

PALIMPSEST Project

[the Book]



Ioannina, March 2022

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Table of Contents

| | |
|--|-----|
| [Introduction] | 7 |
| 01. [The Concept] | 13 |
| 02. [The Methodology] | 19 |
| 03. [The People] | 23 |
| 03.01 [The Team] | 25 |
| 03.02 [The Public] | 27 |
| 03.03 [The Curators] | 29 |
| 03.04 [The Collaborators] | 39 |
| 03.05 [The Artists] | 41 |
| 03.06 [The Academia] | 67 |
| Designing a REBUS | 69 |
| (Hack coronavirus quarantine) dreaming more than (architectural experience) virtual museum visits (in a post-pandemic future) | 84 |
| Art museums and ICT: Digital image as a museum exhibit | 94 |
| How dark should dark be? | 104 |
| The Augmented Realism of Caravaggio | 120 |
| 04. [The Elements] | 133 |
| 04.01 [The App] | 135 |
| 04.02 [The Booth] | 139 |
| 04.03 [The Installations] | 145 |
| [Afterword] | 171 |

[Introduction]

PALIMPSEST's introduction can only start middle way. There is no entrance or beginning to a palimpsest; all layers can be written over or resurface. At the end of the implementation of this project, we are only in the middle.

PALIMPSEST is a project about the seamless incorporation of the past in the city's present through the use of digital technologies. Both Italy and Greece are countries with thousands of years of history and share a common need to incorporate the past in the present without obstructing the future. PALIMPSEST with its transparent and seamless procedures and with its approach that merges and transcends time strata, offers a unique case for integrating intangible cultural heritage through artistic cocreation and postproduction in the public urban space. PALIMPSEST is primarily based on cocreation and postproduction and the involvement of as many as possible for the reactivation of the public space through the insertion of museistic narratives.

The cocreation objective and the goal engage many was more than achieved; it was surpassed. This is a project that was done in cooperation: hundreds of people; hundreds of stories; hundreds of photos; tens of videos; tens of artists (visual artists; theatre artists; photographers; architects) tens of teachers; tens of IVY volunteers; tens of academic and tens of technical and administrative staff and thousands of reached and engaged audience. The collaboration in this project was overwhelming. Partnership was also rejoiced; the Greek team was one single team but also cooperation with the Italian team in the difficult circumstances of Covid19 was cordial and genuine.

At the end, all these people working together make impossible to trace back authorship; practically there is nothing that can be attributed to individuals; all work done is the work of the PALIMPSEST team. We worked together and consecutively post-produced every work done in a natural and fluid continuity where the collective was heartfelt and the tradition was understood as a continuous trans-dare, a give across. Post-production was constant; stories were collected and post-produced by students and teachers; post-produced by artists; post produced by the PALIMPSEST team and remain open to further post-production by the public.

The book describes the PALIMPSEST experience and as such, is itself a work in progress. It highlights certain aspects and certain moments, but it doesn't reveal all the layers that remain veiled and suspended in this particular instance and linger in limbo. In order to make the book feasible it was imperative to not include all the events that took place and also the Italian PALIMPSEST's results, although the process was common, and the work was comparted at all moments.

Presenting PALIMPSEST at the end is about presenting its concept and methodology but mostly about presenting its people and the work shared; so, all these instances that are not included in a certain way transpire the ones that are.

Finally, PALIMPSEST leaves behind more than a toolkit (App, Booth, Museum), which can be used in order to give continuance and prospect for the future; it creates a mindset and constructs a methodology about how -by working together- cultural heritage can be sited in our common present and projected in our envisioned future.

“ Creating

PALIMPSEST ... ”

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01. [The Concept]

PALIMPSEST (Post ALphabetical Interactive Museum using Participatory, Space-Embedded, Story-Telling), is a project, funded by Interreg V-A Greece-Italy, Priority Axis 2 - Integrated Environmental Management, which works upon cultural heritage and reshapes it for the digital age, by applying the concept and metaphor of the city as a palimpsest. Cultural Heritage constitutes one of the city's most valuable elements and assets, as it provides the subject with the opportunity to relate to the urban space and reactivate and reinforce its sense of historical, spatial and temporal continuity as well as the feeling of community and belonging. Digital technologies open a whole new field of actions for reintroducing cultural heritage into urban public space with their immense potentials for archiving, processing, circulating and transforming /post-producing cultural heritage assets.

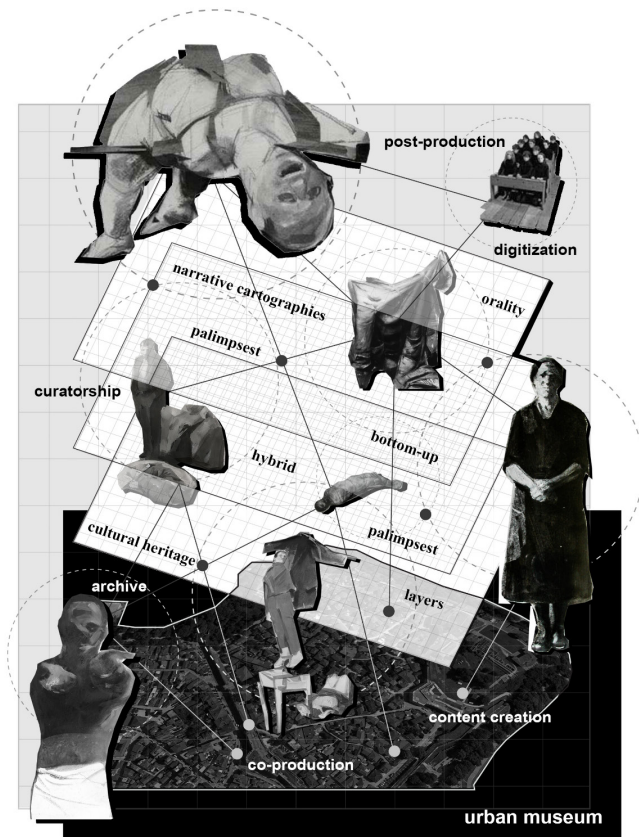


Fig.1 conceptual diagram

PALIMPSEST reconsiders concepts such as the Archive and the Museum with the intention of reconsidering them, by embracing their fluid, participatory and bottom-up, contemporary version. The intention is to reactivate and revitalize the city's palimpsest by incorporating forgotten events, stories and legends that allegedly took place in the city's urban web. The narratives are retrieved as part of an oral history and tradition and transformed into an open, common and editable archive and a public, interactive, multisensorial and immaterial museum. The Museum and its archive are both post-productions that constitute an extra stratification in the city's public space, augmenting and hybridizing it.

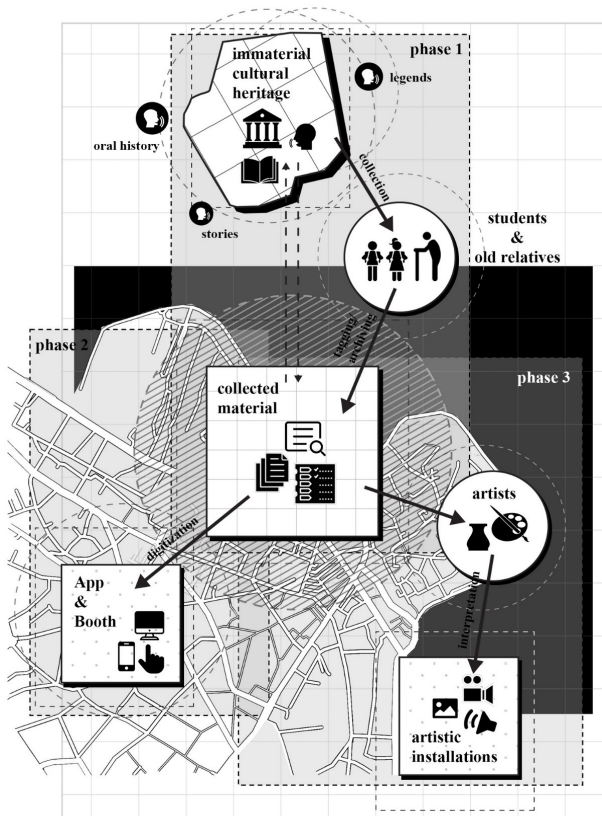


Fig.2 phase diagram

The project's first stage involves an initial archive, created with the participation of schools and trans-generational collaboration. Students seek stories and memories related to the urban fabric of the city, from elder people in their familiar environment. They transcribe them, guiding the narrators to points that interest them and they tag, categorize and archive them. Tags used related to content are partly defined freely by

the students and partly by the selection from a given tank of tags; while at the same time chronological and locative tags are also requested. Media used to record the stories are chosen by the students but must include text.



Fig.3 proposal for the art installations

Subsequently the collected material is uploaded on a digital application open for the public. The users can search for stories and events using filters; can add stories following a similar procedure; can add comments to stories that already exist; and can suggest links among stories. This archive has all the features of a post-alphabetic archive, that is, a hybrid archive, which combines top-down rules and pre-existing structure with bottom-up, unrestricted and unforeseen development.

During the next stage, PALIMSPEST focuses on the creation of art installations in the urban space of the city. At first, the artists will select stories from the archive and then they will reinsert them as art installations in the city's public space appending them to their original location. The art installations will not significantly affect the physical condition of the city at its present condition. These settings, activated by visitors, will be interactive and multi-sensory, with no visible footprint in the urban area.

PALIMPSEST proposes an open-air, constantly changing, evanescent, dreamlike, and yet, personalized, museistic experience that questions and defies traditional organizations of museums. As a Museum, PALIMPSEST is quite different than traditional museums in various levels, because it changes 1) the way content is provided 2), the fixed ubication in a building 3) the passive experience of the exhibits 4) the traditional bisection between curators and spectators 5) the detachment between exhibit and context.

Content is a novelty in PALIMPSEST. The PALIMPSEST's museum is co-created by both, the public involved in the collection of narratives from the city's past and also, artists responsible for the mise-en-scène of the narratives in the public urban space. The traditional, top-down, hierarchical structure of the conventional museum is reshaped as PALIMPSEST proposes a bottom up, participatory approximation through the interrelation of experts/actors and public, of traditional emitters and receivers, of authors and audience for the co-creation and common authorship of the content.



Fig.4 proposal for the art installations

PALIMPSEST adopts the way information is produced in our current condition. In the post-alphabetic era receiving, producing, post-producing and emitting information becomes feasible for all those who use digital media. In our alphabetic past, information and knowledge were produced by certain centers and was distributed to the public that was usually a passive re-

ceiver. Authority was defined in advance and authorship remained indisputable. History, in the alphabetic world, was rendered as objective and could difficultly be perceived as an interpretative and biased understanding of the past. It claimed the right to be unique and impartial; the unbigoted and uncontestable knowledge of the past.



Fig.5 proposal for the art installations

In this circumstance the museum enters a crisis as an authoritative and trustworthy institution for the objective and established representation of the world; as a hierarchical structure that separates authors and public. This is the theoretical context upon which PALIMPSEST aims to work. One of its main objectives is to re-engage the inhabitants of the city, who are asked to collect, organize and associate, and therefore interpret information and narratives about the city's past. It is centered in the non-institutional history of the city, which is gathered through individual implication in the form of particular descriptions and subjective storytelling. The representation of the city in the MAP and APP format recreates the layered representation of the actual palimpsest, which every city has as a base, although it is often ignored and forgotten.

The Museum is not only dissolved as a top-down institution but also as an institution instituted in a separate, detached place. It becomes an open, overlapping and infiltrating structure that inhabits the context of its exhibits instead of isolating and disconnecting them from their milieu. The proposed

model is one of a Museum without walls and limits; without pre-defined and fixed routes; without detachment, distance and disconnection. A hybrid condition of public urban space and museum that interact and infiltrate each other.

Consequently, the reactivation of the city's palimpsest changes the inhabitants' mental representation of the urban public space. Collected stories are elaborated and a number of them is selected by the artists as a basis for the construction of art installations in the city. The art installations take one-step further the interpretation of the collected stories. Their apparently random activation by visitors and the personalized perception of the museum that this creates, is an additional filter that distorts any possibility of an objective and hierarchical reading of the museum's content. PALIMPSEST rethinks the traditional classifications of authors and public without dissolving them. Oral history and collective cultural production which comes from our distant pre-alphabetic past coexist with the necessity of the artist as a distinct and established figure allowing both ends to explore and exploit the possibilities that arise from their interconnection.

PALIMPSEST regards the city's public open space as a canvas that is restored and recuperated and at the same time augmented and activated. It creates a hybrid approximation between the situationists views for a city animated by its inhabitants and a more commercial, thematic approach, where the city is transformed in a spectacle structure. Public space in this animated, augmented version offers possibilities for encounters and concurrences and engages passive and indifferent people to act and to experience vivid reinterpretations of past events instituted in their original place and transported in the present.

02. [The Methodology]

PALIMPSEST, is a test-bed for theories and concepts with diverse origins, joined and blended together. It draws concepts and approaches from urban studies, museology, art and art theory, archiving, history cultural and media studies, informatics and digital cultural heritage, performance and staging and it is based in combinations and interactions. Methodologically PALIMPSEST is a hybrid; of different fields, of distinct categories, of diverse typologies. Therefore, although its methodology is constantly being elaborated and reconsidered it is arduous and impractical to present as is habitually done in predefined, hierarchical, controlled projects. The project is also a hybrid of top-down traditional organization and bottom-up, participatory approaches. Therefore, during its implementation and because of the genuine and profound interaction with agents and actors exterior to the project, the methodology is continuously reviewed and re-adapted.



Fig.1 Paintings used by PALIMPSEST Team (courtesy Xenofon Bitsikas)

“ Post-Alphabetic ”

Post-alphabetic is the term McLuhan used to define the change that digital media would bring to our understanding, interrelation and mental construction of the world (McLuhan 1962). Decades after McLuhan’s prophetic writings the post-alphabetic era is presented as an era where definitions, limits, categories, taxonomies, typologies and hierarchies succumb to the proliferation of mixtures, combinations, fluidity and hybrids. PALIMPSEST is post-alphabetic because it opts for mixing rath-

er than separating, it prefers merging rather than detaching; it is post-alphabetic because it acknowledges subjective and multiple truths as more powerful and reasonable than a unique and objective truth; it is post-alphabetic because it engages experts from multiple fields with the general public in the co-creation of a common, shared construction.



Fig.2 Paintings used by PALIMPSEST Team (courtesy Xenofon Bitsikas)

“ Space-Embedded ”

PALIMPSEST isn't strictly limited within an exhibition space. On the contrary it's content is scattered all over the involved cities' historical centers and embedded in public spaces. The artworks and installations are inspired by urban legends and old stories, so each and every artwork's identity is inseparable from its physical location and surroundings. PALIMPSEST aims to re-install local lore into real-world environments, and by that old stories reclaim their rightful spaces.

The art installations are embedded in public spaces and only become visible if the user activates them. This will give the ability to the public to experience urban legends where they originally took place. The merging of past and present worlds redefine the urban experience and have both visitors and inhabitants look at mundane and common places differently. These artworks and installations may be digital and intangible, but they are embedded in physical, material spaces. The stories may have happened in the distant past, but they are restored to their former glory in the present. This hybrid museum experience opens up new possibilities that are yet to be explored. Dull places are now transformed into immersive, interactive encounters.

“ Augmented ”

Augmenting the public urban space of the city with interactive art installations, allows many levels of augmentations to occur. Past is added to the present as past stories return to their original location without affecting or altering it. Multisensorial art installations augment the perception of public space by creating a theatrical but still transient atmosphere that involves a holistic, somatic experience. The visitor is surrounded and not placed before the installations and becomes the center of the story told instead of a simple spectator. Everyday urban life is augmented by art installations that intensify and enhance our relation to it. The overwhelmed by digital media subject is satisfied by the multilayering and the augmentation of the public space and becomes engaged and activated.



Fig.3 Paintings used by PALIMPSEST Team (courtesy Xenofon Bitsikas)

“ Participatory ”

PALIMPSEST introduces a groundbreaking, participatory museum experience, where the public will be in charge. The users are able to collaborate with PALIMPSEST’s Team and shape the museum’s content. Participants are encouraged to download our app and upload forgotten tales, photos of family heirlooms, 3d models of historical objects, etc. The user is able to share his/her content, shape the preexisting and at the same time, he/she is able to add another layer of history in the city’s palimpsest. The project is not based on passive consumption, but active participation. The public becomes the project’s curator and trustee.

PALIMPSEST creates a spectacle that everyone can enjoy and, at the same time, it creates a situation where the visitor is not just a passive recipient but an active participant. As a result, when it comes to our relationship with the city, our project's museum experience is a hybrid between spectacle/ theme entertainment practices and art-driven/ situationist approaches.

“ Interactive ”

The visitor is neither a passive spectator nor a consumer of museum experiences. The APP generates interactive content – an APP designed to involve the user's input and respond to his/her actions, capturing attention right from the start. The user is no longer just a recipient of information – actions set PALIMPSEST in motion! Interactivity adds another layer to PALIMPSEST's museum experience.

Everyone is able to download the APP and immerse oneself in art installations that will be waiting in public areas. These installations cannot be activated without the active human agent, that will engage with them, explore their content and add a new layer in the city's palimpsest.

“ Storytelling ”

PALIMPSEST is not concerned about historic truths – it is intrigued by orality and aim to preserve urban legends and stories. Local lore should be passed on and shared, because stories create a sense of community. PALIMPSEST helps people come together in a creative context while they delve into storytelling, a craft that is as old as time. The project aims to re-engage urban inhabitants and encourage them to collect and organize – or, in other words, interpret – information about the involved cities' past. At the same time, visitors can listen to other people's stories and uncover lost layers of the cities' past. This offers a possibility to strengthen the connection among past and future generations through sharing common experiences.

