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Communicating Heritage Through Contemporary Art Based on Technologies: a Proposal for the Heritage Sites in the WARMEST project

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Abstract. An integrative and innovative communication model to enhance the knowledge, comprehension and delectation of cultural and natural heritage through technology-based contemporary art is described. By relating these two traditionally dissociated fields (heritage and contemporary art), a particular form of dialogue between them occurs and it is transferred to society within an emotional and intellectual discourse away from those merely informative. The heritage sites Alhambra Lions Court in Granada (Spain), Santa Croce's second cloister in Florence (Italy) and Marzamemi underwater Wreck of Church (Italy) are under study in the framework of the European research and knowledge transfer project, WARMEST³. A strategy of communication based on pieces and actions of contemporary art will be proposed to set up a new frame in the diffusion of the cultural and natural legacy. That will encourage its preservation and, at the same time, will set up a new research line around site specific art work related to heritage sites communication.

1. Introduction: communication of heritage through contemporary art based on new technologies

The value of cultural heritage is now widely appreciated and there is a need for it to be stimulated making its dissemination and understanding more attractive to society and providing a contemporary point of view which promotes not only its use but also its preservation (García-López, A. & Mazuecos, B., 2011). New lines of research have appointed new horizons for the dissemination of cultural heritage, as the application of new non-invasive technologies which aid this dissemination and creates a constructive and significant dialogue with visitors (Bellido-Gant, M.L., 2008).

The contemporary art projects that communicate heritage through new media and technologies, spread awareness and enhances cultural inheritance and art to society within a common cultural space.

³ WARMEST (loW Altitude Remote sensing for the Monitoring of the state of cultural hEritage Sites: building an integraTed model for maintenance) is an European Project funded through the RISE (Research and Innovation Staff Exchange) in 2017, active until 2021. All information in <https://warmestproject.eu>



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These artworks are based on a wide spectrum of technological tools and strategies, such as interactive environments, net art, virtual spaces, augmented reality, video art, Vjing, video installation, video surveillance applied to art, virtual reality, mobile devices, GPS, art with code QRs, sound sculptures, 3D printing, sound environments, sound sculptures, Vdj, drones, and many others... Being all of them profusely used resources in contemporary scene to build innovative pieces that connect the heritage site (container) with the contemporary art piece (content). The experience for the visitor alludes directly to the senses and has the capacity to constitute an emotional and intense impression whose impact lasts in the receptor's memory.

On the other hand, a temporal coincidence is occurring in the emergence and consolidation of certain forms of contemporary art which question the traditionally authorised repositories of art (namely museums and galleries) and which explore the use of non-specific contexts as solutions for bringing contemporary creations closer to society (Ardenne, P., 2002). As a result, cultural and natural heritage call for new communication strategies and, at the same time that contemporary art and artists require new spaces which connect them to society in a more direct and transverse way. We are proposing a comprehensive communication process, which connects society to the communication between heritage and contemporary creations, following a strategy that is described in the following points:

- Offering a new set of communication strategies for cultural and natural heritage based on their close association with contemporary art, taking the legacy of natural, cultural and underwater heritage sites as a starting point.
- Awakening the visitors' interest in heritage and contemporary art as an experience connected to the senses, which proposes an immersive, holistic and deep experience away from strategies that are limited to offering information (as is usually the case with traditional communication mechanisms such as websites, leaflets, posters, etc.).
- Communicating heritage and contemporary art with an educational purpose, which enables Visualization (and even participation) in the actual creation process and not just the resulting piece.
- Developing a new model of cultural consumption characterized by sustainability, and able to create new culture and identity awareness.
- Promoting social integration bringing different population groups closer creating new consumers (not just cultural consumers), by attempting to raise awareness among new generations and to integrate individuals from different social strata (García-López, A. & Mazuecos, B., 2011).

2. Background: Case studies in Granada (Spain) within the framework of the SPORA International Ephemeral Art Exhibitions (2008, 2009) and the Biennial of the Millennium of the Kingdom of Granada (2011)

As background, we are presenting various case studies that were developed in the frame of the two editions of the International Exhibition of Ephemeral Art in Granada "SPORA" (2008 and 2009) and the Granada Millennium Biennale (2011) that took place in Granada (Spain), making special emphasis on art pieces based in new technologies.

