) to the cultural heritage, and, eventually, to produce policies oriented towards its sustainable development.

The aim of the project described in the present paper is to propose a method that uses conventional and non-conventional data as geotagged social media data (GSMD) to collect, measure and interpretate information concerning the cultural ressources of a territory and to be used as a participative support for the debate and the decisions on the cultural and territorial planning discussion.

Methodologies and Techniques

In order to accomplish these targets, we propose an hybrid methodology based on two different data source: conventional data and "Big Data".

The first one, conventional data, consists in investigation of iconography, photography, cartography, archives, bibliography, databases and statistics data as indirect resources.

The second one is based on new non-conventional sources of geotagged information, as derived from social media like Instagram, Flickr and Twitter, known as "Big Data". In the age of social media, people use to share their experiences and emotions on the web, especially when they are surrounded by elements having such historical and natural relevance, as it happens in Pozzuoli and the *Campi Flegrei*. Therefore, this data source, known as *geotagged social media data* (GSMD), give possibility to analyze and collect precious information to interpretate spatial and temporal characteristics, as flux and frequency of people in a determinate site; and cognitives features, as perception and appropriation of a place (Chua et al., 2016). GSMD provides accurate data and contains user information that makes possible to build character profiles for demographic analyses.

Later, this information were added into a Geographic information system (GIS) software aiming at interpreting and analyzing them in order to understand the actual dynamics of the territory and to address specifics issues regarding its governance. It can be applied in a large-scale case study and englobe all the territory of the *Campi Flegrei* through quantitative indicators to determinate, for example, the flux and the frequency of the tourisme in the region, or it can be applied in minor-scale to analyze a lower quantity of data to read the actual perception of the space, by the cognitive interpretation of the content of each user entry. The second approach can also serves as an element of comparison between historical documents, as iconography and photography, to understand how a given place has developed across time.

Case study

This method were applied to the *Campi Flegrei* as a case study to characterize dynamics of urban cultural landscapes to seek its sustainable development, either in the touristic and cultural fields.

An interactive cultural mapping project were developed for the city of Pozzuoli, as part of a more extensive project of cultural planning, resorting to ESRI Story Map tool.

This work is the result of a process of collecting, analyzing and synthesizing information in order to identify the cultural resources, to understand them within their context and to create links between these elements.

Firstly, a cultural inventory based on several resources such as cartography, iconography, filmography and literature was set up. The result of this phase was the creation of a database that contains information pertaining to all forms of cultural resources, such as archeological sites and monuments localization, points of view of paintings over the centuries, movies scenes filmed in Pozzuoli (Figure 1, 2). Later, this information were interpreted over three different

levels (object, context and connection) and were added to a graphic map generated using ESRI Story Map.