03. [The People]



Many were those who took part in the implementation of PALIMPSEST and their contribution was priceless. Without their valuable help, persistence and patience, effort and hard work, creative thinking and passion, the project would never be accomplished. PALIMPSEST is the result of a team, not just a combination of persons, a collective and participatory work where the whole is greater than the sum of its parts.

03.01 [The Team]

The University of Ioannina School of Fine Arts is the lead beneficiary of this project. The cross-border partnership includes the Region of Epirus as beneficiary, the Municipality of Ioannina as Associated Partner and also involves two Italian partners as beneficiaries, the University of Bari and the Province of Lecce.

The team included members from different fields of study, such as installation artists, architects, graphic designers, computer engineers, educators and ethnologists, who had to work together, go beyond their area of expertise and, at the same time, bring along their particular vision in the project. Because of the multidisciplinary of the team, it was important to establish an unobstructed and open communication but also to ensure a common language where nothing is taken for granted, to achieve a level of understanding of each other's interests and also to reach a certain grade of sharing of envisioning and of the responsibility for the project.



Fig.1 PALIMPSEST Team during the Project's Inf-day (Greek Division)



Fig.2 PALIMPSEST Project Kick-off Meeting

The diversity regarding the team members' backgrounds and areas of expertise brought about difficulties that the group had to overcome; at the same time, this diversity was crucial to achieving a positive outcome. The lack of common ground in regard to methodologies and working procedures gives the opportunity to re-think and re-invent processes that were, up until now thought as self-evident and taken for granted.

Having public administration sectors as partners in both countries was also a very fruitful experience. It is not a rare occurrence for academic researchers to drift away from practical, pragmatic and utilitarian approaches, and public administration partners helped in refocusing on implementation and therefore enriched the project and facilitated its growth. It is needless to say that when it comes to these types of partnership it is, once again, crucial to establish a common language and a mutual understanding of priorities regarding actions and courses of action.



Fig.3 PALIMPSEST Team Meeting

03.02 [The Public]

PALIMPSEST proposes a different experience and approach to things, an open work, a Museum personalized and subjective with qualitative characteristics determined by the identity of the visitor, and which is not completed but remains a palimpsest anticipating new information. The past is managed as a condition that coexists and interacts with the present and not as a sterile and detached, autonomous reality.

The actors of the present co-shape the perception of the past, just as in the palimpsest the layered writings coexist and interact. The modern perception of the world and the model of supervision, of placing the subject at a distance from the reality that is objected and objectified, gradually recedes and gives way to a mixed perception where the subject is immersed but also supervises, participates and looks on, accepts the tradition but also co-shapes it, changes it and evolves it, ensuring its continuation.

Participation is fundamental to PALIMPSEST. The typical top-down, hierarchical structure of the conventional Museum is reshaped as a bottom-up, participatory approach is proposed through the correlation and interaction of experts and audiences, transmitters and receivers, creators and spectators, with the aim of co-creating and sharing the content.



Fig.1 PALIMPSEST Info-day

The public takes on a leading role. Becomes the curator and coordinator of the project, shapes the content, adds new layers of stratification in the city, processes the existing ones or brings the forgotten ones back to the surface. It ceases to be a passive consumer and recipient of experience but an active agent and participant. The contribution of the students and teachers of the schools of Ioannina was particularly important in this process, as their interest and the willingness of substantial offer and cooperation for the joint shaping of the framework and the content was the trigger and motivation for the development of the project.



Fig.2 Stakeholders event

Openness is a structural element of PALIMPSEST as it concerns not only the creators but also the time, the forms, the material, and in general the open background that is the city itself. The openness of PALIMPSEST is what reflects the perception of the city as a public and not just as a common good.



Fig.3 PALIMPSEST Info-day

03.03 [The Curators]

Participation in both the preparation, the implementation process and the subsequent course of the project, is a key feature of the composition but also a key goal of PALIMPSEST. The absence of dominant curators makes the artists, the students and the public an integral part of the work, as a network of actors in which one can hardly analyze and distribute the responsibility or even the praise for the final result. The public also assumes the role of activator, curator, coordinator and custodian of this intangible Museum.

Consequently, the participation and contribution of students in the project is a crucial act for its formation and development, and was not limited to fragmentary phases but was and is present throughout the project. The degree of their intervention in the individual stages may differ from time to time, but the imprint of their involvement is evident throughout the project. This fact allowed them to be involved and connected with the project as a whole, with the direct consequence of considering it as theirs and themselves as its curators.



Fig.1 Local students during PALIMPSEST's Info-day

In this context, a series of actions and activities designed and carried out by the interdisciplinary team of PALIMPSEST, and in cooperation with the collaborating schools. These actions aimed on informing the students about the project and ensuring their active participation in the implementation process of the Museum. Through these actions, the children had the opportunity to develop new skills while at the same time they were given the opportunity to proceed to the understanding and experiential approach of key concepts that PALIMPSEST deals with.



Fig.2 Local students during PALIMPSEST's Info-day

These activities, which will be presented in more detail later, included info-days about the project, workshops about audio, static and moving image, dramatization, theatrical expression, etc., were designed and organized in collaboration with many specialties such as teachers, artists, directors, architects, computer scientists and always with the support and backing of school teachers.

Their goal was to include children in the process of building a Museum, which transforms the perception of the "Museum" and allows students to function not just as spectators or supporters but also as curators of the open urban Museum.

“ School Visits ”

A key factor for activating the interest and developing an effective cooperation between the PALIMPSEST team and the educational community was to inform the teachers about the approach, the theoretical background, the objectives and the expected results of the project. For this reason, an event was organized to inform and present the project to teachers of the Primary and Secondary Education of Ioannina.

Through this initiative the teachers familiarized with the project and a starting point of cooperation was created on a solid basis for better understanding of the goals and stages of the program. In this way the teachers had the opportunity to effectively inform the students before their first contact with PALIMPSEST, but also to guide them in the various phases of the program, and at the same time to suggest possible approaches and improvement moves, which proved to be beneficial along the way.



Fig.3 PALIMPSEST Team with teachers from local schools

After the first contact with the teachers, the members of the PALIMPSEST team started a series of visits to the six (6) schools of Primary and Secondary Education of Ioannina that expressed interest in participating in the project, namely the 1st and 2nd Experimental Primary School, the 7th and 26th Elementary School and 2nd and 3rd Middle School. The purpose of the visits was the personal contact of the Team with the students, the familiarization of the latter with the project, the answer of any questions that arose, the provision of instruc-

tions regarding the implementation as well as the treatment of any technical problems that may arise.

During the visits, it was widely discussed the role that students are invited to play in the project as well as their contribution to this new kind of museum experience, in which urban legends and stories can be collected, archived, reproduced and finally brought back to life in the public urban space with the help of digital technologies.

Oral history, subjective perception, digitization, new museum experiences, were some of the concepts mentioned and discussed in order to have a fuller understanding of the issues, goals and aspirations of PALIMPSEST and at the same time to attract interest, active participation and involvement with this. The contribution of students is important as the first stage of the project involves the creation of an archive of oral stories, which is compiled through transgenerational collaboration.



Fig.4 PALIMPSEST Team during a school visit

The students searched for stories, legends, fairy tales, narratives and memories related to the urban fabric of the city from elderly people in their familiar environment. Then, they transcribed them using the means of their choice, taking on the role of “director” themselves, guiding the narrators to the points that they considered to be interesting and worth pointing out, and then categorize and archive them.

The stories were categorized using tags. The tags used were related to the content, the time period, the place where the stories took place, and are the result of the students’ collaboration with the PALIMPSEST team. Initially the team members

compiled an extensive repository of tags, with words that have a common root in Greek and Italian. Students were then asked to choose which ones to use to describe the story while also being able to suggest their own tags if they felt that the existing ones did not adequately describe the content. At the same time, the students were asked to locate and mark on the map the point at which the story unfolds, giving the exact coordinates.

The archiving was done with the help of electronic questionnaires (Google Forms) prepared by the PALIMPSEST team, and then the students were asked to answer. The fields aimed to cover as wide a range as possible in order to have a more complete understanding of the content of the story, and included questions about the narrator's relationship with the student, the type of story, its spatial and temporal characteristics, which point of the story is of particular interest according to the student's opinion etc. They were also asked to choose 4 of the given labels or add new ones, while they were also given the opportunity to upload a small audio or video file from the story's narration, but with the prerequisite that there will be text included.

In this way a digital archive of the stories was created, which was compiled by the students themselves, using a pre-existing structure, without however being restrictive or rigid, but on the contrary open and evolving. This archive, with the material collected, was the foundation for the subsequent design and progress of the project and its actions as well as the basis on which the artists relied in order to create their artistic installations in the public space of the city.

“ Workshops ”

- **Video Editing Workshops**

In parallel with the process of collecting the stories, the first series of workshops was held in collaboration with students, teachers and members of the PALIMPSEST team. About 200 students participated in the workshops, which focused on video editing and on-screen audio, and included theoretical and practical training. The students worked creatively to bring the stories they collected back to life, with the help and guidance of PALIMPSEST’s Team members, and applying video and audio editing instructions to their own stories.



Fig.5 Video Editing Workshop in the University of Ioannina Campus

All activities took place in the Audiovisual Laboratory of the School of Fine Arts of the University of Ioannina. The PALIMPSEST team divided the schools into 5 separate days / workshops and each day the students worked in groups of 4-5 people under the guidance of 10 tutors in total. The benefit of these activities, apart from the acquisition of technical knowledge and the creative expression of the students, was their greatest involvement with the project, of which they are an integral part.



Fig.6 Video Editing Workshop in the University of Ioannina Campus

- **Dramatization Workshops**



Fig.7 Rehearsal during the Dramatization Workshops

The second series of workshops concerned the students' contact with dramatization, creative writing, and in general the process of preparation and implementation of a theatrical performance. The children had the opportunity, with the help and guidance of actors, directors, visual artists, teachers and other experts of the PALIMPSEST Team, to work creatively in order to convey the stories and narratives they collected on the stage. They became screenwriters, directors, set and sound designers, actors, narrators, technicians, participating in all phases of the creative process, learning, among other things, the ways of storytelling, the expression through the theater, as well as the technical support required for a performance to take place.

This engagement of the students with a variety of issues directly or indirectly related to the project, enables them to expand the range of their interests and activities, to develop new skills but also to realize the interdisciplinary approach to multifaceted and complex issues. At the same time, it works beneficially in order to consider themselves part and co-creators of PALIMPSEST, activators and future coordinators, an integral part of its development and smooth operation.



Fig.8 Rehearsal during the Dramatization Workshops

- **Animation Workshops**

The last series of workshops concerned the concept of animation. As this series of workshops took place during the Covid-19 pandemic, its approach and means had to adapt to the new condition. Thus, digital meetings of the students with the members of the PALIMPSEST Team were organized, in which they were given the necessary mean, creative and technical, in order to be able to set up their digital narrative in the form of animation. Using video, audio and video editing programs, the children set up their stories, narratives, design environment, sound and finally gave them movement and life.

In this way the students got in touch with the possibilities of digital technologies, treated new media and got acquainted with a more hybrid approach to things. They learned about the ways in which the use of different media changes the narration and perception of the same content, as the animations they created were based on the same stories that had been processed in previous workshops.

The understanding, the possibilities and the critical use of the appropriate means in order to achieve the desired result in the communication of the content, the atmosphere and the sense of a narrative, was the main axis on which both the design and the implementation of all the workshops were based. The main goal of the PALIMPSEST team was the desire for students to gain a new approach and vision of the world as well as a new way in which they perceive the things around them.



Fig.9 Students working via online platforms during Animation Workshops

03.04 [The Collaborators]

“ Interreg Volunteer Youth (IVY) ”

Through the Interreg Volunteer Youth (IVY) Initiative, 8 volunteers, from different disciplinary backgrounds have joined our project, helping its implementation.



Fig.1 IVY Volunteers during a Project Meeting

Eva Exindara, Stella Giannakoudi, Anastasis Karras, Stratos Serafeimides, Maria Kasmeridou and Athina Pavlou-Benazi are undergraduate students in the Department of Fine Arts and Art Sciences, University of Ioannina and their main activities in the projects were related to the Arts and working with the elderly. Matoula Kroustali and Panagiotis Kalantzis are undergraduate students in the Department of Architecture, University of Ioannina and Democritus University of Thrace respectively, and their activities within the project focused on working with the elderly as well as the engineering and constructing aspect of the project's implementation. Ilias Kasmeridis is a post-graduate student in the Department of Computer Science and Engineering, University of Ioannina, and Nefeli Florou is an undergraduate in the Department of Electrical and Electron-

ic Engineering, Metropolitan College, and their main scope was to help with the website, software or related infrastructure development.

Interreg Volunteer Youth Initiative aims at involving young European volunteers to support, promote and report the concrete achievements of cross-border, transnational or interregional programmes and related projects, as well as generally promote European Territorial Cooperation and related values such as solidarity.



Fig.2 IVY Volunteers during the preparation of the school visits

IVY is an opportunity to young people throughout Europe to provide a new point of view and a fresh perspective to organizations that for the general public seem close, inaccessible and stiff, and why not to reverse this belief. Also by involving young and engaged Europeans, they are familiarized with Interreg and the many benefits of collaboration among EU internal borders, promoting cooperation across European borders and fostering related values such as solidarity.

Through IVY young volunteers can learned what EU does to support local communities, and give them the opportunity to have a lifetime experience.



Fig.3 IVY Volunteers in the castle of Ioannina

03.05 [The Artists]



In order for the artistic installations to be implemented in the urban public space and have as much participation and as many diverse and exciting ideas for the proposals as possible, the PALIMPSEST Team organized an open call and competition for graduates of Schools of Fine Arts and similar schools or graduates of Architecture Schools. Through this competition, 12 artists were selected with the aim of producing the art installations in the city of Ioannina. Artists with very different artistic backgrounds, ways of expressing and using media, all constituted a creative team that re-interpreted the stories that the students have selected and brought them back to life.

[Alexandros Psychoulis]



About PALIMPSEST...

“The aim of the PALIMPSEST project was to find a common ground between my own personal visual language and the history of the city of Ioannina. I was a stranger to the city, it was the first time I visited it. The advantage in this case is that the first images of the unknown city create an imaginary palimpsest made of your personal experiences and new information that is always lively and productive. And because cities, apart from buildings and people, have myths, legends and history, the palimpsest grows strangely, the unknown city becomes a temperamental formation and somehow begins to contain you.”

On the island of the Lake of Ioannina, after the church of Agios Ioannis and before Agios Panteleimon, there are some steep rocks that form a kind of depression. This location is known by the islanders and the people of Ioannina as “Vavo”. There, says the legend, lived an old woman who repeated the words and screams of passers-by, making fun of them. This legend is obviously a newer version of the myth of Echo, but an Echo that is old and certainly in a very playful mood, or an Echo that erotic pain has driven her to madness over the years.”

A Short Bio...

Alexandros Psychoulis was born in Volos in 1966 and has studied painting at the Athens School of Fine Arts. His first works are interactive installations, which are activated by the spectator and explore his subconscious, by decodifying his fears, desires or memories in images and sounds. The exploration of the virtual reality's territory has been up until now the central drift of his work, which is consisted by installations, animation and painting. In 1997, he has been awarded the Benesse Prize for his work "Black Box", with which he participated in the 47th Venice Biennial. He has presented many solo exhibitions such us: The room, a.antonopoulou.art, Athens (2009), Mammals, Zina Athanassiadou, Thessaloniki (2005), Body Milk, a.antonopoulou.art, Athens (2003), Speak about your life in materials with no memory, Lionheart, Boston (1999), There's no place far enough for you to escape from images and the pain they caused you, Deitch Projects, New York (1998). Today he is an Associate Professor of "Art and Technology" at the Architecture Department of the University of Thessaly.

[Anastasis Karras
& Dimitris Batsis]



About PALIMPSEST...

“Our participation in PALIMPSEST gave us the opportunity to create an artwork that brings to the surface a story of the past, interpreting it in a modern public space through the medium of sound. The story we chose as a starting point and reference for our work is related to a story about games organized by children at a hide out in the castle of Ioannina.”

The element that piqued our interest is the whispered speech and secretive interjections that could be hypothetically taken from the children's conversations of the story. In our work, the whisper is instrumentalized sonically in order to render a metaphysical dimension. The whispers are elements that structure a secretively spoken succession of brief shrill sounds intending to create the impression of a concealed though, ubiquitous omnipresence in the environment. The presence of incomprehensible whispers in the work, symbolizes the altered, indistinguishable and effaced writing that we notice in palimpsest manuscripts. The main intention is to interpret a mystical -in times haunting- energy through sound propagation in a way that it encapsulates the atmosphere described in the story."

A Short Bio...

Anastasis Karras is a student at the Department of Fine Arts and Art Sciences at the University of Ioannina. His practice encompasses sculpture that often includes movement while sound is an integral element of his output. His artistic research draws on information from everyday life as a source of inspiration.

Dimitris Batsis is a sound artist and academic researcher. His research covers the field of biological functions in relation to new means and sciences, sound design and interactive systems. His output involves sound installations, performance and video art through audiovisual applications and coding. He holds a PhD in Biomusic (the transformation of biological signals into sound art through research in new mediums) from the Department of Fine Arts and Art Sciences at the University of Ioannina and an MA in Contemporary Arts and Music at Oxford Brookes University.

[Athina Pavlou-Benazi]



About PALIMPSEST...