These three artistic events suggest the use of cultural and natural heritage for the development of contemporary works of art, providing new substrata of research topics and reflection to artists, whose creations enter into true dialogues with these new spaces, promoting art forms which are capable of communicating both with the environment in which they are placed and with the public. When presented in symbiosis, contemporary art and heritage powerfully activate each other's essence and a mutually beneficial communicative nexus thus arises. This benefit constitutes an effective yet sustainable model for conveying both art and heritage to society, becoming a powerful instrument for social integration which brings both realities closer to a non-specialist audience (Mazuecos, B. & García-López, A., 2014).

The exhibitions spread artworks along an itinerary bounded by the waters of the Rivers Darro and Genil, the two ends that exemplifies the dichotomy within the Traditional and Contemporary. At one end, there is the Sacromonte district, which is an exponent of tradition, of artisan crafts, a neighborhood with great historic backdrop. Diametrically, at the opposite side of the itinerary, there is the city museums district, with the Museum and Cultural Centre of the Historical Memory of Andalucía and the Science Park Museum, being both buildings representative of a modern city moving with the times. Between these two ends, the route weaves its way throughout the city streets, marked out by iconic buildings as the Alhambra, the Bañuelo (the Arab Baths) and the Palacio de los Córdoba (Palace of los Córdoba), and along natural spaces such as the Darro and Genil riverbanks. Over this background, we set out our analysis of the work of some of the artists invited to take part in these artistic events. These artistic projects bring site specific art and new technologies closer to society within a common cultural space:

ABRAHAM MANZANARES (Spain, 1971) / *ISÓS* (interactive video mapping)
Zaida Building (20th Century), Granada
Granada Millennium Biennale. 06 Nov. 2011.

The attempt to tame architecture is quite clear in the piece *ISÓS* by Abraham Manzanares (Spain) who "virtually" explores the malleability of building materials through the use of light and sound, even managing to dissolve physical boundaries. The *ISÓS* project was specifically designed to be projected onto the Zaida Building (designed by architect Alvaro Siza) in the iconic Fuente de las Batallas plaza in Granada. The participation of the public is crucial since the projection reacts to sounds and voices through microphones in the plaza. The artist explains that *ISÓS* is "an interactive piece of work, where visual perceptions and a large amount of geometries come into play, whether they come from the building itself or even the city", in a clear reference to the use of geometrical shapes in Islamic buildings.

SOLEDAD GÓMEZ and **MIGUEL VALDIVIA** (Spain, 1979) / *GRANADA METADATA* (installation and QR)

Plaza del Campillo (city center), Granada
Granada Millennium Biennale. 26 Nov. - 17 Dec. 2011

The artists Soledad Gómez and Miguel Valdivia (Spain), one a museologist specialized in new technologies and the other an architect, designed the project *GRANADA METADATA* which combines art and technology to create a piece in which various levels of information exist together. It was a piece that showed, on one side, a large two-dimensional Quick Response type code, and on the other a planimetry showing the itinerary of the Biennale. The platform of the QR code was, simultaneously, a piece of art and an element containing information, which could be downloaded to mobile phones. This milestone on the landscape artificially creates a meta-reality that imposes itself more strongly than reality itself, emerging in the mobile phones of users.

JAVIER ÁLAMO (Spain, 1985) and **JAVIER MELGAR** (Spain, 1975). *AL-ABRID, AL-WASTANI, AL-SAJUN*. (sound, light and video mapping installation)

Bañuelo (Arabic Baths) 11th Century.
Granada Millennium Biennale. 26 Nov. - 17 Dec. 2011

The project *AL-ABRID, AL-WASTANI, AL-SAJUN* based on the history of El Bañuelo and the importance of architecture, light and sound in these Arab baths, also known as "hamman" was created by Javier Álamo and Javier Melgar (Spain). Each of the rooms (Cold Room, Warm Room and Hot Room) is used to create a visual, sound or light exploration that in each case transports the visitor back to the 11th century Granada and to the use for which the building was originally designed. The creators of this piece are two young artists interested in new technologies and sound. Both have studied composition and improvisation and new technologies applied to dance.

