AR&AI
urban enhancement

Rebuilding Amatrice. Representation, Experience and Digital Artifice

Giuseppe Amoruso
Polina Mironenko
Valentina Demarchi

Abstract

The Diocesan Museum of Amatrice, razed to the ground by the 2016 earthquake, exhibited works of sacred art but also materials on the building, the former church of Sant'Emidio, and on the territory. The grave loss provokes a reflection on the psychological significance of heritage, the lack of which creates disorientation among the population. Technologies help to regenerate the bond with the territory, to search for one's own identity not only in the tangible dimension, which is hardly visible today, but also in the relationship between objects, stories and meanings to be reconstructed. The research proposes a path of re–appropriation that identifies the semantic domains of the community and associates them in the territory through the dissemination of traces: images and stories are the new points of contact georeferenced around the voice of the protagonists. Two multimedia installations emphasize the evocative interaction between reality, memory and reproduction of the intangible to promote the common good of collective memory.

Keywords
cultural heritage, identity, storytelling, living experience, immersive technology.

Human Intelligence for Sensitive Places

The research project intends to represent part of the lost heritage through an immersive and interactive system aimed at the experiential involvement and dissemination of the contents of the Diocesan Museum of Amatrice with visual storytelling and interactive iconography methods. The museum before its physical reconstruction can be expanded through an installation of the *Digital Living Library*, a solution to make the oral history of the territory alive through the direct testimonies of citizens. According to the Nobel Prize for Economics Amartya Sen, social participation depends on what he defines as capability, that is, the ways that all citizens need to be able to exercise their rights as a practical expression of freedom [Saito 2003]. The research goal is to investigate a new format of experience, supported by new technologies through the application of two fundamental principles: emotional storytelling, which addresses the need of citizens to connect emotionally to places before getting involved in a cultural experience; and the suspension of disbelief, which highlights how people tend to approach this form of interaction mainly for reasons of leisure and socialization, so learning becomes a consequence of involvement without making the didactic purpose explicit. It is a process that supports the development and enhancement of specific but also general "skills" that can allow access to knowledge. The exercise of memory develops a cognitive sense that makes us reflect on the material aspects and the psychological state, in the cyclical "return" to the places that were and in the rediscovery of the very meaning of living. It is important to underline how sharing the different expressions of intangible heritage, as a participatory cultural activity, is central instead of somewhat peripheral in intervention in earthquake–hit territories. Instead of adding a level of subjectivity to tangible forms of heritage – buildings or collections –, these being lost or heavily damaged following seismic events, the multiplicity and diversity of the inhabitants' stories, memories, and experiences become the only possible way to preserve what remains in memory.

Fig. 1. A mobile interactive booth for installed in the civic space of Amatrice.

Moreover, this seems significant when time and money constraints often dictate that the cultural loss resulting from an earthquake is, at best, the last to be healed. If putting the rubble back together is not always possible, the use of technological but human–centered solutions can instead help to put together the experience and widespread knowledge of an entire community. Representing culture and human heritage in the digital age is the contemporary challenge for designers figuring out interiors for community centers, like a museum or a library or the new hybrid spaces designed as urban interiors [Amoruso 2019].
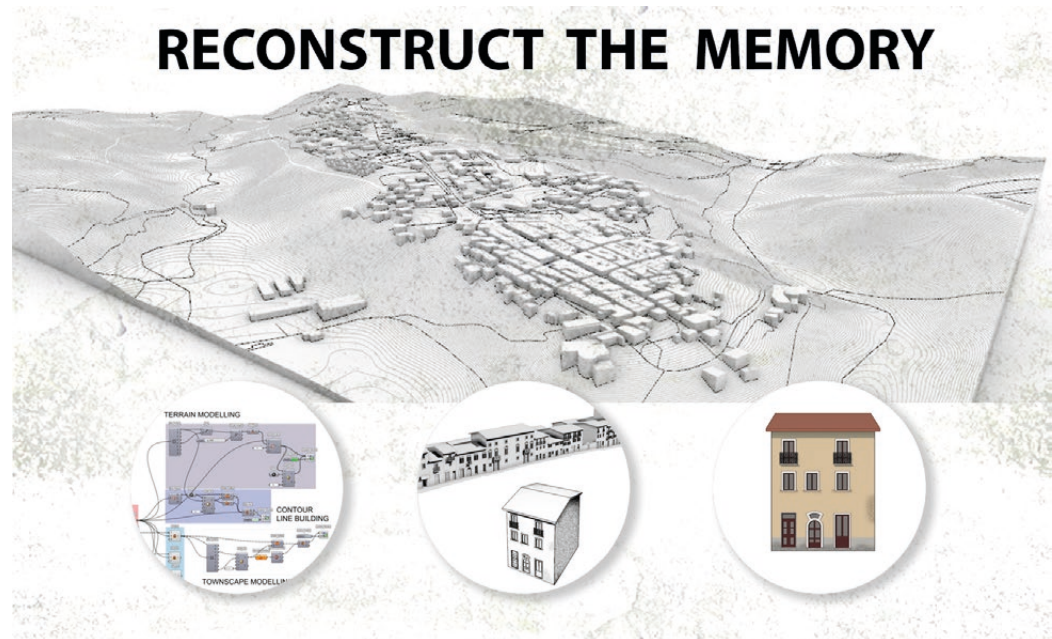
Social Objects and Emotional Storytelling as Design Strategy