"In my work I deal with the concept of the wave as a disturbance of space and time. The wave represents many perspectives from light to image and sound to the movement of people and ideas. Using documents I search for waves through sounds and videos I collect, resulting in an installation environment. PALIMPSEST was an interesting project because the documents were the testimonies of people given to us, and the friction with the population of Ioannina brought the pieces together, displaying a flow that lacked image.

I believe that history is like the tide. The worst events can happen again if they are erased from the collective memory. I chose two testimonies related to the genocide of the Jews. The stimulus was the tragic event in world history that also took place in the city of Ioannina. Mapping the history alongside the urban space of Ioannina. The castle was an area where Jews lived, and during World War II, their community was destroyed in a very large part and the return or reintegration of the few survivors was not easy.

Every day a multitude of people are exiled from their homeland

due to wars, political, racial and religious beliefs or economic crises. These waves of people do not cease to exist and will continue to exist. I chose these stories so that it is not forgotten that in the history of Ioannina a large population consisted of Jewish citizens of Ioannina who at dawn on March 25, 1944 were forced to pack their belongings, giving up their lives and head towards their annihilation.”

A Short Bio...

Athina Pavlou Benazi (b. 1994) is a visual artist active in Athens. In recent years, using painting, video and sound as her main media, she creates environments - installations that take the notion of “wave” as their starting point. Raised in Alexandroupolis, the idea of the wave as a shelter has always existed both as an experience and as a daily stimulus. She studied at the Department of Plastic Arts and Art Sciences, School of Fine Arts, University of Ioannina from 2012-2018, specializing in painting. During her undergraduate studies, she received an Erasmus scholarship at the Facultad de Bellas Artes at the Universidad Complutense de Madrid in 2015-2016. In 2021 she graduated from the Master of Fine Arts at the Higher School of Fine Arts, Athens, defending her thesis “The Blue Shelter”. Since 2014 she has been presenting her work in exhibitions in Greece. In 2019 she received an honorary distinction at the Student Biennale for the work “The stones start spinning”.

[Christos Vagiatas]



About PALIMPSEST...

“As far as my experience in the PALIMPSEST project is concerned, I found really interesting the fact that I learnt the history as well as the myths and legends of the city of Ioannina. Lastly, it was really interesting for me to collaborate with new people in order to produce my artwork.”

A Short Bio...

Christos Vagiatas was born in Athens in 1990. He studied on a graduate and post-graduate level at the department of Fine Arts and Sciences of Art of the University of Ioannina. He lives and works in Athens. His work has been shown in two solo exhibitions, in group exhibitions, workshops and residencies; parts of it have been sold to public and private collections in Greece and abroad. In 2013-2014, he obtained a scholarship by

Onassis Foundation for postgraduate studies in Greece, and in 2018 he participated in the Stavros Niarchos Artist Fellowship Program by ARTWORKS. In his work, he deals with boundaries in terms of their representation and meaning. He uses boundaries as a structural entity, sets boundaries in space, intervening and creating new spatial conditions by using linear elements and simple forms of recognizable symbols. On the other hand, the form of boundaries becomes a codified discourse asking questions and raising concerns about the perception of their nature as an experience. In his most recent work, he draws large-scale projects for open, public spaces. He believes that these places, apart from their architectural and urban features, are social spaces shaped by their use and misuse as well as by the daily itineraries of their users.

[Iro Laskari]



About PALIMPSEST...

"The Palimpsest project has been an occasion for me to discover different sides of life and public space at the Greek city of Ioannina. The procedure for the design of interactive artistic installations, was initially based on short narrations of locals regarding biomatic experiences through the years.

The intimate points of view of Ioannina's citizens, which describe the recent history of the region and run through a big part of the 20th century as well as the 21st century, covered the images of the project's locations with a narrative mantle, and that was for me an intense experience. After that, the challenge of creating an interactive art installation became even bigger.

As a water lover, I chose a story on the marine week, which used to take place at the Lake each summer during the 70s. The week was devoted to water sports contests, such as rowing and water skiing. This week ended with a mysterious nocturne parade, whose protagonists were colorful paper lanterns, hanged

over traditional wooden boats. After a tour at the Lake, the lantern parade ended at the island.

My installation is an attempt to recreate in a smaller scale, the mystic impression of colorful paper lanterns by the Lake.”

A Short Bio...

Iro Laskari's research interests are in Visual Communication & non-linear narratives. She is a graphic designer, researcher and artist. Since 2006 she is teaching design in the Master course: Graphic Arts - Multimedia, at the School of Applied Arts of the Hellenic Open University. She has a BA in Graphic Design (Athens University of Applied Sciences), Maîtrise και DEA from Université Paris 8, and MA in Research in Interaction, from Ecole Nationale Supérieure des Arts Décoratifs (ENSAD), Paris. She holds a PhD from the Dpt of Communication and Media, University of Athens in the research area of Generative Audio-visual Narratives. She has taught in graduate and postgraduate courses since 2002 and has participated in several international as well as Greek conferences and exhibitions.

[Maria Varela]



About PALIMPSEST...

"I was particularly interested in deeping into the oral histories collection and identifying a place through past experiences. The memory of the inhabitants and what survives in the passage of time become the different layers of reading spatiality and locality.

I chose a story as it was told by a grandmother to her grandchild: a wolf visited her, they stared at each other, she was very scared and finally the wolf returned to the forest.

The way I approach this story is about human fears and what we are called to face and stare the same way Grandma did.

Having created a collection of folk art motifs depicting monsters and imaginary beings, I want to refer to human fears and the ways they have been expressed in the past. In the same no-

tion that man familiarize himself with monster motifs and puts them on clothes or utensils to appropriate their magical power, I call on viewers to relive the grandmother's experience by staring at what used to terrorize people in the past."

A Short Bio...

Maria Varela is a multidisciplinary artist focusing on the creative applications of new technologies, data visualization through the act of weaving and the collaboration with women communities. She experiments with ways in which the archival event is transcribed from the digital environment into the physical world. She creates digital and physical objects, systems, environments and live events exploring concepts of identity, memory, tradition and their constructions. She has presented her work in numerous exhibitions in Greece and abroad, in museums of contemporary art such as EMST in Athens and Bozar in Brussels, and art festivals such as Festival de Arte Contemporânea Sesc_Videobrasill in Sao Paulo, Media Art Biennale in Wroclaw, Siggraph in Vancouver, Transmediale in Berlin, ISWC in Seattle, Píksel in Bergen, Visual Dialogues (Stegi - Onassis Foundation) in Athens and more. In 2021 she was awarded with the Selected Award of the Taoyuan Museum of Fine Art in Taiwan.

[Marilena Georgantzi]



About PALIMPSEST...

“Palimpsest consists of an invisible (till is activated) extra layer in the city of Ioannina which allows for the archived narrations of the citizens to be explored in multiple ways. HAUNT ME is based on a story of a child at the time of the civil war where, when he and his siblings lost their parents, he was transferred to an orphanage. There, being so upset by the whole experience he put both his feet in one trouser leg. He concludes by saying that a girl from his village managed to help him since his siblings were all spread in different institutions. In current times, nostalgia is thriving as a resort from everyday difficulties. However, painful stories of this kind reveal how the past is often a construct which glorifies a unified experience. The testimony, on which this work is based, focuses on the perspective of a subject that the officially written history does not promote while the seemingly funny inci-

dents described hide nightmarish facts. Since my personal work explores the creation of atmospheres in digital and physical environments, HAUNT ME recreates, through a symbolic gesture, a child's bedroom, questioning our preconceptions on innocence and the carefree feeling of being young."

A Short Bio...

Marilena Georgantzi (b. 1987, Athens) is an artist and set designer focusing on the concept of atmospheres, world building of synthetic storyworlds and digital crafts. Her practice lies in cross-pollination of digital technologies, e-textiles, traditional handcrafts and site-specificity, aiming to immerse people in intertextual, non-linear environments. Originally trained as an architect (NTUA, 2010) with a specialization in new media and digital fabrication methodologies (IAAC, 2012) as well as a graphic designer (HOU, 2020), she explores emerging materialities that evolve in time and space. She has designed sets for dance productions, films as well as commercial events (ex. 442, Onassis Stegi 2021 etc.) and has been selected for her curatorial proposals and interactive art projects in prestigious festivals and exhibitions in Europe (ex. Hybrids, OCC Athens & Ars Electronica 2016 etc.). She holds interactive media workshops, where the importance of women labour and traditional craftsmanship is highlighted (ADAF 2021, 2020, 2017 etc.).

[Panagiotis Vorrias]



About PALIMPSEST...

“On October 24, 1940, something very strange happened. While I was with my father in the lake, we suddenly see in the sky, among the clouds, something very bright and fancy that looked like a star. Then my dad comes back upset and tells me that it is a bad sign and something very bad will happen. After 4 days we hear the voice of the newsboy that was shouting loudly: “Emergency branch. “War, war, war has been declared.”

The history of the city of Ioannina is in a way present and visible today. What interests and excites me in this particular story is that the danger is transferred and “communicated” in the form of signals. In the past, in cases of threat of war and imminent danger, people communicated with each other using multiple signals. Today, at a time when speed and modern ways of communication are galloping, with video projection I suggest

a blurred human figure with a piece of glass in his hands sending bright-sun signals to the passer-by in the paradox of the night, perhaps wanting to warn him about dangers to come.

A Short Bio...

Panagiotis Vorrias was born in Kalamata, Greece, in 1983. He graduated Athens School of Fine Arts (ASFA) and Master of Fine Arts (ASFA) with the grade “excellent”. He participated in group exhibitions in Greece and abroad. He received Scholarship of State Scholarship Foundation and in 2014 was nominee for the HYam award for Young Mediterranean Artist. In 2013 participated in National Museum of Contemporary Art exhibition “Afresh” and in 16th Biennial of Young Artists from Europe and the Mediterranean. In 2019 he was selected to Stavros Niarchos Foundation Artist Fellowship Award (SNF Artworks). His works are in collections in Greece and abroad. Since 2013 is member of the art group “PER SE”. He lives and works in Athens.

[Spiros Papadopoulos]



About PALIMPSEST...

PALIMPSEST Project gave me the opportunity to further my research and experiment on a new experiential urban landscape which is produced by activating and feeding the collective memory, thus highlighting the vivid and dialectic relationship between the social activism and the urban 'body' both in its diachronic and synchronic dimensions. This altered cultural landscape form a new condition of unexpected happenings that stimulate and feed into our memory. PALIMPSEST's engagement with the urban public space, as seen by my interpretation and my work, composes and recomposes a constellation of citizens' social actions, conflicts, and claims of rights for the city and through the city of Ioannina.

A Short Bio...

Spiros Papadopoulos is an architect and media artist. He is Professor of Architecture and Time Based Media at the Department of Architecture of the University of Thessaly (UTH) and the Director of the Laboratory of Environmental Communication and Audiovisual Documentation (LECAD-UTH). His research interests focus on interactive environments, audiovisual culture and ICTs in education. He is actively involved in audiovisual media and multimodal design in the fields of architecture and visual arts, researching the interdisciplinary interaction among contemporary urban design issues and new technologies. His work has been presented at several exhibitions, documentary festivals and international conferences.

[Theodoros Zafeiropoulos]



About PALIMPSEST...

“My experience with the PALIMPSEST was a unique opportunity to read and transform a short story into a sculptural installation with a great symbolic value. Using as inspiration framework the following story: Every time the lake was wild in the old days from the north wind that blew, a big storm was created. The people of Ioannina at that time believed that some sin had been committed, an evil that the lake wanted to “testify” to everyone and bring to light on the surface. Then the grandmothers used to say: “Again the wind mixes the lake”. The aim of the work is to produce an experience of an air - aquatic event that interrupts the serenity of the lake, which wakes up every time the viewer approaches the point of the pier. The irrigation mechanism very often used in crops of the wider area is a tool of symbolic representation of an extreme weather phenomenon that with minimal intervention activates a new landmark in the public space of the city of Ioannina. The project will be

installed on the pier located on the shore of Lake Pamvotida. A water jet (irrigation cannon) will spray water with a movement of 180 degrees at a distance of 50m, producing a spectacular water experience.”

A Short Bio...

Theodoros Zafeiropoulos was born in 1978. He graduated from the School of Fine Arts, Aristotle University of Thessaloniki (1998-2003). He participated in the Erasmus program in the University of Barcelona (2001). He graduated from the MFA of ASFA (2004-2006). He graduated and was honored with the Paula Rhodes Memorial Award from the MFA program of the School of Visual Arts, New York USA as recipient of the Fulbright, Gerondelis & Al.Onassis Foundations scholarships (2007-2009). He participated in the Skowhegan School of Painting and Sculpture (2009). In 2016 he concluded his PhD dissertation in the School of Architecture, University of Thessaly. Since 2001 he has presented 10 solo shows and has participated in more than 100 international group shows, residencies, and projects in Greece, USA, and elsewhere. He received commissions to create site-specific installations in many institutions and Foundations including the Morton Arboretum in Lisle Illinois, USA, the Museum of Civil Aviation in Athens, Miltech Hellas, Goethe Institute Thessaloniki, Museum of Photography in Thessaloniki and the G&A Mamidakis Foundation. In 2017 he was elected as Assistant professor in NTUA, School of Architecture. He lives and works in Athens.

[Yannis Kokkalis]



About PALIMPSEST...

“Working for the project “Palimpsest” has been a truly rewarding experience. The opportunity to collaborate with all the gifted people involved was unique, while the accumulated information about facts, stories, locations, and landmarks of the city of Ioannina gave me the opportunity to a deeper experience of the land where I live for four years now. Finding quite a lot of the stories interesting, I decided to use elements from “Kyra Frosyni”, myths about fairies in the water, fishermen on the lake and drowned women. Considering all these stories the image of Millet’s Ofelia was at the center of my thoughts. I ended up with the video of a dancing woman in the water, with the parallel projection of an immersing fishing boat. Since I often use video in my work, the filming, the editing, and the digital processing was something mostly procedural, it took though some time to complete.”

A Short Bio...

Yannis Kokkalis studied at the “Athens University of Economics and Business”, professional photography at the IEK “Focus”, sculpture at the “Athens School of Fine Arts”, master in digital arts at the “Athens School of Fine Arts”. From 1989 to 2010 he worked as a photographer in fashion and advertising, 2011 to 2021 worked as an art teacher and since 2017 teaches Sculpture at the School of Fine Arts of the University of Ioannina. Solo exhibitions: 2020: “Egg as Ego”, Talc studio, Athens, 2015: “Turns”, Beton7 Gallery, Athens, 2014: “Guideline”, Artwall, Athens, 2011: “Installations”, Pontoporos Gallerie, Naoussa, Paros. Selected group exhibitions: 2020: “Pareidolia”, Talc studio, Athens, curator Vasiliki Panagiotopoulou, 2018: “12 artists”, Technohoros Gallery, Ioannina, 2016: “Corpus Isola,” Vouvaleio School for Girls, Kalymnos, with the support of the Organization for Culture and Development NEON, curator Katerina Sperentzou, 2016: “1460 art days / ArtWall,” Art Space Artwall, Athens, curated by Fotini Kapiris, 2015.

[Stratos Serafeimidis]



About PALIMPSEST...

“The Palimpsest Project offered me the opportunity to research many oral stories, getting to know the subjective aspects from well-known historical events that took place during the World War II in Ioannina. In many stories I came along the abrupt cessation of one condition of life and the transition to another, from carefree moments of play to rapid adulthood. In my work, I reinterpret stories by placing objects within them, in an attempt to convey the human condition they carry through memories.”

A Short Bio...

Stratos Serafeimidis is a pre-graduate student at the Department of Fine Arts at the University of Ioannina. He was raised in Prosotsani, Drama and currently lives in Ioannina. He has presented his works in various group exhibitions and participated in projects such as Interreg Palimpsest and Diaplasis 202. His work consists of video and sound installations and films.

03.06 [The Academia]



ICT offers new opportunities to rethink and redesign the way Cultural Heritage is experienced, Archives are organized and Museums are deployed and managed. Participation, interpretation and connection on one hand and personalization, re-contextualization, interaction and immersion on the other, are key elements of the change that is occurring in cultural heritage assets and the institutions traditionally associated to them.

Big Data and Artificial Intelligence can be used to adapt and personalize museum experience whereas human-machine interaction methodologies and advanced immersive technologies allow the emulation and the augmentation of the physical world by creating a surrounding, immersive, multisensorial feeling. In addition, as ICT allows the integration of various layers of space, including smart physical spaces and virtual spaces, the museum

is now able to transcend the physical limits of its enclosed rooms and its fixed locations and invite people to share augmented, animated, intense everyday experiences in the common, public spaces of the hybrid cities, where present and past can coexist.

PALIMPSEST Team launched a call with the aim to gather some of the most promising experiences and proposals of innovation through the use of digital technologies, in the Museum environment and the Cultural Heritage field. The objective was to identify new paths for the rediscovery and enhancement of new possibilities to relate to cultural heritage that can provide benefits in the social and economic sphere.

Designing a REBUS

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Abstract

This project thesis tries to redefine the notion of the museum through responsive and behavioral design. The main aim is to reconnect the space with the exhibits and the atmosphere of the museum creating a holistic environment and constitute the visitor an active part of this environment. The space and the exhibits narrate their story to the visitor through their interaction with him/her, while at the same time immerse him/her into the museum experience. Our research and design interventions are focused on an existing museum, the Folklore & Historical Museum of Xanthi. The pre-existing museistic experience is enriched with responsive and behavioral traits, so that the visitor perceives the space and the exhibits as an entity. The visitor's choices play a decisive role in the experience as he/she is called to discover the stories that the space has to tell through active participation and exploration. In conclusion, this thesis was a process of configuring a framework on which we can rely when creating responsive and behavioral spaces, as well as question on how today's designers are called to manage and highlight cultural heritage. This paper is about our thesis project, elaborated during the academic year 2018-2019 at the Democritus University of Thrace and supervised by Professor Polyxeni Mantzou.