GEORG PETZOLD (Germany, 1979). *A BREATH VIBRATES ON THE WATER*. (video installation)

Genil jetty in the city center.
SPORA 08. 19th Dec. 2008

Petzold takes one the most important element of Granada's ancient Islamic cultural identity, water, to present a sound and video installation. The waters and bank of the river in Brandenburg, Germany, were filmed over the course of a whole day in the autumn of 2008. The recorded material was then manipulated by the artist to create a film loop, which was subsequently projected onto the flowing water of the Genil in Granada. Knowledge of water as an asset and man's relation with this resource is demonstrated so as to understand that it is a scarce good. The artist's objective is to make us more aware of this fertile asset and to get the public to pay more attention to it.

MIGA (Art collective. Spain). *VMX101* (video mapping on architecture)

Aliatar Cinema Facade (20th. Century)

SPORA 08. 20th Dec. 2008

The architecture of the Aliatar cinema building in Granada is used as a screen for the video as a creative connection and the sound as a diffusing source in an interactive piece in which the public is called upon to participate, modifying the work in real time. The audiovisual pieces are created from sequences, manipulated in real time and in synchrony with the architecture and the space, using the loop as a starting point, both in the image and in the sound field. This type of pieces based on Vjing applied to contemporary art has had a great development in the last years and constitutes a new context for artistic research on image in motion and sound.

ELISABETH LUMME (Germany, 1959). *NO CONDITION IS PERMANENT*. (Expanded digital real time drawing over walls)

Bañuelo (Arabic Baths) 11th Century

SPORA 09. 15 - 20 Dec. 2009

German artist Elisabeth Lumme created virtual drawings with her work *NO CONDITION IS PERMANENT*. Lumme created virtual drawings that reflected the movements of the camera and the shapes and surfaces of the historic walls of the Bañuelo. In a dual screening, the video by Lumme mirrored different modes of perception, some slower and others faster, while at the same time suggesting utopian ideas about the place and its history. In reference to Moorish and Christian Andalusia, fleeting light patterns could be seen on the walls and ceiling. As a work in progress, visitors were invited to participate by adding new color patterns and drawings.

CARLES GUTIÉRREZ and **DANIEL ROJAS** (art collective). *INTERACTIVE SOCIOGRAM*. (interactive installation)

Hotel Ladron de Agua (16th Century)

SPORA 09. 15 - 20 Dec. 2009

The work *INTERACTIVE SOCIOGRAM* by Carles Gutiérrez and Daniel Rojas (Spain) is an installation that reacts to the presence of the people who pass through the space. It offers the possibility of interaction between them, through images and sounds generated from their relative position and their movement. The project aims to be an exploratory approach to the relationships that are established between people, particularly when they share the same space, at the same time, graphically representing the links that are created between them. It aims to investigate how the experience of being in one place is conditioned by the presence of others. The visualizations and sounds can be modulated voluntarily by the users themselves, as they move around the installation and modify their spatial situation with respect to other people. The installation is an exploratory and immersive space, which stimulates the creation of ritual dynamics among the participants.

ISIDRO LÓPEZ APARICIO (Spain, 1967). *HIDDEN REALITY*. (video installations in city center shop windows)

SPORA 09. 15 - 20 Dec. 2009

HIDDEN REALITY is a project based on the paradox of capturing the hidden spaces in the vast spaces of Alhambra citadel and gardens to put them it on display in the windows of Granada city center businesses. Historical places, which lie beyond the usual tourist circuits, are extrapolated to the "market of objects and images". All passers-by could access the hidden world of the Alhambra, which was exhibited by integrating it into the same visual codes as the world of business, where the shop windows compete for attention. The short film on display is a work of video art in which the creator, who uses

mirrors to provide a reinterpretation and a new discourse of these spaces, has documented forgotten hidden places alongside an action.

To summarize, the works reviewed constituted an effective strategy for communicating the tangible cultural heritage (architectural, urban, artistic...), intangible (local crafts, oral and written traditions, etc.) and the natural heritage of the city of Granada. There was an international meeting of artists from different cultures who used the city's heritage as a support and inspiration for contemporary art works using different procedures and technologies. This meeting and coexistence of the artists with the inhabitants of the neighborhood and Granada society in general, produced an exchange of enriching experiences and the dissemination of the city in all its spheres, historical, environmental, cultural, etc. through a direct, unique and persistent communication experience for the visitor



Figure 1. *Interactive sociogram*



Figure 2. *Hidden Reality*



Figure 3. *VMX101*

3. A proposal for the heritage sites of the Alhambra, Marzamemi and Santa Croce in the framework of the European project WARMEST

3.1. Objectives of the WARMEST project

The object of our study on communication strategies through contemporary art are the three heritage sites under study within the WARMEST (loW Altitude Remote sensing for the Monitoring of the state of cultural hEritage Sites: building an integraTed model for maintenance) project, an European Research and Innovation Staff Exchange Project within H2020 program of research and knowledge transfer between SMEs and research institutions.