Taking inspiration from the 'human library' phenomenon, that is, that a person's personal and daily history can become "culture" for other people. The experiential format for Amatrice is related to culture as a common good produced "from below" in a way. The project starts from the principles of *Design for All* [Stephanidis et al. 1998] and *Audience Development* [Bollo et al. 2017], intended as levers to expand cultural participation. Specifically, a *Design for All* approach ensures the physical and cognitive accessibility of the environments and tools with which visitors interface. This concept has significantly developed in the Human–Computer Interaction (HCI) literature following numerous researches [Stephanidis et al. 1998]. In terms of *Audience Development,* the project aims to reconcile the possibility, for people accustomed to enjoying cultural experiences, to have a 'deep' heritage experience, 'deepening' the so–called 'diversifying.' The project proposes two key concepts: the 'social object,' a concept theorized by sociologist Jyri Engeström in a broader theory called 'object–centered sociality' [Engeström 2005] and adopted in the museum by Nina Simon [Simon 2010]. 'Third entities' create processes of conversation and socialization between people who do not know each other. Recognizing the importance of artifacts, Simon suggests rethinking the objects in a museum's collection as points of contact for conversation, with oneself, the cultural organization and its staff, and the other participants, present and future. It is essential to specify that this process gives technology a strategic role, enabling this 'multilevel conversation', both in synchronous and asynchronous mode. In the field of Audience Development, the research body Morton Smyth had already spoken of the need for cultural organizations to use 'banner products,' or artifacts "that speak loud and clear to novices, suspicious, apathetic to the frightened: this is for the likes of you" [Morton Smyth 2004, p. 33]. Compared to the four categories of social objects identified by Simon, 'Personal,

Active, Provocative, Relational', the storyteller–booth falls within that of 'relational' objects, so defined because they explicitly refer to interpersonal use. As an emblem of a relational social object, Simon indicates the telephone whose use presupposes the presence of an interlocutor 'on the other side', despite its invisibility. The phone connects us, despite the distance. It allows us to listen and, at the same time, allows the exchange of the voice. In short, it places us in a dialogic state of openness to others. The second design principle is 'suspension of disbelief,' introduced by Samuel Taylor Coleridge in 1817. Typical of theatrical performances but increasingly adopted in the exhibition/museum environment (typically through immersive installations). The audience experiences the state of suspension of disbelief through extreme care and coherence of the contextual/scenic elements of the narrated world. Once this state is in the air, the viewer/visitor lives the experience represented as actual. This form of total absorption brings learning to an irrational level: the viewer lives the experience and only consequently finds himself having learned things. This dynamic is also the basis of gamification, which applies the technique of suspending disbelief in making the user act in the role of a character.

Technology–Driven Installations for Memory as Commons

In the case of Amatrice, the triggering of the suspension of disbelief is fundamental. A mobile interactive booth and an immersive space were presented to the Amatrice administration and the World Monument Fund and received positive feedback. Monuments Fund (WMF) is a private non–profit organization founded in New York in 1965, created to preserve historical architectural artifacts and sites of historical and cultural significance worldwide through fieldwork, promotion, and training funds of local experts. The WMF has turned its attention to the Cola Filotesio Museum not only because it represents the cultural wealth of Amatrice but also about the history and identity bond that the population has maintained and maintains with the city and its territory.