Keywords: responsive design, behavioral design, museum design, cultural heritage

01. Introduction

As early as 1968, Henri Lefebvre in his book "Right to the City" stated that space is a representation or conception produced experientially by the user (Lefebvre, 1968). The purpose of Situational Strategies was to create life moments, situations and experiences. The result of architectural composition

would be more effective, if the synthetic process took into account the feelings and the senses, leading to a multidimensional experience (Giannoudis, 2012). Situational Strategies could not be more relevant than in today's post-alphabetic era. After all, architecture has always served as our mediator with the world. It organizes, connects and creates relationships so that things, objects and spaces are inextricably linked, as their existence in space, their layout and function determine and being determined by the experience of the viewer.

The design of a museum space has always been associated with the user's experience, the visual interaction with the exhibits and the creation of an ambience and atmosphere. Museums are places that tell stories. However, the way in which some museums operate several times proves problematic. The visitor often receives sterile information from the exhibits, which, decontextualized and placed randomly around the space, lose their connection to their original environment, becoming mere objects that gain life only through the subject's glare. The walls of the museum end up serving as "hangers" for exhibits that are lost into the museum space. In this way, the viewer does not immerse into the atmosphere of the exhibits' world, and thus doesn't become a part of it.

So, our aim is to design a responsive and behavioral museum space that will alter the way visitors perceive museistic experience. By creating a space that thinks, acts, feels and responds we tried to enhance the visitor's senses and create situations and experiences, that it will be harmoniously interconnected to all the elements that constitute the museum environment. In short, to create a "living organism" that seeks to interact with its environment and therefore with us.

02. The Concept

Thing, object, subject. Our world is organized by the relations and the dipoles that these three notions produce. Thing or "pragma" («πράγμα») in Greek comes from the word prachthen («πραχθέν») meaning to produce. Object signifies "I am against", "I am standing opposite". Things are distinguished from their handmade quality [Heidegger]; they coexist in harmony with us and their environment. Objects, on the contrary, appear after the Industrial Revolution and are the products of mass production. Objects need a subject to exist, while things not; they are either above or under our perception [Bill Brown,2001].

According to Marshall McLuhan we are in the post-alphabetic era. An era that the subject no longer serves as a reference point as we experience the world in a state of immersion. Authenticities have been brought down, the dipoles have been abolished and control is no longer in our hands. Objects and

things are creating a new hybrid entity, which places the subject and the world into a new condition. Moreover, the changes take place silently, sometimes even without realizing them. Our world is characterized by hybridization, fluidity, and diffusion. All these consequently lead to changes in the way we think, perceive and design the world around us.

The evolution of technology that changes the prism under which we perceive the world (Heidegger, 1927), as well as our constant presence in the social media world, gradually transfer the interest of design towards the experience, the atmosphere, the interaction. Design no longer focuses on the shape or the form but on intangible aspects like interaction, experience, atmosphere, situations and events. Thus, new types of design emerge such as responsive and behavioral design, that emphasize on perception, movement and behavior. [Levillain and Zinetti, 2017]

Responsive design is based on the response of the produced object or space to the user. One of the most characteristic examples of responsive design is the smart or intelligent environments and objects. Responsive design's principles focus more on the interaction with the user and the customization of each used object, such as mobile phones or personal computers. Today, there are numerous examples of responsive design in our everyday life.

Behavioral design focuses on the way that the user perceives a moving object and his/her tendency to give to this object psychological traits according to his/her movement or his/her behavior. A behavioral object is not perceived just as a functional or moving object, but as a moving being with some levels of perceptive ability. In order to successfully design a behavioral object or a behavioral space we need to give emphasis in more intangible aspects such as behavior, movement and human perception rather than elements like shape or function. [Levillain and Zinetti, 2017]

In 2002, Kas Oosterhuis proposed the E-motive house, a theoretical proposition of a programmable construction that could be transformed. The author described the behavior of the home as a living organism with emotions and moods. Due to many external and internal factors affecting the building's alterability, its behavior could not be specified and was ultimately perceived as unpredictable based on emotions and expressing moods. The home will be individually minded and will develop through a learning ability, constituting a challenge for the resident to adapt to such an environment. In describing how the house would be perceived by residents, Kas Oosterhuis writes: "Residents talk like a human or pet. How is your home today? Doesn't feel good? Why is your home behaving so weird lately? The doctor may need to see it. Have you taken care of your home enough?". The E-motive house is more than a static lifeless shell. It is a social

being that has emotions, moods, a need for care and communication. [Giannoudis, 2012]

03. The Space

In order to elaborate our idea to a greater extent, we chose an existing museum space, and in particular the Folklore & Historical Museum of Xanthi. Folklore museums are a special category of museum typology and they constitute a particularly important exhibition site for cultural heritage. These museums tell stories of a more recent past, which many visitors may have experienced themselves or heard stories about them from their ancestors. They are “living” museums whose history is still being written to this day. They carry pieces of the culture of each place that have shaped and continue to shape the daily lives of their inhabitants.

However, many of the folklore museums that operate today, are not a product of a designed museum experience, as the way in which their exhibits and collections are displayed takes them out of their context. Decontextualizing the exhibits from their environment leads to their perceptual transformation into objects, while it places the visitor in the position of the decontextualized subject that simply observes without connecting to what he/she sees.



Fig.1



Fig.2

Figure 1, Figure 2: The Folklore Museum of Xanthi

The Folklore and History Museum of Xanthi is housed in a preserved building that dates back to 1860, a characteristic example of Xanthi’s eclectic 19th-century architecture that reflects the “golden” era of the tobacco trade and bourgeoisie of the city of Xanthi. It belonged to Vasileios Kouyioumtzoglou, a known tobacco merchant of the time. It consists of two iden-

tical houses intended to be inherited from the descendants of Kouyioumtzoglou. Since 1970 it belongs to the Progressive Union of Xanthi and after its restoration became the main exhibition area of the Folklore and History Museum of the city.

The fact that the building that houses the museum has been restored and preserved to its biggest part was a very important factor for its selection. The spaces exude a special atmosphere of another era, while the museum's exhibits, which are placed in their "natural environment", are connected to the space and to their time. We chose to preserve the spaces as they were in the 19th century so when the visitors walk inside the museum they will feel as transported to another era.

More specifically, the twin buildings consist of a common basement, which was used by the staff of the two houses, two identical ground floor reception area each, with a living room, a dining room, an office and a kitchen, connected through a single door, and the sleeping quarters on the upper floor with four bedrooms each house and without any communication between the two houses on this level. Also, there is a backyard where there are two hammams, one for men and one for women. Our design expands through the basement, the two ground floor spaces, the first floor of one of the houses and the yard.

Although our aim was to provide information throughout the space regardless of the chronological order of the events, we divided the two ground floor areas into two chronologically different periods of the city's history. This way we wanted to emphasize that the city of Xanthi and consequently the houses themselves, from 1830 to 1950, passed through times of great economic boom and decline. Lastly, we chose to maintain some spaces unaltered as they functioned as museum operating spaces.

The visitors are not confronted with exhibits that are de-contextualized objects of another era, but rather explores a space that is harmoniously connected to objects, stories, urban myths, songs and tradition. They become the protagonists of the story. By adopting principles and techniques used in themed houses such as horror houses and escape rooms, we wanted the visitors to become the masters of their choices and to be informed as well as entertained, discovering mysteries, immersing into what they experience, or being content with observing just the obvious.

04. The Context

Our approach places the museum space as a potential space of experiences and interaction, enriched with additional traits. The goal is to create spatial situations that can be perceived physically and emotionally.

We divided our design proposal into four levels of interventions and research. The combination of these four levels creates the final multidimensional museum experience of the visitor.

04.01 1st level: History and Memory

At first, before we have started thinking about the design of the experience and the atmosphere, we have studied and analyzed the history of the building and its residents through the years, in relation with Xanthi's and Greece's history. So, in the primary phase, that starts in the mid-19th century, we organized chronologically the historical events that took place in Greece, Thrace and Xanthi, while we located their connections with the history of the building. On the next phases, we organized these events into categories and then we connected them with the actual space and the exhibits of the museum. Our aim in this level, was to fully understand the history of the building and the social life of the city, in order to trans- fuse, to the maximum possible, the atmosphere of this era and allow the visitor to learn the history as a narrative of the space and the exhibits.

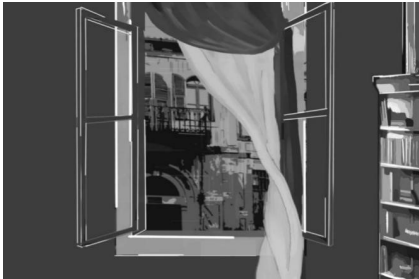


Fig.3 (a)



Fig.3 (b)

Figure 3: Depending on how much time the visitor stays in the living room, (a) the window opens due to a strong gust of wind, helped by an automated mechanism. The moment that the visitor stands in front of the window to close it, with the help of project mapping technology, the next-door building appears. The building next door also belongs to Vasileios Kougioumtzoglou and it was built in 1830. Afterwards, with the use of a special effect that mimics an earthquake, a local vibration is created to the space in front of the window. At the same time, (b) a newspaper appears in the library next to the window that informs the visitor about the two big successive earthquakes that occurred in Xanthi in 1830.

04.02 2nd level: Intangible Cultural Heritage

An important part of Cultural Heritage is the intangible folk culture, with elements such as the traditional music, the idioms, morals, customs, as well as myths, legends, tales etc. Folk culture constitutes an inseparable part of common people's ways of life; without it we wouldn't be able to establish an essential connection between us and our commonly shared past. Thus, in this level, we studied the intangible folk culture of Xanthi through 19th and 20th century in order to enrich the museum experience with audio elements such as sound events, music and dialogues, so that the visitor will discover the actual everyday life of the city and its residents.

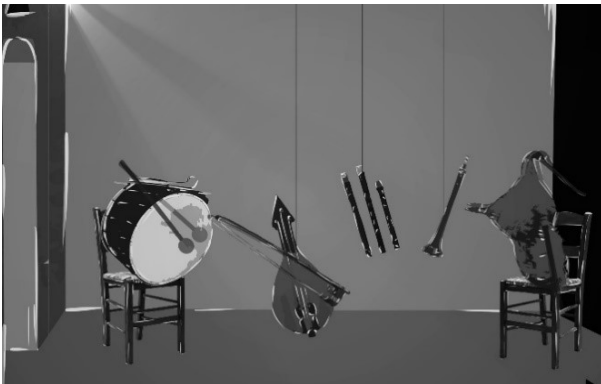


Fig.4

Figure 4: At the house's basement, the visitors will find traditional musical instruments of Thrace. When they get close enough so that the movement sensors can detect them, the musical instruments begin to play Thracian traditional music.



Fig.5

Figure 5: Throughout the route of the museum, the visitors dis-

cover morals and customs of the past. In the bedroom they can learn about types of quackery for diseases (such as stomachache or barley), known morals and customs for marriage, while in the kitchen they will discover information about customs that include kitchen supplies.



Fig.6

Figure 6: In the second living room the visitors can learn about the «mbambo» (grandmother) feast, an important custom of this era, according to which, a specific day of the year the women of each house would drink tea in their living rooms and then they would go to the city's square, while men were forbidden to get out of the house.

04.03 3rd level: Atmosphere

The third level is about the atmosphere of the space. Atmosphere, coming from the Greek words *atmos* (ατμός, steam) + *sphere* (σφαίρα), is the gaseous condition that surrounds something, which we can perceive physically and emotionally. (Mantzou, 2017) This level is not only about the tangible, but also the intangible characteristics of our surrounding space.

In the Folklore and History Museum of Xanthi, the atmosphere is created through shaping the existing space in the way that used to be on the 19th and 20th century, as well as placing the exhibits in their actual position. At the same time, with the use of technology we augment the space with events and situations that are triggered through sensors or the visitors, creating the ambience of a different era. The exhibits that used to be mere objects inside a space, are becoming things, while the visitors become part of the whole.



Fig.7

4.4 4th level: Interaction

The fourth level is about the response of the space and the objects to the visitors' movements and choices and their in-between interaction. As mentioned before, the visitors are called to look for and discover the story of the space and the exhibits. The principles and the technologies of responsive and behavioral design that we used, have as their aim to "confuse" the visitors and make them perceive the space and the exhibits as "living beings" that they want to narrate their own stories.

In this level, digital technologies play an essential role. While the exhibits are seemingly simple functional traditional objects, they are augmented with responsive and behavioral traits that are triggered through movement, sound, touch or temperature sensors. The exhibits are parts of the house and the city's history and at the same time they are also the transmitters of the history to the visitors. While the movement of the visitors are free throughout the museum space, their choices change the way that they experience the exhibition leading to different results.



Fig.8

Figure 8: The visitor tries to open the door that leads to the office of the first house, where he/she will also find the passage for the second house, which is dedicated to the era of decline of Xanthi (1920-1950). However, the door is locked. In order to continue his/her course, he/she has to either go upstairs or unlock all the information in the first living room of the museum.



Fig.9

Figure 9: Exhibits like the traditional music barrel are moving in the space in order to invite the visitor to get into each room and take part in its story.

These four levels form the basis of our proposal. We believe that in order to design the experience of a space dedicated to cultural heritage management at least 4 questions should be answered: 1. What is the storyline of this space? 2. What is the social and cultural framework of the story? 3. Which are the elements that are going to shape the atmosphere of the space? 4. In which way the space or the object is going to interact with the visitor/user?

05. The Technology

As a result, technology had one of the leading roles in our design process. We have studied and used technologies such as Augmented Reality, projections, projection mapping, micro drone cameras, location detection, behavioral materials, internet of things, special effects mechanisms, multisensors etc. Below, we will mention some of the essential elements of the museum technology:

05.01 Responsive and Behavioral characteristics

Some objects function in a specific way throughout the museum's course such as the mirrors, that when the visitors look at them they can see their reflection with traditional attire, the maps that they start to appear when the visitors approach and the picture frames that are moving images, sometimes react to the visitors' behavior.

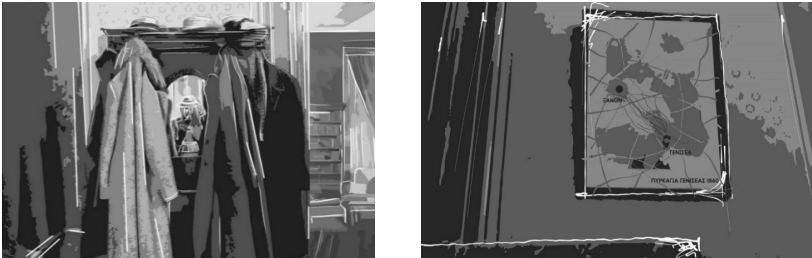


Fig.10

Figure 10: The entrance's mirror that change the clothes and the accessories of visitors' reflection.

Figure 11: The map that informs for the big fire of Yenisea which was the reason for Xanthi's development.

05.02 The app

We also proposed the design of a smartphone app that will be used for the visitor's navigation through the museum, the discovery of more information about the space or the exhibits through notifications or QR codes as well as tracking the visitor's location inside the museum and thus triggering several events.

More specifically, whoever enters the museum, unlocks the door through the smartphone app. During the museum's navigation, the app functions as a guide, while it notifies the visitor for events or provides more information according to what the visitor is seeing at the certain time. At the same time, if the visitor wants to get more information about specific exhibits, he/she can scan the QR codes that are throughout the museum. Furthermore, the app urges the visitor to interact with the exhibits, if it detects that no sensors or events are triggered for a specific time period.



Fig.12

Figure 12: The app notifies the visitor that there is more information to be found about the exhibit.

05. 03 Augmented Reality

Among the exhibits of the museum, there are numerous traditional agricultural, livestock and housework tools. In order to transmit the maximum information possible about each tool, we have equipped them with motion sensors in order to start “operating” when the visitor gets in a specific distance. Additionally, through his/her phone camera and the app, he/she can see with augmented reality the way that each tool was used.



Fig.13

Figure 13: The agricultural and livestock tools found at the basement of the house. Through the app and the phone camera, the visitor can see with augmented reality the way that each tool was used, since a lot of these tools are rarely or no longer at all in use today. Also, he/she can interact with some of them, for example the “douyeni” that moves inside the space and invites him/her to interact.

05.04 Special Effects

In order to get the visitor fully immersed into the museum experience, physical and emotional interaction is just as important as visual interaction. So, we added certain effects such as some special earthquake effects (Fig. 4) and temperature changing effects in specific spaces of the exhibition.

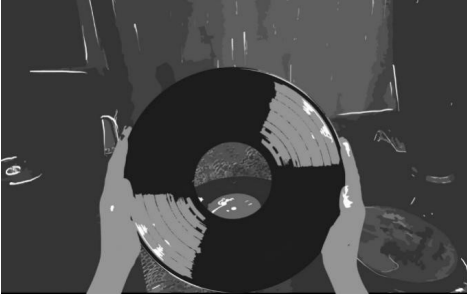


Fig.14

Figure 14: The dining room is fully decorated with wall paintings of landscapes. Also in this room, the visitor will find vinyl records and an old vinyl record player. When he/she switches through the vinyl records, the wall paintings change season according to the music while the room's temperature is changing accordingly.