WARMEST has two well defined strategic goals: on the one hand, it aims to develop and intelligent decision support system that will result in a tool named Cultural Heritage Risk Analysis (CHRA), capable of suggesting improvements in maintenance and risk management procedures in the cultural heritage spaces. It will be able to anticipate future scenarios, based on the acquired data that will help maintenance services of the heritage staff and departments, establish an accurate strategy of conservation in climate change and global warming scenario. On the other hand, in line with the concern on the impact that new communication tools and strategies that the EU encourages in all the funded projects, WARMEST offers a second line of research based on new strategies of communication approaches based on contemporary art activities applied to the heritage sites under study. This strategy will as well help communicate very complex highly technical processes that undertake in the project.

The value of image in the processes of scientific communication is indisputable and is being increasingly taken into consideration since it manages to transfer information to a wider public (Pascolini, A., 2006; Trumbo, J., 2006) allowing to optimize "scientific popularization" (directed to the general public) instead of just emphasizing "scientific communication" (between scientists).

Michela Sarzotti (2010) cites four levels of communication of scientific research results, described by Cloutre and Shinn as:

- **Intrasectoral** (Intraspecialist): typified by the specialized academic publication with empirical data, supporting theory, and references to other key words.
- **Intersectoral** (Interspecialist): including those texts and presented papers that bridge between related academic specialisms.
- **Pedagogical**: on the textbook stage of communication. In which the completed theory and paradigm is presented and set within a historical perspective of disciplinary progression.
- **Popular**: in which characteristic images and analogical metaphors are presented in the popular press and broadcast documentary.

In this sense, the visual component, and the contemporary art pieces in particular, have the potential to act as a catalyst for the popularization of science, managing to effectively transmit the specific results of the research developed within the framework of the WARMEST project, on the one hand, and, on the other, to value the heritage sites themselves in an innovative way.

3.2. Description of the three heritage sites

3.2.1. “*Patio de los leones*” (“*The Court of the Lions*”). *Alhambra Nasri Palaces (Granada)*. Commissioned by Mohamed V, Sultan of the Nazarí Kingdom of Granada, construction began in 1377. It has a rectangular floor plan, and is surrounded by a gallery in the style of a Christian cloister, supported by 124 white marble columns with a fine shaft, which have a multitude of rings on the upper part, and hold cubic capitals and large abacuses, decorated with inscriptions and *ataurique*. Under the carved wooden frieze there are arches made of pearly plaster. The two centers of the longest sides of the courtyard have semicircular arches and have *muqarnas* archivolts. These arches communicate the courtyard with the Sala de los Abencerrajes and the Sala de Dos Hermanas. Above these arches we can distinguish the rooms of the sultan's women. In the center of each of the short galleries are the pavilions, which advance over the courtyard, with a square floor plan and covered with semi-spherical wooden domes inside. The center of the courtyard was a low garden and the floor of the galleries was made of white marble. This garden has undergone many modifications over the years. It has some white marble channels that start from the interior of the pavilions and under the gazebos, which converge in a central fountain in the shape of a cross with twelve lion spouts, from which the courtyard takes its name. At the ends of the canals there are some jets that provide water to the fountain.

3.2.2. “*Relitto delle Colonne*” (“*Wreck of Columns*”). *Marzamemi (Pachino, Siracusa)*. This underwater site is located about half a mile from the coast of the fishing village of Marzamemi (Pachino, Siracusa) in Sicily. The historical-etymological roots of Marzamemi go back to the period of Arab domination (al-Idrisi, an Arab geographer from the 12th century, gave it the name of “Marsa al Hamam”, that is translated as “roadstead of the turtledoves”), a period which also dates back to the creation of one of the main tuna factories in Sicily (Correale, N. & Ruggiero, V., 2011).