Among the social objects outlined by Simon, the project chooses relational ones, that is, which explicitly refer to an interpersonal use. The immersive installation enables suspension of disbelief that is the imaginative condition in which the individual arises to escape reality and 'enter' the fiction. This concept, central to the performing arts, also asserts itself in the exhibition/museum context, typically through immersive installations. In a society of continuous learning, it is essential to translate knowledge into accessibility. Furthermore, possibility between real and virtual nature, physical and digital, through information systems accessible locally: multimedia stations dedicated to the exploration of digital collections, touch walls to form immersive environments placed in the museum rooms to strengthen the communication of the rooms. The installation of an immersive space with three interactive walls of 6 square meters, each with e–REAL technology by Logosnet, is planned according to public communication and civic participation strategy. The user interfaces, with touch modes, but possibly expandable with eye–tracking and gesture systems, stimulate multisensory perceptions through the simulation of participatory scenarios inspired by the territory and the museum's collections. The interactive walls enhance the museum experience by making masterpieces of art accessible engagingly and interactively. The system integrates the visualization of the works with infographics. It allows exploring a cultural microcosm with the touch of hands and the fusion of real and virtual worlds. People are visiting a 3D scenario where they can interact with natural gestures and experience the world from different points of view at the same time. The dynamic contents to be explored in an immersive way are usually developed within a virtual Unity environment, a graphics engine that allows 2.5–3D views without glasses or wearable devices. C #, alternatively Javascript and Python, are the programming languages used to develop the components of the scenarios. A further objective is developing a mobile interactive booth intended to collect direct testimonies from citizens on the heritage of Amatrice, life stories, memories of the city to be georeferenced. The booth allows the recording of vocal contributions, according to a series of topics, issues, and keywords divided into thematic sections: territory, history, places, traditions, people. Inside the mobile interactive booth, among the features provided, there is an interactive electronic whiteboard called e–Wall (writing, drawing, and painting, manipula-

tion of images and virtual objects). The system includes a voice recognition system that allows voice commands for the functioning of the e–REAL system, for example, through the use of ''formulas'' to make digital objects appear.

Conclusions

Therefore, the research project proposes a new idea of a temporary and experiential museum as a cultural garrison and for the transmission of memory and spatiality that digitally expands into the immaterial dimension of informal accessibility and discovery. Technologies are changing the relationship between users and the environment of use of cultural content in museums, libraries, and learning places. The environments are transformed considering their virtual extension and allowing a range of customization linked to content selection. To these, Manovich also adds the interactive cultural experience, the possibility of enjoying cultural experiences and products by visitors, textual, voice, and visual communication, and participation in a sort of information that regenerates 'ecologically' knowledge and its dissemination. Rebuilding Amatrice is a complex artifice with an uncertain outcome. In respect of the cultural heritage, it finds its form through the values of living and the experience of those places that only its community knows.

References

Amoruso Giuseppe (2019). Drawing as an experience. Knowledge, simulation and participation. Experiential Design for Heritage and Environmental Representation. In *DISEGNARECON*, 12 (23), pp. 1-10.

Bollo Alessandro, Carnelli Luisella, Macarena Cuenca, Cristina Da Milano (2017). Study on audience development. How to place audiences at the centre of cultural organisations. https://op.europa.eu/s/oAYm (10 June 2021).

Engeström Jury (2005). Why some social network services work and others don't – Or: the case for object–centered sociality. http://www.zengestrom.com/blog/2005/04/why-some-social-network-services-work-and-others-dont-or-the-case-for-object-centered-sociality.html (10 June 2021).

Manovich Lev (2002). *The Language of New Media*. Boston: Mit Press.

Morton Smyth (2004). Not for the likes of you: How to Reach a Broader Audience. https://www.culturehive.co.uk/wp-content/uploads/2013/04/Not-for-the-Likes-of-You.pdf (10 June 2021).

Saito Madoka (2003). Amartya Sen's capability approach to education: A critical exploration. In *Journal of philosophy of education*, 37 (1), pp. 17-33.

Simon Nina (2010). *The participatory museum*. Santa Cruz: Museum 2.0.

Stephanidis Costantine, Akoumianakis Demosthenes, Sfyrakis Michael, Paramythis Alexandros (1998). Universal accessibility in HCI: Process–oriented design guidelines and tool requirements. In *Proceedings of the 4th ERCIM Workshop on User Interfaces for all,* p. 19-21.

Authors
Giuseppe Amoruso, Dept. of Design, Politecnico di Milano, giuseppe.amoruso@polimi.it
Polina Mironenko, Dept. of Design, Politecnico di Milano, polina.mironenko@polimi.it
Valentina Demarchi, Dept. of Design, Politecnico di Milano, valentina.demarchi@mail.polimi.it