05.05 Behavioral Materials

We utilized heat-sensitive materials in particular exhibits, which reveal themselves when the visitor gets close to them. Through motion sensors, the surface below the heat - sensitive paper is starting to heat up quickly, revealing the information on the paper.

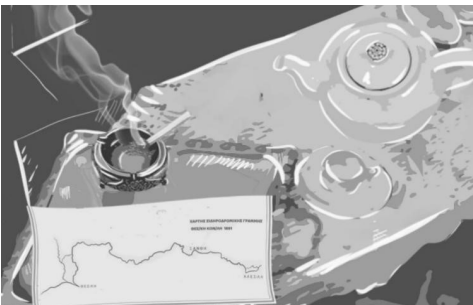


Fig.15

Figure 15: When getting closer to the living room table, a motion sensor triggers a mechanism which heats up the surface below the heat-sensitive paper, revealing a map of 1891 that shows the train line connecting Thrace with Istanbul. The development of this train line was a particularly important event that contributed to the rise of the city of Xanthi.

05.05 Project Mapping

Next to the building of the museum, there is another house of Vasileios Kougioumtzoglou that was built in 1830, and it was destined for him and his wife. We used project mapping to show the house appearing the moment that we are at 1830. (fig. 3) Also, when the visitors go out in the back yard of the house, they can see events with project mapping on the exterior surface of the museum.

05.06 Psychological Traits

On one hand, the evolution of ICT and new digital technologies offer the possibility to design and create responsive and behavioral spaces, however it is also greatly important to use information derived from the psychological and cognitive sciences. Today designers are called to take into consideration not only the physical aspects of a product but also the intangible aspects that are connected with behavioral qualities. More specifically, for behavioral design, designers should study the way that the human brain perceives a moving object, in order to connect the social presence, the design and the organization of interesting interactions with people, as well as the total design of the object's behavior. [Levillain and Zinetti, 2017]

06. Conclusions

The radical changes that occur in the field of technology gives us the opportunity to reconfigure and redesign the way that the museum is perceived and experienced. Even though the tangibility of objects and spaces remains the same, in our newly-found post-alphabetic condition, where the interplay of digital and physical space creates new hybrid possibilities, everything around us is changing and evolving. This could be very useful in the case of Cultural Heritage, as although it constitutes a substantial element of our own being, it is frequently neglected.

So, in the process of searching ways on how we could enhance the interest in cultural heritage and the folklore museum, we created a space that integrates the visitor's experience and enables him/her to become a part of its story. The space comes to life and tells its own story. The atmosphere of the space

allows the visitor to get physically and emotionally involved. The museum experience changes, becomes more personal and redefines our relationship with the space and exhibits.

The interest in folklore museums and cultural heritage in general can be recovered by redefining the purpose and the museum experience in a different way. As the visitor becomes an active participant and factor, as part of a system, and not a passive observer and consumer of default information and experiences.

It is important to rethink how we manage and highlight the past. The times are changing, technology and sciences offer us new possibilities. Museums and exhibits can become, through their redefinition, important elements of this new condition as well as active agents for its further evolution. By giving autonomy to objects and space, complex interactions emerge that allow relationships to be identified [Levillain and Zinetti, 2017]. Responsive and behavioral planning can become a tool and a means for the redefinition of the relationships between space, exhibits and visitors.

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(Hack coronavirus quarantine) dreaming more than (architectural experience) virtual museum visits (in a post-pandemic future)

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Abstract

The purpose of this study is to highlight the contemporary concepts and questions regarding technology and space, focusing on eliminating the dichotomy between virtual and physical space experience, especially during the ongoing pandemic of coronavirus disease (COVID-19). The methods used were mainly collecting data via the internet; such as Online content analysis, Online focus groups, Online interviews and Social network analysis. The results called attention to educational, medical, cultural and work spaces, that have immediately changed their typologies due to COVID-19 pandemic, dissociating from their materiality, using all sorts of virtualized resources in order to activate new vital features of space. Additionally, the research highlighted some of the new tech concepts such as; Decentralization, Big data and Information, Cryptocoins, Open source, Crowdsourcing, Biohacking, 3D printing and Artificial Intelligence. And strongly supported that they will be starring in the contemporary architectural scene. The study concluded with an optimistic view about the post-pandemic future where people act more as a community and less than individuals.

Keywords: coronavirus quarantine, architectural experience, post-pandemic future, virtual/physical space

01. Coronavirus current situation

In 2014, the world avoided a global outbreak of Ebola, thanks to thousands of selfless health workers -- plus some very good luck. In hindsight, we know what we should have done better. So, now's the time (2015), Bill Gates suggested, to put all our good ideas into practice, from scenario planning to vaccine research to health worker training. As he says, "There's no need to panic ... but we need to get going." (Gates, 2015). This prophetic statement described accurately the current 2019-20-21 coronavirus pandemic, an ongoing pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS CoV 2). The outbreak was identified in Wuhan, China, on November 17, 2019. The World Health Organization declared the outbreak a Public Health Emergency of International Concern on 30 January, and a pandemic on 11 March (wikipedia, 2020).

On 22nd of March, the Greek authorities announced restrictions on all non-essential movement throughout the country, starting from 6 a.m on 23rd of March. Since that date, movement outside the house is permitted only for certain reasons. The precautions started to resemble the measures to be taken when the plague appeared in a town in the seventeenth century, as Michel Foucault stated. The plague-stricken town, traversed throughout with hierarchy, surveillance, observation; the town immobilized by the functioning of an extensive power that bears in a distinct way over all individual bodies - this is the utopia of the perfectly governed city (Foucault, 1995). But, as Roberto Esposito has responded to Jean-Luc Nancy's *Viral Exception* (published in Italian on "Antinomie"), it seems that what is happening in the world today, with the chaotic and rather grotesque overlapping of national and regional prerogatives, has more the character of a breakdown of public authorities than that of a dramatic totalitarian grip (Esposito, 2020).

02. The coronavirus dissonance changes dynamically material/spatial experience

The recent COVID-19 pandemic had also a significant effect on material/spatial experiences, focusing in the design of architectural spaces with standard guidelines and, in our case, architectural education. Being more accurate, spaces like workspace, educational, medical and cultural ones are immediately changing their typologies, dissociating from their materiality, using all sorts of virtualized resources. But the transformations do not stop there, the challenges of physical distancing in urban settings and the strategies that minimize the effects of potential resurgences of COVID-19 and other future pandemics are becoming major (Pacheco, 2020). The matter of distancing has been

especially crucial in the dense urban environments of cities as the rate of infection in the world's cities greatly outpaces that of suburban or rural areas. The density of the city, which has historically been considered its greatest asset, economically, socially and environmentally, is now precisely at odds with the realities of a pandemic, and has become a crippling vulnerability. We will continue by stating some temporary examples of dynamically changed physical spaces.

02.01 Workspace

The workplace design ideology that evolved through 2010s, was to establish collaboration through physical design of space. The aim was to design more spaces where maximum no. of gathering could happen, in pairs or large numbers of people. The prevention techniques of the virus are an antithesis to the developing trend of physical collaborative workplaces (Shubham, 2020). But this transformation, from physical to virtual meetings, was not as difficult as we thought it would be. The role of cloud computing, including data storage, software services and giving remote access to any work related subject, that emerged some years ago, was vital. Everything has started to move to "the Cloud", where you can access it from anywhere in the world, less dependent on physical space, with less printing and less face to face meetings (Bunn, 2020).

Although theoreticians of the 90s such as William Mitchell expected that by that time the new technologies will alter the spatial configuration between workspace and home, it is now maybe the time that the domestic living room is emerging as a major site at which digitally displaced activities are recombining and regrouping themselves in the physical world. It's not just in the homes of electroypuppies, digirati, and chiphead hobbyists. In many places now, news and entertainment, education, work, shopping and banking, and lots of general social interaction are starting to flow in and out through small, housebroken, electronic boxes. (Mitchell, 1996)

02.02 Universities and Schools

The COVID-19 pandemic's impact on (not only) higher education is vast. But contemporary pedagogies, portraying the image of flexibility and adaptability in the changing landscape of architectural education are not something new. Massive open online courses (MOOC) aimed at unlimited participation and open access via the web, made by universities like Stanford, MIT, and Harvard, and companies, such as Microsoft or Google, or by various organizations, such as IEEE or the Linux Foundation, since the 2010's. Moving towards a de-densification of physical classrooms and routine schedules, became essential in order to continue schedules and examinations of the educational process.

02.03 Hospitals

Health care facilities are hastily constructing new entrances and testing facilities, installing glass doors, and crafting face shields to protect workers. Once-open spaces are being enclosed by temporary walls, swinging doors leading to new entrances, with registration desks protected by pane of glass and series of cubicles (Marshall, 2020). New temporary facilities for assessing potential patients are converting stadiums, gymnasiums and hotels into COVID-19 treatment centers.

02.04 Museums

All too often in times of crisis and uncertainty, diversity, equity, accessibility, and inclusion are deprioritized as cultural institutions make sense of their new realities (American Alliance of museums, 2020). Newspaper columnists would have you believe that we're currently experiencing a revolution in the way we consume art and artefacts online. But for gallery-goers who are yet to log on, visiting these aforementioned virtual venues is likely to result in disappointment. Interior architecture is its own kind of user interface, and a key factor in art's enjoyment, needing a more creative use of the digitized new media (Maxwell, 2020). In a world of immediate and distant exposure, museums and art galleries extended their spatial presence and therefore new contemporary art forms emerged, arts of experience, dislocated from space, but located in time, and the time is now (Virilio, 1998). Participation, interpretation and connection on one hand and personalization, re-contextualization, interaction and immersion on the other, are key elements of the change that is occurring in cultural heritage assets and the institutions traditionally associated with them. The need to adapt and personalize museum experience, deconstructing the physical and virtual museum tours, creating a surrounding, multisensorial feeling, is immersive.

03. Computer hybrids beyond the dichotomy of virtual and physical space

Current digital tools have always been pervasive and ubiquitous in architectural theory and practice. As Mario Carpo commended, the first digital turn in architecture changed our ways of making and the second is changing our ways of thinking. The early software for computer aided design and manufacturing (CAD/CAM) spawned a style of lines and surfaces that gave visible form to the first digital age, and left an indelible mark on contemporary architecture. But today's digitally intelligent architecture no longer looks that way. In the Second Digital Turn, the design professions are now coming to terms with a new

kind of digital tools that they have adopted, no longer tools for making but tools for thinking (Carpo, 2017). From augmented reality for construction to 3D printing architectural models and to using artificial intelligence within the design process, it is increasingly rare that an architectural project does not use some kind of digital tool either for design or fabrication. This is also the case throughout how we experience the built environment. The digital is everywhere; from the infrastructure we use to navigate the world to the objects we use to communicate (Claypool, 2020). We will continue by highlighting in the next sections some of the new tech concepts that will be starring in the contemporary architectural scene and contribute to the previous challenges concerning standardised architectural spaces.

03.01 Decentralization

“Decentralization” is one of the words that is used in the cryptoeconomics space the most frequently, and is often even viewed as a blockchain’s entire *raison d’être*, but it is also one of the words that is perhaps defined the most poorly. There are actually three separate axes of centralization/decentralization, as follows:

- Architectural (de)centralization – how many physical computers is a system made up of?
- Political (de)centralization – how many individuals or organizations ultimately control the computers that the system is made up of?
- Logical (de)centralization– does the interface and data structures that the system presents and maintains look more like a single monolithic object, or an amorphous swarm? (Buterin, 2017).

Confronting architecture as an agent, transforms “architectural space” as not just being designed by a city planner or an architect, but existing as the result of a complex and multifaceted multiplicity of processes in which many authors and stakeholders are involved (Miessen, 2011). Maybe, while advocating for designers as key contributors to disaster resilience, we should reach to an alternative infrastructural model through community-specific design (Dashtpeyma and Ghodsi, 2019).

03.02 Big data, Media and Information

Data is one of the biggest byproducts of the 21st century. Almost everything we do produces data, from swiping credit cards to emailing, “liking” photos on Facebook, and requesting directions in Google Maps. Meanwhile, an increasing number of gadgets in the built environment, such as thermostats and refrigerators, are bolstering the Internet of Things and relaying the

data that they gather (Davis, 2015). During the pandemic, the population is having to use complex data to understand what is happening around them, and how to adapt their behavior. Flattening the curve is about numbers, so accurate and carefully reported data is crucial for us all. In war, information and communication are everything. As we continue to use the language of warfare in our discourse about Covid-19, it is clear we need better communication and data representation (Stone, 2020). If architects are to harness, use and manipulate data from the built environment, even more significant procedural changes may be coming in architectural space.

03.03 Cryptocoins, Open Source, Crowdsourcing

People spread around the world can perform a range of tasks – from the most rote to the highly specialized, creating a type of new labor pool. Wikipedia enthusiasts quickly fix inaccuracies in the online encyclopedia. Viewers of YouTube find the one tastelessly funny amateur video from the 10 that are merely tasteless. (Howe, 2006). Blockchain is the name given to the technology that supports Bitcoin, Ethereum and other digital currencies. People are prevented from hacking (i.e. altering) the shared transaction ledger by means of cryptography. The practical applications of the technology to architecture in areas such as the exchange of digital assets, the struggle between privacy and security, is brought to light as a stimulus to design (Coyné and Onabolu, 2017). Changing modes of conception, production and consumption of architecture within the larger open source and crowdsourcing discourse leads to a systemic appropriation of the hacker and digital culture as an architectural agency. In the era of Wikipedia, Crypto and Facebook, such approaches offer the field of architecture a means to maintain its continued relevance through a constant process of negotiation with the socio economic flux of our contemporary society (Goyal, 2013).

03.04 Biohacking, 3D printing

Spurred by insecurity, students, scientists, developers and health professionals have taken to online biology forums, in recent weeks, to help investigate potential vaccines and innovative methods of testing. Many of these online communities have been around for years, but the fast spread of coronavirus has further ignited them. Biohacking used to be a fringe space, but it is becoming a kind of breakout moment for things like DIY biology and community labs and hackerspaces, because this won't be the last pandemic (Kari, 2020). Furthermore, anonymous bitcoiners are taking the search for a coronavirus vaccine into their own hands – bypassing academia, pharmaceutical companies and the U.S. Food and Drug Administration (FDA) (Hertig, 2020). According to Richard Sennett, this kind of craft collaboration

already existed in Archaic times, where the communal bond among craftsmen was considered vital for the gradual evolution of skills. This collaborative spirit had been lost for centuries till the recent examples of open-source software like Linux. In Linux the process of skill evolution is speeded up and the result is an evolving product of collective knowledge (Sennett, 2008). Amazingly, biohacking movement, as well as a series of material and design experiments, implement those methods in the architectural practice. Open-platform research is deployed as a tool to scale-up the manufacturing of biologically augmented materials in the building industry, a broad potential exists in the production of biomolecular self-assembling living materials, such as mycelial composites, with properties that are beneficial for all organisms (humans and non-human) (Elsacker, Poncelet, Peeters and Laet, 2019).

03.05 Artificial Intelligence

Voice technologies using AI are being used to help combat loneliness in countries including Sweden and the UK. And they have been used more widely as coronavirus spreads (Savage, 2020). Artificial intelligence (AI) is a wide-ranging branch of computer science concerned with the development of systems able to perform tasks typically requiring human intelligence. The technology is advancing at a high pace, and it shows great potential for implementation across many fields. AI brings along opportunities that would radically change the existing workflow within the architecture profession (Cutieru, 2020). But, is this the end of architects? Sebastian Errazuriz claims that only a very few architects will survive, architecture as an artistic practice is the only one that will survive and it will be developed by a tiny elite. The rest, they're done, they're doomed, they're gone. (Fairs, 2019).

04. A post-pandemic future

The way we experience the built environment has changed dramatically, due to recent events. Digital is everywhere and information has to be rapidly spread, from the software applications we use to navigate the world, to the objects and machines we use to communicate. The use of technology to heal, prevent, record reality, amplify senses, control the virus, feel safe, connect, personalize, experience more and create a routine is essential. Looking towards the future, the world seems to have learned a different lesson. A communal spirit, ironically born through social distancing, caused people to turn outward, to neighbors both foreign and domestic (Yong, 2020). Maybe architecture could start to dream more than virtual museum visits, towards a post-pandemic future, where people act more as a community and less than an individual.

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Art museums and ICT: Digital image as a museum exhibit

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Abstract

Rapid growth in web and virtual environments such as virtual and augmented reality, as well as the evolution of the digital user experience, not only have influenced the changing perception and expansion of artworks, but have also affected the museum space. The use of new forms of cultural representation associated with the use of advanced information technologies and applications has shaped a new reality, which introduces new theoretical and practical approaches to contemporary museum exhibitions. The new technologies enhance the visitor's ability to communicate with the exhibits, support the concept of "Live interpretation", the social dimension of the visit and finally the museum's function as a space of meeting and experience, transmission of meaning, message and knowledge. The museum exhibition is the museum's primary form of communication. Exhibitions are framed environments where meaning is created by arranging objects within certain frames and boundaries. The signification process of the exhibition as a whole is related to the arrangement and placement of objects, real or virtual, constructions and texts in the exhibition space. Using examples from both international and Greek contexts, we will focus on how museum exhibitions create and convey meaning using digital representations, at times side by side to objects and sometimes replacing them.