The finds (marble columns - Ancient Greece III sec. d.C.) mostly of semi-finished columns and squared blocks that could be used to make bases or capitals, is thought to come from the cargo transported by a ship of Roman times and lie at a depth of 7 metres. Nothing remains of this 3rd century AD wreck and its wooden elements because the ship sank on a rocky seabed that exposed it to the action of sea water that completely eroded it. The marble from the present island of Marmara is of oriental origin, with its typical white colour with blue veins. The columns and blocks have variable dimensions, in particular a column isolated from the main core of the cargo is presented with exceptional measures, 6.40 meters long with a diameter of about 185 cm.

3.2.3. “*Il chiostro del Brunelleschi*” (or “*Brunelleschi’s Cloister*” or “*2nd cloister*”). *Santa Croce Basilica (Florence)*. It was completed in 1453, seven years after Brunelleschi’s death, probably by Bernardo Rossellino and other disciples like Giuliano da Maiano (Franchi, M., 1980) Nevertheless, its structure contains the spirit of the great Renaissance architect and to him we owe the original design. The client was Tommaso Spinelli, a wealthy banker. The lower portico, on 32 columns in *pietra serena* stone, has cross vaults, while in the upper loggia thin columns support an entablature; Between arches the cloister was decorated with beautiful graffiti, now torn out and awaiting relocation, attributed to Bernardo Rossellino (Franchi, M., 1980). In the spandrels of the arches are inserted two, rounds with Spinelli coats of arms⁶, currently very deteriorated due to the passage of time.



Figure 4. Court of the Lions, Alhambra **Figure 5.** Santa Croce’s Cloister **Figure 6.** Wreck of Columns

A proposal of application to the sites under study has been developed: residence of artistic production in heritage and contemporary art and exhibitions in the different heritage contexts. The proposal aims to promote awareness and appreciation of cultural heritage (with special emphasis on underwater heritage, as it is less accessible) through contemporary art and artistic languages based on technology. Besides, it targets to encourage the critical reflection that can generate and derive in the promotion of the respect to nature and the sustainability of the environment, to the cultural diversity, to the preservation of the cultural heritage and the dialogue between cultures.

3.3. Theme: water as a driving vehicle.

Water is proposed as a theme that underlies the conceptual idea on which the let motiv of the artistic residence is built and which is, somehow, common to the three heritage sites. On the one hand, the Mediterranean Sea covering the Marzamemi site as a link between the different contexts, a place of historical interaction and a vehicle for transmitting culture, present in its social, cultural and territorial context along its coasts which are identified through signs of common identity. On the other hand, water is a fundamental element in the Muslim culture to which the Alhambra of Granada belongs. Its aesthetic, religious and practical function in the Alhambra enclosure, especially in the Court of the Lions, the central courtyard of the Riyadh Palace. The great dodecagonal cup that is supported by the figures of twelve lions distributed in a circle, is part of a hydraulic set to which are added ten other secondary fountains and two perpendicular channels that enter and leave the porticoed rooms and the interior rooms, to converge again under the main fountain, thus making a closed circuit where the water flows in a coming and going of great visual effect. The water in the Alhambra is organised on the basis of an authentic medieval prodigy of hydraulic engineering that has been supplying the medina and its orchards and gardens since 1238.

Finally, the water of the river Arno which left a mark of devastation and destruction on the heritage of the city of Florence when in 1966 it overflowed and covered a large part of the city with mud and silt for more than four days (Giannelli, L., 1996). A listing of floods (in different years: 1177, 1333, 1547,

⁶ http://www.santacroceopera.it/it/ArchitetturaEArte_SpaziChiostrri.aspx (20/12/19).

1557, 1966), devastating or not, marks the history of Florence, and in particular of Santa Croce (on November 4, 1966 the water level in Santa Croce reached 4.88 meters in the first cloister) (Sebregondi, L., 2006), until today (it should not be forgotten that during November 2019, a tremendous storm hit Italy, breaking a new record for high water in Venice, unprecedented since 1966, and the Arno was about to be flooded again).

In this way, a suggestive cultural itinerary is traced that links three distant heritage contexts through water as a thread; contemporary art based in new technologies placed at their service (since their irruption in the era of the "post-industrial" economy has modified many aspects of the society in which we live, having a great impact on art as well) (Granelli, A., 2006). The objective of the action is the dissemination of heritage through contemporary art. An approach to research and artistic production that raises a reflection on the heritage sites under study in the WARMEST project (paying special attention to the submerged heritage in the archaeological site of Marzamemi, Sicily, in order to optimize its accessibility). Projects will make creative use of technology, and even use the data collected by researchers in the project to produce art pieces.