Then, GSMD were imported in the map, filtering the contents through the hashtag #pozzuoli, aiming at displaying the most popular places in Pozzuoli and check if they match with the cultural resources previously identified (Figure 3).
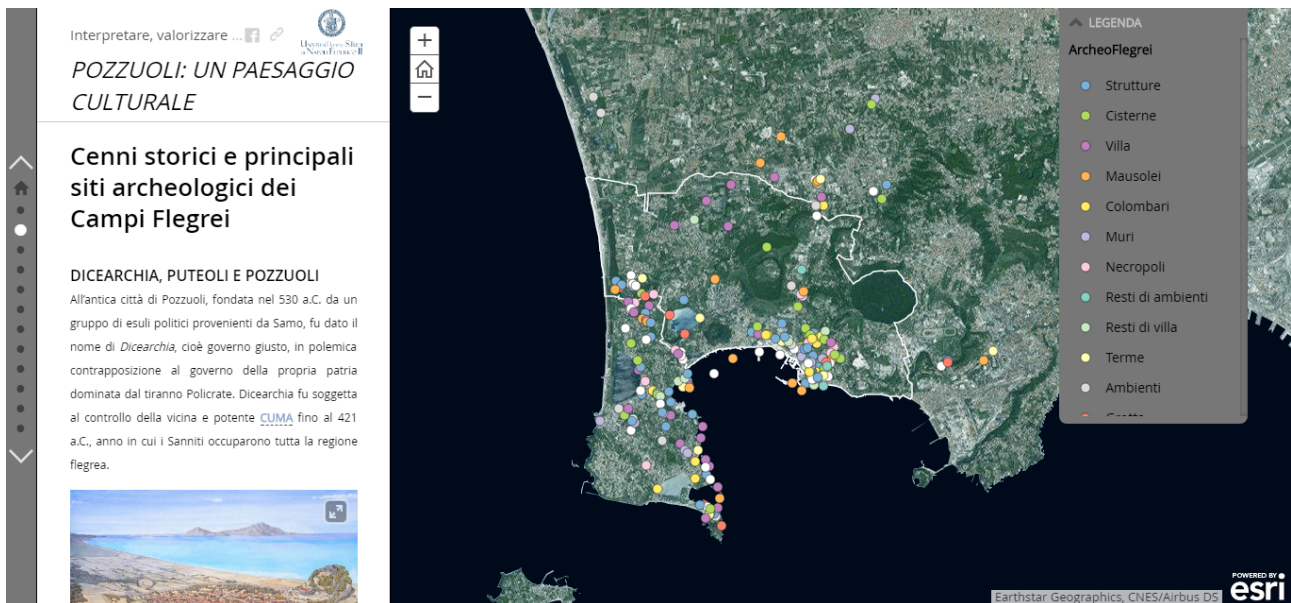

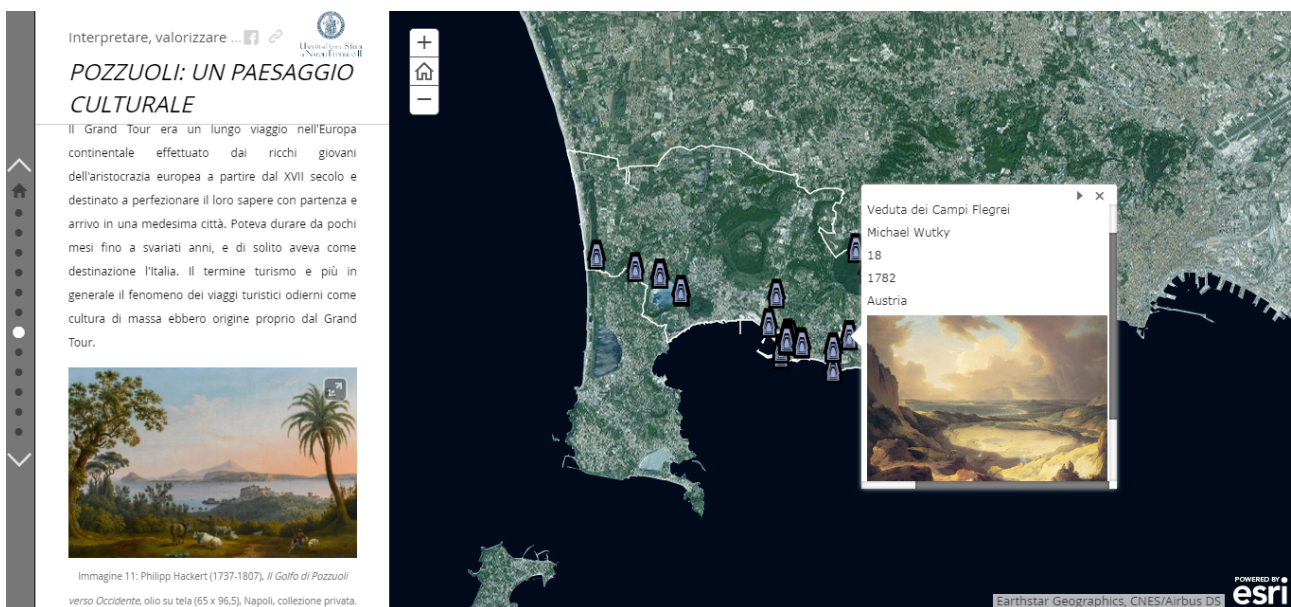*Figure 1 – Cultural resource map, archeological sites*