Keywords: cultural representation, museum visitor, art exhibitions, digital art museum

01. Cultural Heritage and Museums

Art is the main area of Aesthetics. With the work created by the artist qualities and values acquire shape, those that move the viewer, those that the viewer seeks to define, classify, interpret in order to understand the phenomenon of Art and Beauty in human creations. However, every artwork is a unique system, defined by its materials, its rules and its formal idiom. The main institution for the promotion and valorization of art is the Museum. The museum we are referring to is one that was born, as a concept and form, with humanist education and which, it seems, may end along with it in the 21st century. The history of the museum goes hand in hand with the history of culture, science and ideas, but also with political and social changes. The whole of artistic creation, in a perspective that takes us back to the earliest beginnings, is part of the Cultural Heritage. Not only in the sense that these works have survived to the present day as a legacy to our ancestors, but also in the sense that those lost are inherent in those saved, lost links in a chain that reaches the today's creations, in a sequel that each piece presupposes its precursor. This, of course, applies to every facet of culture and not just to art.

The most important institution for the development of the Cultural Heritage is the Museum. It offers protection and security to the objects it houses, enables classifications, categorizations, the development of evolutionary series etc, that help in the study of specialists and in various ways, presenting the past to the public. ICOM's (International Council of Museums) definition of a museum is "a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment."

The Museum, therefore, is a complex organization. Typical examples are the large and well-known museums - places of pilgrimage to tourists - such as the British Museum, the Louvre and many other overseas, but also our own Acropolis Museum. However, a great number of museums of a smaller size, also fully meet the complex function set by ICOM.

The term museum, apart from a building as we know it, encompasses also various monuments, archaeological and theme parks, whole settlements that function as large museums, farms, ships, mansions or houses where famous people lived and so on. There are also "open-air museums" where actors-animators revive a historical period within the historical topos itself, and with the objects of the era. What has been reversed today is authenticity as a condition of exhibiting an object. There are

museums that do not have any authentic objects at all, such as museums of cast objects (copies) but also digital museums.

The institution of the museum was born in Europe, and within about two centuries it has spread everywhere. Most museums were founded in the 20th century and new ones are constantly being established, most of them in the West. The image of the museum, as it is the case with all institutions, takes on the particular tone of the society, responding to its needs and values. The democratization of museums and the realization of the museum's role in modern society are directly related to the change in the way the museum communicates with the public. This communication is now a process of participation and association in which the message is reshaped and altered, and reality is redefined through different contexts or 'interpretive communities' (Fish, 1989). New technologies enable museums to respond to the new social demands of postmodern society: that of changing realities, multilevel and different interpretations, networks and synchronicity. The communication proposed by the new media is not about transmitting meanings for the purpose of manipulating and demonstrating power to the public but is aimed at a cultural process in which messaging is essentially a negotiation of one aspect of reality.

02. Approaches of the new museology

Modern approaches place the museum in the position of transmitting a variety of messages concerning cultural phenomena of other eras. In the position of the receiver they place not an impersonal audience, homogeneous and unified, as it was until recently, but individuals or groups of individuals differentiated from each other as they perceive the transmitted message differently. The purpose of the museum exhibition therefore is to transform the interests, positions and values of visitors as much as possible, offering them an intense intellectual and emotional experience through which visitors will discover the messages of the exhibited objects in their own, personal manner. Comprehending concepts is, moreover, an emotional rather than a cognitive experience. The transmission of meaning to the visitor, who acquires and modifies it in a personal way, ultimately transforms him into an interpretive participant of the exhibition.

Museums interact with visitors mainly through their exhibitions. Exhibitions use various interpretative tools which have a different purpose and function. Already the way in which the objects on display can be correlated to form a unity of meaning is one such medium. Authentic objects are accompanied by information, where printed text in the form of a caption, catalogue or signboard has been the dominant medium for museums for more than 150 years. Recently the text has been supplemented with

images, models, audiovisual and other accompanying material, which they are also understood as exhibits in their own right, interconnected with the objects of the collection. Along with spatial planning, they play an important role in creating and communicating the museum experience.

03. Art museums and exhibition practices

Art museums, according to 19th-century romantic notions of art, ranks highest among the other types of museums. The beginnings of the art museum are traced back to the collective activity of earlier times. Collectors, usually rich merchants and princes, exhibited their collections in studios, cabinets of curiosities, *kunstkammern* or *wunderkammern*, for their own pleasure. The decorative way of exhibiting was dominant, paintings were exhibited alongside with other curious objects.

The transfer of the Francesco di Medici studiolo from his palace to the large and bright hall of the Palazzo Uffici's Tribuna in 1581, represented a significant change in the exhibitionary practice, as the solitary, thoughtful viewing of artworks has given way to a more social observation (Hooper-Greenhill, 2006). With the French Revolution, at the end of the 18th century, the museum completed the transition of art from the private sphere to the public. The Louvre's royal collection was offered to the citizens and it was the first art museum to open its gates to the general public in 1793. At the 1803 exhibition the arrangement of artworks was exclusively based on chronology, artistic development and national schools. Explanatory captions were put next to the works and catalogues were printed, cheap enough to be purchased by the ordinary citizen, alongside the most comprehensive ones addressed to the experts (Seling, 1967, p. 109).

All major museums established in the 18th and 19th centuries participated with their collections and exhibitions in the formulation of "grand narratives", both national and aesthetic. The ideas of the Enlightenment about human progress, the notion that the lower classes can be raised spiritually and morally through art and museums, gave them an educational destination. The exhibitions of art museums began to be encyclopaedic in nature and were organized in accordance with the principles and scientific structure of Art History. Their educational function was only implied by the presentation of their masterpieces to the public. Along the way, with the influence of historical, social and artistic changes in art itself, the way in which artworks are displayed, the shape of building-shells and the perception of their educational role will change more than once.

At the beginning of the 20th century, the idea of an aesthetic museum prevailed, according to which the primary obligation of the museum was to present the works as objects of beauty and aesthetic contemplation. An important breakthrough was the museums of modern art that housed post-war art in the US. For example, the Museum of Modern Art of New York (MOMA) is the museum that established the white cube aesthetic as an international exemplar of modern art's display and has been the source of inspiration and imitation for many museums around the world (O' Doherty, 1999, p. 24). The introduction of direct educational practices aimed at interpreting art in art galleries and art museums initially met with resistance. However, in these museums, as in other non-art museums, interest is soon to be shifted from the museum's collection to the visitor.

Another issue that characterizes today's art, and consequently affects not only exhibition practice but also the operation, organization, and even the architecture of art museums, is undoubtedly the issue of "culture of spectacle", of art as a spectacle. Guy Debord (1996) first introduced the concept of spectacle, not merely as a mass of images, but as a "frozen and distorted version of social relations". Debord emphasized visuality as a form of domination, as something that dazzles and at the same time deceives, seduces and stuns the viewer, making him surrender. In today's consumer society, the spectacle finds its typical expression in the image that serves to promote consumption. Art has now been incorporated into a system of commercial entertainment, over-publicity, and cultural tourism. It is perhaps inevitable, in the context of today's prevailing market economy dominated by the commercialization and recreational approach of the museum experience that the art museum responds to in its own way. The museum is aiming at the visitor who wants to contemplate art but at the same time wants to be entertained and consume. Temporary exhibitions now consist the majority as they provide revenue to the museum, while the permanent ones are constantly alternating, as if they were temporary.

03.01 Digital technology and art museum exhibition

The revolution in how museums manage and present their collections has been brought about by new technologies. Their use has influenced not only the collecting activity but also other functions, such as maintenance, research and educational. It is a fact that digital technology is more integrated into non-art museums. Interactive exhibits have been used primarily in science and technology museums, such as the Science Museum in London.

In art museums, new technologies were confined to the fringe and not inside the main showrooms. This may be due to the "aura"

(Benjamin, 1969) that still surrounds the work of art with its physical presence and uniqueness. The artwork is predominant in space and digital technology has only an auxiliary role. The art museums, after all, are built around the collections of the works they exhibit.

Could digital technology partially or completely replace the physical presence of a work of art, and how and for what purpose could it be done? Many art museums have already made efforts to make new technologies not only an auxiliary, complementary tool in organizing exhibitions, but also an organic part of the exhibition, thereby helping the visitor to understand the subject and interpret it. Among them are some of the major art museums which, apart from shaping the scene of digital art through their shows, commissions, acquisitions and residencies, are also promoting innovative methods of curation and new forms of display and interaction with the public.

A short list of the most well-known art museums investing on this field includes: MOMA PS1 in New York with the opening of a department dedicated to new media implementing specific exhibition modes and answering to the new preservation needs technology requires. ICA in London with a number of ground breaking exhibitions of artists like Jasia Reichardt, Morag Keil, Metahaven duo, Seth Price, all connected to digital technologies. The Walker Art Centre in Minneapolis, one of the early players in the field of digital art, organized some of the first online exhibitions and now continues its strategy of collecting new media, proposing audience-oriented, engaging installations and presenting solo shows of emerging visual artists. The Whitney Museum of American Art in New York, also a leading agent in digital art carries on a long collaboration between artists and tech companies, or science labs, started in the 1960s. The V&A Museum in London holds in its collections a large number of computer artworks from the last 50 years and also offers digital-focused residencies and organizes an annual Digital Design Weekend. The Bildmuseet in Sweden defines itself as a “place for experiences, reflection and discussion” where “existential, political and philosophical issues” are challenged. Its shows focus on connections between the work of scientific researchers and that of contemporary digital media oriented artists.

03.02 Digital Art Museums: The case of Georgios Jakobides Digital Museum

In April 2018, the Atelier des Lumières, a digital museum dedicated to art, opened in Paris. It is housed in an old 19th-century foundry of 3300m² and colorful displays of early 20th-century paintings are projected on 10-meter-high walls. The curators defend the impact of technology on the way people experience art and the way art is made accessible to a large

audience that does not regularly visit museums or galleries and how it “can become the introductory way to discover art” as stated by Atelier des Lumières director Michael Couzigou.

Japan’s Mori Building Digital Art Museum was founded in Japan in 2018, yet another entirely digital museum of art. Visitors walk through a labyrinth of empty spaces and immerse themselves in colorful installations, activated by motion sensors and displayed on every surface of the huge exhibition space. The museum uses a total of 520 computers and 470 projectors. Thanks to projection-mapping technology, artworks respond to the movement and touch of visitors, so “everyone can enjoy this experience in their own way”, notes museum’s director Ou Sugiyama.

In Greece there are also digital non-art museums, such as Gaia (Goulandris Museum of Natural History), the “Hellenic Cosmos” Cultural Centre and Museum and more recently the digital, interactive multimedia museum in the area of the Academy of Plato, all of which rely mostly on multimedia applications and less on physical exhibits.

Greece’s first digital art museum “Georgios Jakobides”, opened in 2008 and is located in the painter’s birthplace in Chydira, a mountain village on the island of Lesbos. The museum was created by N. Papadimitriou, co-native of Jakobides and also founder of the NIKOLAOS G. PAPADIMITRIOU Educational and Cultural Foundation. The purpose of its creation and operation was to honor the artist’s birthplace, to provide the local community with a place of cultural and educational interest and to contribute to its tourism development. Mrs Olga Mentzafou-Polyzou edited the conceptual design and the texts. Sonia Charalampidou-Divani, Architect and Professor at the NTUA, RCL Architects and Partners, Michel Rossier, Eirini Charalampidou and Kristian Laskaridis undertook the museological study, architectural design and supervision of the project. The Post-Scriptum Information Architecture has implemented the digital design and multimedia applications.

Given the absence of original works by the painter, which are very difficult to obtain as they are in museums or private collections, and when sold for auction mainly overseas, their prices are prohibitive, the digital museum is a simulation of a real museum exploiting the potential of new technologies. Its visitors come into contact with the life and work of the great Greek painter through the use of modern digital projection and interaction applications, in a comprehensive and multilevel way where the simple visit becomes a visual experience for enjoyment and knowledge. Basic concepts are presented and analyzed in detail with the help of digital applications. Through thematic sections and the use of technology, the paintings are brought to life, analyzed, made more intimate. Highlighting

important points in the paintings, combining storytelling and graphics, the dialogue and the encouragement of in-depth observation, all enhance the museum's educational dimension.

On the ground floor, the painter's personality is presented through the story of his life, with digital applications utilizing photographs of family moments, of his workshops in Munich and Athens, as well as archive material from his professional achievements and his social circle. He had an important presence in exhibitions organized in Athens and the International Exhibitions of Paris (1878, 1889 - bronze medal, 1900 - gold medal). Also on the ground floor screens, the visitor has the opportunity to see Jakobides' illustrations that complement important editions of the time and to be informed of the medals and coins designed by the artist. In the same space, the visitor can deepen his interest, through the navigation in the Georgios Jakobides cd-rom application, his life and work, where the painter's work is presented linearly but also in thematic sections, with captions for almost all the works presented at the museum. The application is complemented by a digital timeline enriched with archive material on important events in his life and creative career.

The first floor is dedicated to the works of Georgios Jakobides, from the early years of his apprenticeship to his teacher Nikephoros Lytras and his work of the Munich period to the portraits of his grandchildren painted at the end of his life. Colors, faces, moments of daily life come alive through a variety of digital applications. Mythological themes, scenes from childhood and family life, landscapes, human forms in nature, portraits, still life and flower paintings are analyzed and brought to life through a variety of electronic projection systems such as TFT screens, touch screens, bilingual backlit transparencies (duratrans) and projection screens. Interactive applications like isolating the details of the painting and highlighting important elements, the magnifying glass, that is, the digital zooming on a piece of work allows the visitor to understand his artistic technique, comparing it with other artists but also with other works by Georgios Jakobides and his teacher. These are some of the ways the digital museum promotes the educational dimension of art.

In the section "The years of maturity" on the 1st floor we see works of the years 1891 to 1900. It is the period that differentiates the painter in the performance of his themes. He is influenced by new trends in painting and mainly by Impressionism. A typical example of this period is the painting "Children's Concert". This work has been painted in two versions. The earlier one was first shown in 1896 in Athens and Jakobides repeated the painting in order to send it to the 1900 Paris World Fair, where it earned a prize. Below the "Children's Concert"

there are two interactive applications. With the first application the visitor, wearing headphones, can hear an analysis of three works “Children’s Concert”, “Cold Shower” and “First Steps”. In the second application there are detailed texts for the “Children’s Concert” due to the importance of this painting. On the screen to the left of the “Children’s Concert”, there are works by German painters, such as Max Liebermann and Fritz von Uhde, who lived in the same period as Jakobides and were associated with new trends in painting. Thus, the visitor can compare works that have similar themes to those of the artist, that is, simple family moments or depictions of children.

On the lower level of the building, a short video about Jakobides’s artistic path in Athens and Munich is shown while the space itself is available for educational activities that engage school children and the general public. The Georgios Jakobides Digital Museum, since its opening in 2008, has been visited by large number of Greek and foreign visitors as well as students of all grades –primary, secondary and higher education. The educational programs offered are specially tailored for each grade, aiming at promoting the diachronic value of Jakobides art for learners, inciting students to study the works from a different perspective. With the use of technology, the works come to life, been analyzed and appreciated, thus emphasizing the educational dimension of the Museum. Educational guides for educators working in pre-school, primary and secondary education have also been designed in print and electronic form, enabling them to be informed on the subject even before their visit.

04. Conclusion

In conclusion, a digital museum created by databases resembles the Imaginary Museum described by André Malraux (1965) as a boundless collection of works of art of all times and cultures, freed from any local and spatial constraints. The real museum differs not only in the uniqueness of its collection but also in that it has to do with authentic works and objects: we live today in opposition to the fears expressed by Walter Benjamin that reproducibility would take away from the work of art its own special aura, just the opposite, that the wide reproduction emphasizes the uniqueness of the original and increases its aesthetic and cultural value.

The Georgios Jakobides Digital Museum may not have original paintings but by deepening in the artist’s work while offering multiple interpretations, it enhances the educational dimension of the exhibition and at the same time increases the visitor’s desire to see an actual Jakobides painting in another museum that has artist’s works in its collection. And if that is the case, then digital technology will make museums an even more

popular destination. As more and more aspects of our lives become virtual, our fetishistic obsession with the museum object may increase accordingly.

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How dark should dark be? User preferences on dark tourism application content

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Abstract

Dark tourism has become an increasingly popular tourist experience in recent years, where people visit former places of punishment - imprisonment, cemeteries, crime, battlefields, etc. Beyond the features of the monument, building or location, the visitor wishes to discover the “dark story” behind it. Within these frameworks, applications can now be developed to meet the needs of visitors, including technologies such as virtual and augmented reality. In this paper, we investigate the possible correlations between gender, personality, and different dark tourism monuments and content. At the same time, we create the “dark content levels” that a dark tourism application could have. Since there are no applications for dark tourism sites, our research starts from the level of content by wondering how dark should dark be.

Keywords: dark tourism, levels of darkness, dark tourism application, augmented reality.

01. Dark Tourism

Tourism is a main pleasure and business activity in the western world (Walton, 2020). But tourism has many faces and one of them is dark (Tarlow, 2007; Tureac & Turtuneanu, 2010). Dark Tourism has been associated with visits to sites and monuments of genocide, the Holocaust, mass murders, crime and imprisonment (Lennon and Foley, 2000). This term was first used in 1996 by Foley & Lennon (Foley and Lennon, 1996). The phenomenon of tourists visiting either sites where tragedies or historically

significant deaths occurred or monuments associated with such events and these events continue to affect our lives, is defined as “Dark Tourism” (Stone, 2012; Stone, 2006).