To this end, an audiovisual piece that contextualize the project and the different sites under study, Relitto delle colonne (Marzamemi), Santa Croce 2nd cortile (Florence) and Patio de los Leones de la Alhambra (Granada), is under production. Besides, in each site, an exhibition will be held with the participation of WARMEST research artists and local artists invited to promote knowledge transfer. The themes focus on the cultural heritage Marzamemi, Alhambra and Santa Croce. In addition, cross-cutting themes to the communication strategy are offered to artists, such as the impact of climate change on heritage conservation, sustainable cultural tourism, Mediterranean and cultural transfer through water, Natural disasters and their impact on heritage conservation (floods, earthquakes, tsunamis, etc.), the exploitation of resources, submerged wreckages, pollution and other damage factors, maritime cultural landscape, plundering, etcetera. An annotated catalogue will be published with the results of the exhibitions, as well as publication of articles in impact international journals.

Local collaboration will also be critical: Soprintendenza del Mare (Italia), Alhambra Patronage, Museo Riso di Palermo, Accademia di Belle Arti di Palermo, Fine Arts Faculty at the University of Granada, the Tonnara private heritage building in Marzamemi are already on board, and others yet to be defined. Also, International collaborations will be seek such as UNESCO or the ArtMill Center for Sustainable Creativity.

4. Conclusions.

In today's information societies, which are permeated by visual culture, communication through visual arts is becoming increasingly important to disseminate scientific research in general. This strategy has proved to be particularly effective in heritage-based research, especially useful in situations of non-accessible heritage (as in the case of underwater heritage), to provide access to handicapped public or to extend the information given as to show the process an excavation, or musealization. The connection between heritage and contemporary art become an effective means of communication which has proved to be an effective tool for communicating data and showing processes to the non-specialist visitors and public. Thus, the different projects created by the artists on the same heritage site provide a stratified textual density on different readings which articulate a more complex interpretation of the location, highlighting different aspects of the same site. This offers society, as the audience, distinct and varied interpretive keys, reinforcing historic memory and strengthening cultural identity. Technology-based art pieces are capable of transforming complex information more accessible to the general public providing a sensitive and lasting experience that will remain in their memory.

The comprehensive communication model put forward and tested in the specific case of the city of Granada highlights certain contributions, with emphasis on the following:

- Contribution to the scientific theoretical framework concerning strategies for the communication and dissemination of heritage by implementing a model which can be extrapolated to other cities.

- Contribution to the promotion of research lines for contemporary art which link the Traditional with the Contemporary based on the relationship between contemporary art and tangible and intangible heritage.

As such, a framework is created for the dissemination of our cultural and natural legacy which promotes its preservation while also opening lines of research and topics for reflection concerning contextual artistic creation, providing a contemporary perspective on heritage. This sustainable model for communication and for immersion in heritage and contemporary art simultaneously becomes a powerful instrument for social integration which brings both realities closer to a non-specialist audience. All things considered, the implementation of the model which has been put forward gives rise to an enormous quantity of positive external factors for the sites in which it is developed, as it energizes the provision of culture, increasing cultural tourism and contributing to boosting the local economy.

The model is applicable to the three heritage sites under study, although it is necessary to take into account the great differences in the perception and dissemination of each of them by the visiting public. Thus, while the Alhambra site is the most visited site in Spain and Santa Croce also receives a very high number of visitors, on the other hand, the Marzamemi underwater complex needs a greater dissemination action, since the difficulty of access and the lack of communication strategies mean that it is very little known. However, the results will be equally conclusive in terms of the effectiveness of communication, since contemporary art adds highly effective communicative values in all three cases.