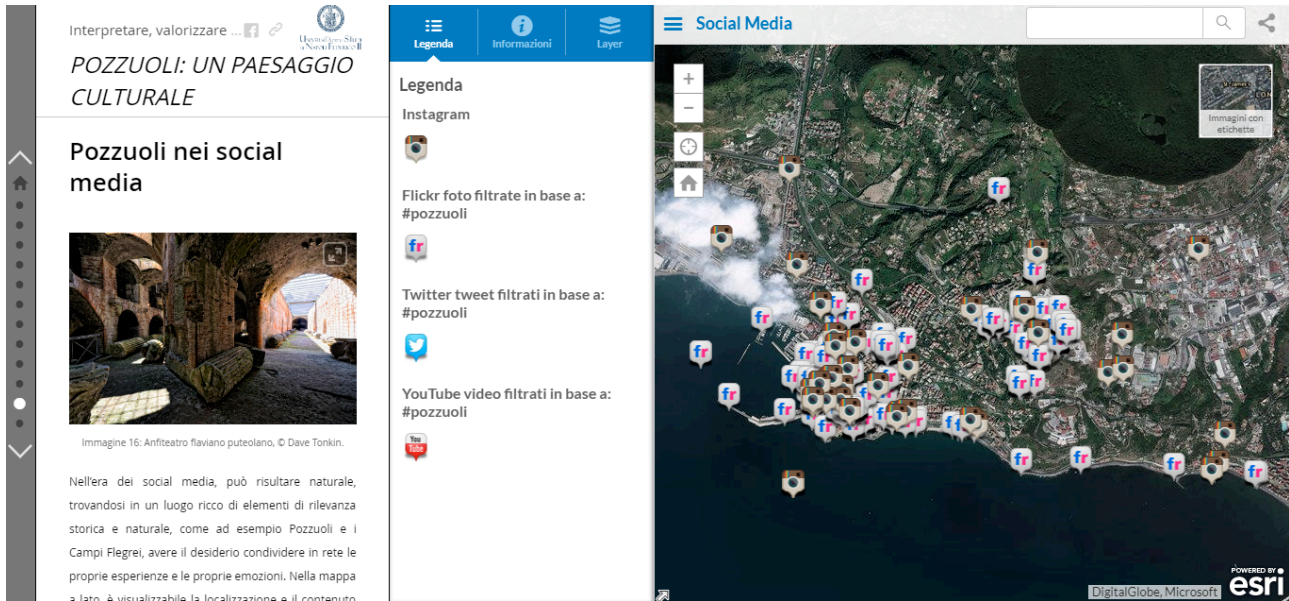*Figure 2 - Cultural resource map, geotagged paintings point of view*

Figure 3 - Cultural resource map, geotagged social media data

Conclusion

The aim of the project was to make freely available supporting material designed for the public, to be used by the municipality to promote Pozzuoli's cultural, economic and touristic potential. Moreover, we wanted to create a model that can be followed and applied in the future by other sites that intend their inscription as a Cultural Landscape on the World Heritage List of UNESCO.

References

Chua A., Servillo L., Marcheggiani E., Vande Moere A. (2016), "Mapping Cilento: Using geotagged social media data to characterize tourist flows in southern Italy", *Tourism Management*, 57: 295-310

Raso C. (2007), "Golfo di Napoli - Guida Letteraria: Da Cuma a Sorrento in 43 itinerari", *Franco di Mauro Editore*

Di Liello S. (2005), "Il paesaggio dei Campi Flegrei: realtà e metafora", *Electa*, Napoli.

Alisio G. (1995), "Campi Flegrei", *Franco di Mauro Editore*

Amalfitano P., Camodeca G., Medri M. (1990), "I Campi Flegrei: un itinerario archeologico", *Marsilio Editori*, Venezia.