However, over the years, various definitions have been given in order to be able to describe tourist visits to places of death. Specifically, during the 1990s and 2000s, different terms were used such as “negative sightseeing” (MacCannell, 2013), “black spots tourism” (Rojek, 1993), “tragic tourism” (Lippard, 1999), “atrocious heritage”, “morbid tourism” (Blom, 2000), “thanatourism” (Seaton, 1996), “grief tourism” (Foley and Lennon 1996, Bowman and Pezzullo 2009), “milking the macabre” (Stone and Sharpley 2008; Dann, 1995), “fright tourism” to specify people looking strong or shocking emotions (Newman and Bristow, 2004), “horror tourism”, “hardship tourism”, “tragedy tourism”, “warfare tourism”, “genocide tourism”, “extreme thanatourism” (Dunkley et al., 2007; Stone, 2012) and of course, the most popular name, “dark tourism” (Foley and Lennon, 1996; Bowman and Pezzullo, 2009; Strange and Kempa, 2003; Stone and Sharpley, 2008; Stone, 2012; Stone, 2006). Thus, it seems that there is no universal typology for dark tourism, not even a universally accepted definition. However, there is a growing tendency among researchers to use the term “dark tourism” to explore socio-cultural issues, management and policy implications or ethical dilemmas (Stone, 2012). As a result, the term dark tourism and its brotherly term thanatourism have entered academic circles and journalism (Stone, 2006).

01.01 Dark Tourism forms and categories

If we analyze the phenomenon of dark tourism, then we will notice that it consists of visits to specific destinations and certain types of tourism. These are the 1) visits to graveyards (Seaton, 2002), 2) celebrity death sites (Alderman, 2002), 3) Holocaust tourism (Stone 2006; Ashworth, 1996), 4) prison tourism (Strange and Kempa, 2003) and 5) slavery-heritage tourism (Dann and Seaton, 2013). In the same way, the experiences offered in these places are various, spanning from fictional death, for example the “Dracula experience” in Whitby (UK), to recreated death, for example the London Dungeon (UK), to sites of real “famous” deaths, even to major catastrophes (eg. Ground Zero). Similarly, Dann (Stone, 2006; Dann, 1998) presents other five basic categories: the perilous places, the houses of horror, the fields of fatality, the tours of torments and themed Thanatos (Stone, 2006). All the categorizations presented above, show that different places and experiences related to death and catastrophe fall under the umbrella term of dark tourism, creating a dark tourism spectrum.

01.02 Dark tourism spectrum

There are different “shades” of dark tourism, depending on both the degree of interest (i.e. how attracting to the tourists the site is), and how the exhibits are organized to address visitor needs (Stone and Sharpley, 2008). In order to capture these fluctuations of darkness, a “spectrum of darkness” has been proposed ranging from “darker” to “lighter” forms of dark tourism (Stone and Sharpley, 2008).

The universal term “dark” is too broad and does not immediately reveal the various levels of this particular tourism. It thus makes sense to create a palette with the shades of dark tourism. For example, the two penal institutions, the former Alcatraz prison, United States and the former Robben Island prison, South Africa, despite having common features, belong to different parts of the spectrum, with Robben Island being considered “darker” than Alcatraz. However, the intensity of the darkness given to a monument can be revised. Such a reassessment may be due to the occurrence of either events (such as a war, a terrorist act or the fall of a regime), or new “representations” (such as a movie, a novel, or memoirs) as they influence the tourist’s interest in the corresponding places of death. Finally, it is worth noting that there is a critical difference between the locations of the monuments associated with death and the locations where they occurred. For example, the site of the Auschwitz concentration camp is probably “darker” than that of the Holocaust Memorial Museum in Washington (Stone, 2006).

01.03 The reason for the existence of dark tourism

Dark tourism is not a new phenomenon, but it has always been a recognizable form of tourism. People have long been associated, deliberately or otherwise, with sites or events associated - with one way or another - with death, pain, violence, and destruction (Stone and Sharpley, 2008). Whenever they could travel, they would visit such dark places. Dark tourism seems to have always existed in people’s lives and has simply evolved over the years to the way we define it today (Stone, 2012).

Additionally, it is still believed that the relationship between tourism and death has changed since the end of World War I. This is because dark tourism is now a consequence of the events of the modern world and this has a significant impact (Bowman and Pezzullo, 2009).

Finally, as overall tourism participation has increased, especially since the mid-twentieth century, demand for dark tourism has also increased, with war-related sites being the largest category of tourist attractions in the world (Stone, 2012; Stone, 2006). Thus, people, each in a different way, have always been attracted to death, through a combination of respect,

morbid curiosity and superstition. This contemporary fascination of Western society with death, whether real or imaginary, drives dark tourism (Stone, 2006).

Technology can be an excellent tool for tourism, whether we are referring to cultural heritage or dark monuments. Of course, even though there are many applications of various technologies intended for cultural heritage exhibits, the corresponding effort for dark tourism exhibits has not been made yet. From the analysis above, it becomes apparent that dark tourism shares many common elements with other forms of tourism and cultural experiences, but it also has some unique elements, like the increased need of the visitor for emotional arousal, which raises questions on content specially designed for dark tourism experience.

02. Methodology

02.01 Research Hypotheses

Since to our best knowledge, there are no past works focusing entirely on dark tourism, we started from exploring individual preferences on the different aspects of the “darkness”, or in other words: “How dark should dark be?” for the different individuals, depending on their personality and their gender. Previous research has shown the importance of both personality and gender in visitor preferences and the way they influence the cultural experiences and content design (Alachouzakis et al., 2018; Antoniou, 2018; Katifori et al., 2019; Pouloupoulos et al., 2018). Thus, assuming that similar factors might affect dark tourism content preferences, the research hypotheses were formed as follows:

1. Research Hypothesis 1 (H1): A dark tourism monument may have different shades of darkness for each visitor, depending on their gender.
2. Research Hypothesis 2 (H2): A dark tourism monument may have different shades of darkness for each visitor, depending on their personality.

02.02 Questionnaire

2.2.1. Dark content level system (Levels of darkness)

So far, there are no dark tourism applications, so our research starts at the level of content. Before examining the research hypotheses, we created three dark content levels (three levels

of darkness) on the basis of which the content of an application could be filtered. The suggested levels could be:

a) Light - The information provided to the user contains only landscape images and does not reveal images of the dead, or images that imply death. Also, the information does not contain detailed information on how death occurred (examples figures 1,2).



Fig.1 (Alcatraz island - Light level picture.)



Fig.2 (Pompeii - Light level picture.)

b) Medium - The information given to the user contains images that imply death but do not reveal images of dead people. The information also contains more analysis of how death occurred compared to the previous level (Light), but not the full analysis that we will see at the third level (Hard) (examples in figures 3,4).

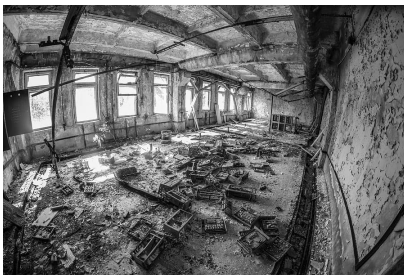


Fig.3 (Chernobyl - Medium level picture.)



Fig.4 (Auschwitz - Medium level picture.)

c) Hard - The user receives all information unfiltered. The information given to her contains images of the dead and a complete analysis of how death happened (examples in figures 5,6).



Fig.5 (Catacombs - Hard level picture.)



Fig.6 (Pompeii, family - Hard level picture.)

02.02.02 Questions

The questionnaire (<https://bit.ly/3daFNSS>) consisted of two parts. The first part had fifty-one questions and the second part two. Initially participants stated their gender and then they answered questions about their personality. The personality questions were based on the “Big Five Personality Test” questionnaire. The Big Five personality traits are a classification for aspects of personality. This theory suggests five broad dimensions commonly used to describe human personality. From the Big Five test we can, for each individual user, calculate their Extroversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experiences and thus map their personality in these five dimensions (O, C, E, A, N). The five-dimensional values range from 0 to 40. This tool has been launched and used in cultural heritage, with users having to answer on a five-point Likert scale for each of the tool’s questions (1 = disagree, 2 = slightly disagree, 3 = neutral, 4 = slightly agree and 5 = agree) (Costa and McCrae, 1989; Katifori et al., 2019; Chen, Su and Quyet, 2017).

The second part of the questionnaire contained pictures of various dark tourism monuments. The authors had divided these images into three levels (Light, Medium & Hard) following levels of darkness described above. This classification was not visible to the participants, as they saw the images in a random order. Participants had to note which images made them feel uncomfortable and which images they would recommend to be used in a dark tourism application.

02.02.03 Image classification

In order to examine H1 and H2, the authors selected eleven (11) images of dark monuments and grouped them in levels of darkness and themes. Three of the images were Light, four of them Medium and four of them Hard. Additionally, from these three groups, there were generated subsets like landscapes, destruction,

ancient times, modern times, volcanos, Pompeii, catacombs, Chernobyl, Alcatraz island and Auschwitz. All these thirteen categories will be examined separately in the next chapter as different variables.

02.03 Data collection

In order to materialize this paper, we used the questionnaire above, as a tool to capture the gender, the preferences and personality of each individual. Data collection took place from 31/01/2020 to 08/02/2020, where we used a snowball method of recruiting participants. One hundred (100) volunteers (50 female & 50 male) with ages ranging from 18 to 25 via the researchers' professional networks (mostly university students). Figure 7 shows the average values of the OCEAN dimensions from the sample used.

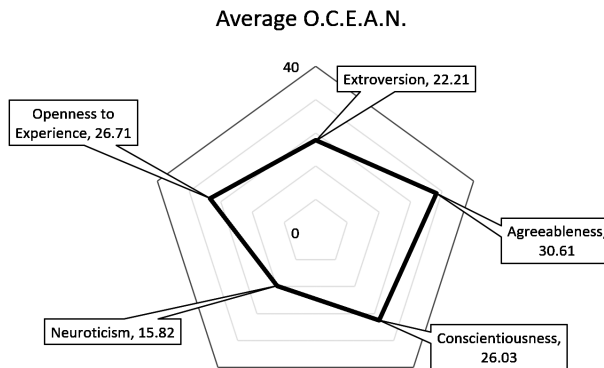


Fig.7 (The O.C.E.A.N. dimensions of our volunteers.)

02.04 Results

02.04.01 Research hypothesis 1 (H1)

The first research hypothesis wishes to study the relation between participants' image selection and their gender. Chi-square tests were performed in order to find possible correlations between gender and image selection. The following results were found:

1. A chi-square test of independence was performed to examine the relation between participants' gender and the Medium level images that made them feel uncomfortable. The relation between these variables was significant, $\chi^2(2) = 6.132, p = .047$ (Figure 8).

2. A chi-square test of independence was performed to examine the relation between participants' gender and the Hard level images that made them feel uncomfortable. The relation between these variables was significant, $\chi^2(2) = 5.936$, $p = .051$ (Figure 9).

3. A chi-square test of independence was performed to examine the relation between participants' gender and the images with "Destruction" (Medium hardness images since they only show destruction of places without victims) content that made them feel uncomfortable. The relation between these variables was significant, $\chi^2(2) = 9.252$, $p = .010$ (Figure 10).

4. A chi-square test of independence was performed to examine the relation between participants' gender and the images with "Ancient times" (in this particular case they were all images from Pompeii) content that made them feel uncomfortable. The relation between these variables was significant, $\chi^2(2) = 7.722$, $p = .021$ (Figure 11).

5. A chi-square test of independence was performed to examine the relation between participants' gender and the images with "Volcano" content that made them feel uncomfortable. The relation between these variables was significant, $\chi^2(2) = 8.568$, $p = .014$ (Figure 12).

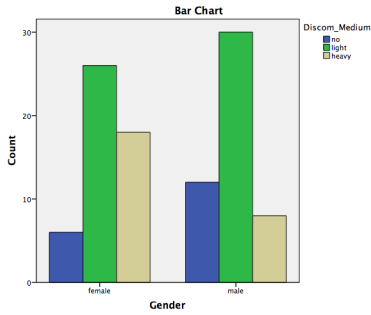


Fig.8 (Correlation between Medium level images that made volunteers feel uncomfortable and gender.)

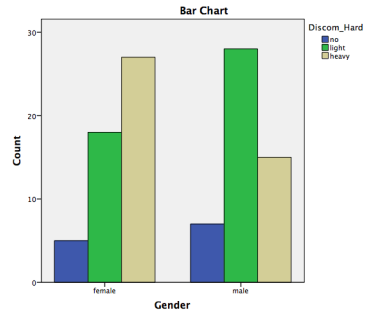


Fig.9 (Correlation between Hard level images that made volunteers feel uncomfortable and gender.)

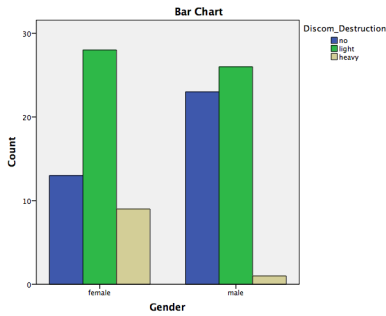


Fig.10 (Correlation between "Destruction" images that made volunteers feel uncomfortable and gender.)

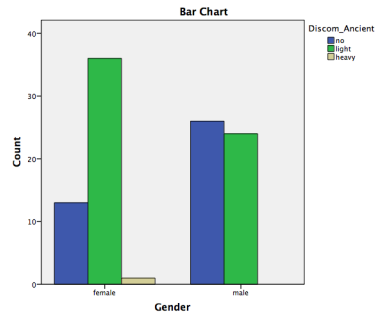


Fig.11 (Correlation between "Ancient times" images that made volunteers feel uncomfortable and gender.)

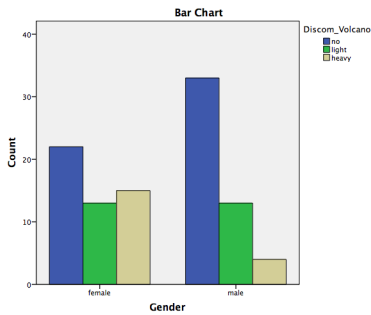


Fig.12 (Correlation between "Volcano" images that made volunteers feel uncomfortable and gender.)

02.04.02 Research Hypothesis 2 (H2)

The second research hypothesis wishes to study the relation between participants' image selection during the questionnaire and their personality. Chi-square tests were performed in order to find possible correlations between personality and image selection. The following results were found:

1. A chi-square test of independence was performed to examine the relation between participants' Extroversion and the images with "Destruction" (Medium hardness images since they only show destruction of places without victims) content proposed for a dark tourism application. The relation between these variables was significant, $\chi^2(2) = 7.466, p = .024$ (Figure 13).

2. A chi-square test of independence was performed to examine the relation between participants' Extroversion and the images with "Modern times" content proposed for a dark tourism application. The relation between these variables was significant, $\chi^2(2) = 6.505, p = .039$ (Figure 14).

3. A chi-square test of independence was performed to examine the relation between participants' Extroversion and the images with "Chernobyl" content proposed for a dark tourism application. The relation between these variables was significant, $\chi^2(2) = 9.335, p = .002$ (Figure 15).

4. A chi-square test of independence was performed to examine the relation between participants' agreeableness and the Light level images (in this case all Light level images were landscapes that did not show any victims) proposed for a dark tourism application. The relation between these variables was significant, $\chi^2(2) = 5.826, p = .054$ (Figure 16).

5. A chi-square test of independence was performed to examine the relation between participants' conscientiousness and the images with "Auschwitz" content proposed for a dark tourism application. The relation between these variables was significant, $\chi^2(2) = 8.013, p = .018$ (Figure 17).

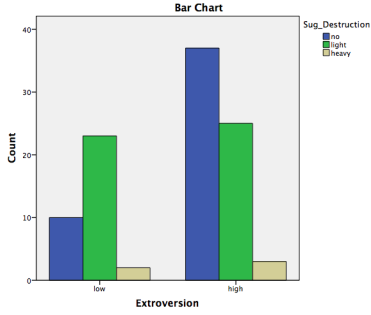


Fig.13 (Correlation between “De-struction” images proposed for a dark tourism application and Extroversion.)

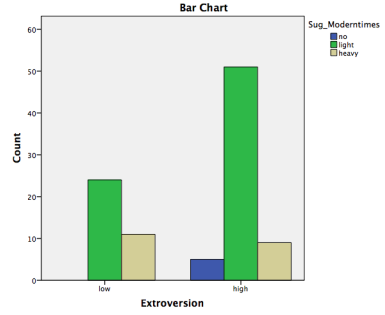


Fig.14 (Correlation between “Mod-ern times” images proposed for a dark tourism application and Extroversion.)

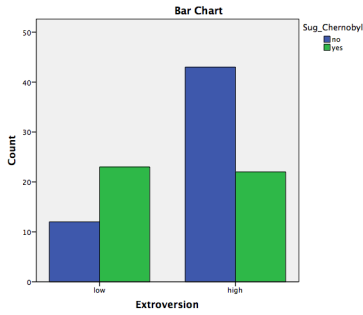


Fig.15 (Correlation between “Cher-nobyl” images proposed for a dark tourism application and Extroversion.)

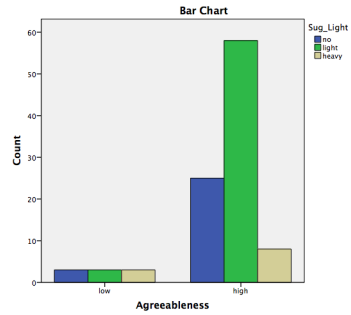


Fig.16 (Correlation between Light level images proposed for a dark tourism application and Agreeableness.)

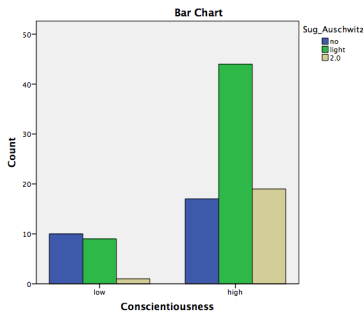


Fig.17 (Correlation between “Aus-schwitz” images proposed for a dark tourism application and Conscientiousness.)