References

- [1] Ardenne P 2006 *Contextual Art. Artistic creation in urban areas, site specific art, installation art, action art* (Murcia: Cendeac)
- [2] Baldini U and Nardini B 1983 *Santa Croce. La Basilica, le cappelle, i chiostrì, il museo* (Firenze: Nardini Editore)
- [3] Bellido Gant, M L 2008 Difusión del patrimonio cultural y nuevas tecnologías, chapter VI: *NTIC y Museo: nuevas formas de Difusión Participativa del Patrimonio Material e Inmaterial* in MORENO SÁNCHEZ, I Ed. UNIA, Seville.
- [4] García-López A and Mazuecos B 2011 Implementation of strategies for a comprehensive communication model between Cultural Heritage, Contemporary Art and Society. *The international journal of the arts in society*, Volume 6, Issue 4, <http://www.arts-journal.com>, ISSN 1833-1866.
- [5] Correale N and Ruggiero V 2011 *Il Festival Internazionale del Cinema di Frontiera. Marzamemi tra svago, cultura e competitività territoriale* (Milano: Franco Angeli)
- [6] Giannelli L (a cura di) 1996 *L'alluvione '66: ricordi, memorie per il futuro* (Firenze: Scramasax)
- [7] Granelli, A 2006 La tecnologia al servizio dell'arte in *Oltre il territorio: la promozione di itinerari turistici culturali alternativi e le tecnologie digitali: atti del convegno internazionale : 26 maggio 2005, Cenacolo di Santa Croce Firenze* (Firenze: Polistampa)
- [8] Franchi M 1983 *Santa Croce: la chiesa, i chiostrì, il museo* (Firenze: Becocci)
- [9] Maarleveld T, Guérin, U and Egger, B. (eds.) 2013 *Manual for Activities directed at Underwater Cultural Heritage. Guidelines to the Annex of the Unesco 2001 Convention* (Paris: Unesco). <http://www.Unesco.org/culture/en/underwater/pdf/UCH-Manual.pdf>. [Accessed:27/02/2015].
- [10] Mazuecos A B and García-López A 2014 The Extendable Museum: Art Prosthetics Overlaid on the Natural and Urban Environments in the First Granada Millennium Biennale Event. *The international journal of Social, Political, and Community agendas in the arts*, Volume 8, Issue 2, <http://www.arts-journal.com>, ISSN: 2326-9960
- [11] Micheletti E 1982 *Santa Croce* (Firenze: Becconi Editori)

- [12] Moisé F 1845 *Santa Croce di Firenze. Illustrazione Storico-Artistica* (Galileiana: Firenze)
- [13] Mossetto G 1992 *L'economia delle città d'arte, Modelli di sviluppo a confronto, politiche e strumenti di intervento* (Milano: Etaslibri)
- [14] Patronato de la Alhambra y el Generalife 2018 *Memoria 2018. Conjunto Monumental de la Alhambra y el Generalife*. Retrieved from: <http://www.alhambra-patronato.es/wp-content/uploads/2019/10/patronato-alhambra-y-generalife-memoria-2018-1.pdf> (02/01/2020)
- [15] Pascolini, A 2006 Immagini e comunicazione scientifica: dalla descrizione all'evocazione, in Pitrelli N and Sturloni G *La scienza nella società del rischio. Atti del IV Convegno Nazionale sulla comunicazione della scienza* (Monza Polimetrica International Scientific Publisher)
- [16] Rosito M G 1996 *Santa Croce nel solco della storia* (Firenze: Edizioni Città di Vita)
- [17] Sarzotti M 2010 Il ruolo della componente visiva nel proceso di comunicazione scientifica, in Garzonio C A et al. 2010 *Pietra serena qualità del prodotto e sostenibilità ambientale*, (Melfi: Libria ed)
- [18] Sebregondi L 2006 *The Arno in Santa Croce* (Firenze: Polistampa, Opera di Santa Croce)
- [19] Trumbo J 2006 Making science visible. Visual literacy in science communication, in Pauwels L (ed.), *Visual cultures of science. Rethinking representational practices in knowledge building and science communication* (New England: University Press of New England)
- [20] TUSA S and AGNETO F 2015 (Coord.) *Memorie di Mare. Un mare di memorie. La Soprinendenza del Mare dal GLASS al Progetto ARROWS* (Regione Siciliana. Assessorato dei Beni culturale e Dell'Identità Siciliana)
- [21] UNESCO World Heritage Centre Publications on climate change 2007 *Policy Document on the impacts of Climate Change on World Heritage Properties*. Retrieved from: <https://whc.unesco.org/en/news/441> (02/01/2020)
- [22] ZION I B 2018 A wreck off the Sicilian coast offers a rare look into the world of Byzantine commerce, *Archaeology Magazine. A publication of the Archaeological Institute of America*. Sept/Oct. Retrieved from: <https://www.archaeology.org/issues/309-1809/features/6856-sicily-byzantine-shipwreck>. (14/12/2019)

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