03. Discussion & Conclusions

In the first research hypothesis (H1), we estimated that a monument or a dark tourism site might have a different level of darkness for each visitor depending on their gender. To be more specific, the results of the chi test for H1 showed that in terms of darkness levels, neither sex felt uncomfortable with Light-level images, while women felt more uncomfortable with Medium-level images, and even more uncomfortable with Hard level images than men.

In terms of image content, women felt more uncomfortable than men, with images of Destruction (men in particular did not feel uncomfortable), images from Pompeii (but not very high levels of discomfort) and Volcano images.

In the second research hypothesis (H2), similarly, we estimated that a monument or a dark tourism site might have a different level of darkness for each visitor depending on their personality. To be more specific, the results of the chi test for H2 showed that in terms of levels of darkness, volunteers who showed high agreeableness levels strongly proposed Light-level images to be used in dark tourism applications. In addition, extroverts did not like Disaster images and would not prefer them for a dark tourism application, whereas they seem to prefer images current - more recent - events. It is worth noting here that extroverts, while suggesting recent historical events, do not suggest Chernobyl (they may not consider it a recent story or it is not as prominent as Auschwitz for example). Finally, high conscientiousness people are recommending Auschwitz and similar images to be used in dark tourism applications.

We then analyzed the sample responses overall and made the following observations:

1. Users were given an Alcatraz Light image, a Chernobyl Medium image, and a Hard image from Catacombs. As the six graphs below show, users are becoming more and more annoyed as we level up. Paradoxically, it seems that the more they are bothered by an image and feel discomfort, the more they suggest it for dark tourism applications (which is reminiscent of the sentiments of people going to watch a horror movie) (Figure 18).

2. Users were given two Medium-level volcano images. In the graph below, we note that while such a disaster is part of everyday life, people do not seem to recommend it for use in a dark tourism application (Figure 19).

3. Finally, it is worth noting the high tolerance of all users to Light-level images (Figure 20).

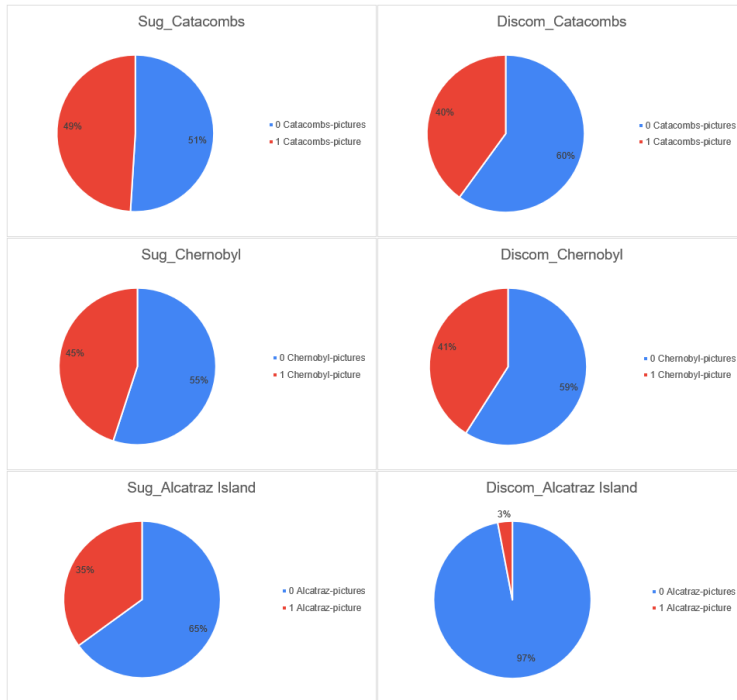


Fig.18 (Proportion of discomfort and suggestions for a dark tourism application.)

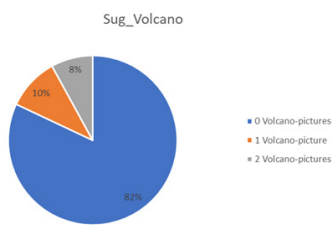


Fig.19 (Volcano picture suggestion graph.)

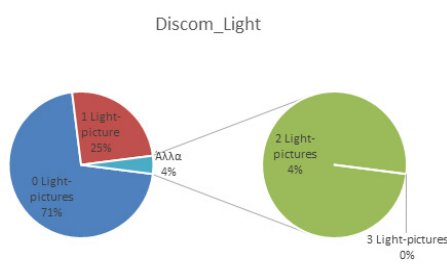


Fig.20 (User tolerance to Light level images.)

Thus, although most participants did not feel any discomfort with light images, they nevertheless do not seem to prefer them as content for a dark tourism application. We feel that there are parallels here between a dark tourism experience and horror films. It seems that people choose these kinds of experiences for high emotional arousal and not for relaxing. It seems that when we design dark tourism applications we need to respect the visitor needs for higher levels of emotional thrill and excitement. In addition, the clear differences observed between the genders, also imply that personalization methods might be useful in order to satisfy diverse user needs in terms of content preferences. Furthermore, different personality types also seem to have very distinct preferences regarding content and have different darkness tolerance levels. From all the above, it seems that dark tourism requirements qualitatively differ from other cultural experiences and should be further explored separately, since they involve strong emotional elements. The present study being among the first to solely focus on dark tourism content and visitor requirements, hopefully shed more light in the special conditions that apply for dark tourism applications. Our future work will also include narratives for dark tourism, that will use different levels of darkness (from light, to medium and strong with explicit dark content), in an attempt to set the basis for developing content for different dark tourism sites.

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The Augmented Realism of Caravaggio

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Abstract

The paper addresses the interpretation of paintings for visitors of an exhibition and students of Art history. Our research project is based on a model with three levels: plastic, figurative, communicative, each one provided with a set of descriptors. Subsequently, this model was used for the design of an application for mobile systems with Augmented Reality (AR) solutions, and then was applied to a selection of masterpieces by Caravaggio. A detailed interpretation of the ‘Boy bitten by a Lizard’ is used as a case study, in order to demonstrate the potential of our approach.

Keywords: artwork interpretation, semiotic modelling, augmented reality, mobile systems.

01. Basic ideas

Throughout our research, we address the interpretation of paintings by adopting a Semiotic approach. Thus, the artwork is analyzed as a text, i.e., a structure of signs organized into a set of connected signification planes. An interpretive process (semiosis) follows a path through the structure, with the aim of making explicit the conceptual relations occurring between the elements of the artwork.

The contributions by Barthes [2] address the issue of representation - what do images represent and how? - and the hid-

den meanings of images - what ideas, ideologies, values do the people, places and things represented in images stand for? An image communicates by means of what is immediately recognizable (denotation), but also by the ways it is expressed, as well as the associated symbolic and ideological meanings (connotations). The latter depend on the shared practices within a society or historical period. An issue concerns the structured organization of meanings: connotation-denotation-expression. Greimas [4] proposes a vocabulary and a set of basic categories - eidetic, chromatic, topological - useful in defining the 'plastic' level of the images. It is the base of the figurative one - the denotative/connotative one by Barthes: furthermore, it is a modality in itself to read an image. Both the plastic and figurative modalities possess content and expression; each one communicates meanings, thereby participating in the semiosis processes. As an example, it is possible to analyze abstract works by means of plastic expressive signs - lines, shapes, positions, dimensions, colors, textures - and the meanings such signs convey, even if not immediately recognizable in the real world.

Greimas [5] also proposed an approach in which the semiosis emerges from the analysis of sign structures (generative semiosis) organized into multiple signification layers: the narrative issues take the maximum relevance. Within a hierarchy of levels, the observer gets in touch with an expressive, superficial one, enclosing the plastic issues; more in depth, one individuates discursive structures composed according to grammatical, rhetoric, semantic relations. The latter are the outcomes of narrative structures, related to the achievement of goals. These, in turn, are consistent with the deep values - ethic, aesthetic, economic - inspiring the work as a whole.

The contributions by Kress and Van Leeuwen [7] follow a social semiotic approach: they attribute inter-personal meanings to the images in addition to the ones cited above. The image establishes or evokes a specific relation with the observer: it induces her/him to make reflections, achieve beliefs and emotions. In addition, the theory proposes a classification of the images into conceptual, narrative, symbolic, as well as operational methods for the interpersonal analysis [6]. According to Eugeni [3] the media experience is a layered model composed by plastic and figurative levels as in Greimas; a communicative level includes issues of the interpersonal model; finally, a meta-communicative level concerns the production and lifecycle of the artwork.

01.02 Mobile technologies: presence and mediation

The advent of Augmented Reality (AR) has fostered the merging of real and virtual, material and represented worlds: a blend of mediated and unmediated stimuli called mixed-reality, in which the visitor of a collection, or a student, live their experiences characterized by novel forms of presence and mediation.

About the presence one should consider: i) Feeling oneself situated in the physical environment; ii) Feeling oneself as a member of a group of real/virtual beings, with some shared interests, tasks and goals; iii) Feeling affectively, emotionally involved into the current activities [8].

About the mediation of technologies, McCarthy and Wright [11] claim that an experience is a continuous mutual involvement of subject and device, realized by means of sense-making actions. They describe four threads for experience that interact and mutually constitute one another: emotional, sensual, compositional and spatio-temporal. The post-phenomenology approach [12] focusses on the relation among subject, technology and world (S-T-W), and proposes the concept of 'technological mediation' [15]. A device modifies the ways a world is perceived/understood, as well as the subject's capabilities to modify it, thereby re-defining the user's role itself. Several kinds of mediation have been proposed [12]. A few concepts relevant to our topics are: i) Transparency/opacity: a technology is transparent when invisible, opaque when visible, ii) Field composition: re-organizing the visual field; the focus of attention; the field of awareness. Finally, multi-stability refers to the multiple interpretations a technology undergoes, even if not conceived by the designer.

Additionally, regarding the specific experience of mobile devices, the flow of information is intrinsically connected with motion, i.e., the sensations of lightness of devices; the ubiquitous, seamless access to knowledge; possibly, the easier apprehendability [1]. More than that, moving in a mixed world allows to connect multiple information flows concerning the objects - e.g., the paintings of a collection - and realize the unique, integrated experience of a path through the artworks, which, in turn, may originate individual stories to tell.

02. The meta-model

The meta-model describes some of the structured meanings embodied in a painting. It generates an interpretation, i.e., a specific model of the painting under inspection to submit to the

user. We propose a three-level structure: plastic, figurative, communicative, as summarized in Fig.1.

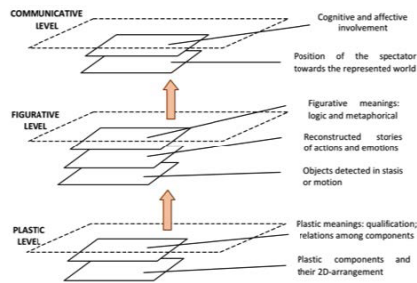


Figure 1: The conceptual structure of the meta-model.

02.01 The plastic level

Plastic components include the primitive visual cues of the model: points, lines, surfaces, textures, color. Plastic Qualities pertain to the shapes, and describe their relations with the other shapes and the surrounding space: salience, spatial layout, perspective distortions, equilibrium and dynamics, region segmentation.

02.02 The figurative level

The analysis follows four directions. First, the Conceptual Components in the painting are categorized into classificatory, descriptive and symbolic functions. Second, the Movement/change Impressions are detected with the aid of visual vectors. Third, the Narrative Components allow the reconstruction of events of the story expressed by the artwork, and described along with the emotions aroused. Finally, the analysis focuses on Discursive Qualities including cause/effect links; rhetorical - e.g., metaphorical, metonymic relations [9].

02.03 The communicative level

The communicative level is about the relationships between the spectator and the represented world. Two Subject Types (ST) should be distinguished: the 'spectator' is the real subject watching the artwork, while the 'observer' is the one conceived by the painter and implied by his/her framing and perspective choices. In addition, all the subject types, along with positions and direction of gaze - establish a system of viewer-viewed relationships. Finally, more profound Relational System (RS) issues involve the engagement of the spectator: cognitive understanding refers to the transmission of goals

from and to the subjects; involvement addresses the empathic participation of the spectator to the scene.

03. The application

03.01 The roles of Augmented Reality

The conceptual grid outlined in the previous section is adopted to provide an interpretation of an artwork based on contributions by the Scholars. An app has been designed to explore the applicability of the model.

03.01.01 Approaching the artwork

In the preliminary phase, the user moves towards the painting; the mobile system acts as a virtual window to track the artwork. The current frame is registered (matched) with an image stored into the device memory; the latter and the associated resources are retrieved. Therefore, the registration activates the AR experience: after matching, the user watches the overlaid information on the device's screen while directly inspecting the artwork.

03.01.02 Interpretation and AR

The scheme in Fig. 1 suggests the interpretation as a sequence of level analyses: general description; plastic; figurative and communicative. The user is charged with selecting an analysis, or switching to another one.

Each analysis is a playlist of audio clips synchronized with images, which in turn are registered with graphic overlays. The audio modality plays the main role in the app for several reasons. The interpretations are transmitted by a narrating voice that simulates an expert guide: the latter may be perceived as a helper, a 'mentor', to overcome the difficulties of engaging with an artwork. On the other hand, whenever the user - a student, perhaps - faces a reproduction, the voice plays its role in supporting the teacher's coaching work. Last but not least, the audio feedback is essential for users with visual impairments.

03.01.03 AR and synchronism

Synchronizing audio and video AR solutions has been designed and partially implemented. Images and graphical overlays have been synchronized as well. Graphic objects - arrows, segments, lines, ellipses, ... - are organized into layers and superimposed to the artwork image. They act as visual markups, or

semantic cues, to focus the user's attention onto the relevant details, thereby lightening the cognitive overload, enabling seamless learning and fostering interest for the artwork.

03.02 A data-flow scheme

The logical flow of information is reported in Figure 2. The main steps are: Input; Tracking; Menu; Interpretation and its realization by the audio playlist, synchronized with video and graphic resources.

The application has been realized on: i) A smartphone ASUS Zenfone 2 with OS Android 6.0, RAM 2GB; ii) An ASUS Zenfone 3, OS Android 8.0, RAM 4 GB, both with a 5.5" display; iii) A tablet Samsung Galaxy Tab S2, OS Android 7.0. To develop the app we adopted the software platform Unity3D v.2018.1.0f2, a trademark of Unity Technologies [14]. The platform contains MAXST AR SDK v.3.5 [10], with libraries for tracking and AR applications.

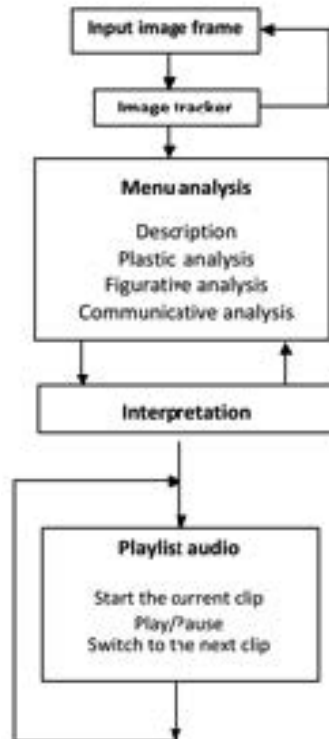


Figure 2: Dataflow scheme of the application.

04. A case study: Boy Bitten by a Lizard

Our approach was tested using artworks by Michelangelo Merisi, known as Caravaggio. As a case study we will report a few steps of an interpretation according to the model in Section 2. We refer to a classroom scenario: a reproduction of the painting has been retrieved from the web onto a PC screen.

04.01 General description

A few clips introduce the artwork to the user.

[Clip 1] Boy Bitten by a Lizard, painting dated between 1593 and 1596, currently exhibited at the Longhi Foundation in Florence, Italy.

[Clip 2] An almost identical version, authored by Caravaggio himself, is at the National Gallery, London, UK.

[Clip 3] The size is 65 x 52 centimeters; the technique is oil on canvas.

04.02 Plastic analysis

It is intended to give a general orientation to the user, with emphasis to global geometric, photometric, attentional, dynamic features.



[Clip 5] The light springs from the upper left corner and drives the attention onto the illuminated elements. Shapes and figures appear as being designed by the light to be brought to the spectator's attention. The plastic role of light is a peculiarity of Caravaggio



[Clip 7] The white color dominates, used for the boy's shirt and the rose on his hair. His skin is rendered with a paler tone. A profound instability pervades the scene, due to the sudden and disordered movement of the subject.



[Clip 9] The light outlines even the finest details. The ellipsoidal shape on the bottom right shows the reflected aperture from which the light springs off. It also shines on the bottom uncovering the little coloured spheres.



[Clip 10] One distinguishes the preliminary drawing of the brown-green color, left visible along the whitening profiles; onto a number of spots on the background.

04.03 Figurative analysis

The analysis involves the visual correspondence of forms with actions, concepts, events.



[Clip 1] The main theme of the painting is 'Vanity'. Many objects bring symbolic meanings. The rich and beautiful gifts of Nature might be dangerous. The lizard's bite indicates the deceptiveness of the worldly goods, and the risk to be bound to them.



[Clip 3] The main movement is the instinctive reaction of the boy to the bite. It is rendered by the unbalanced shift of his arms and shoulders. Transverse line segments can be identified by the positions of his right arm and left hand.



[Clip 4] The nervous tension of his left hand; the vertical signs of his wrinkles; a tear caught on the corner of his right eye, express the psychological reaction of astonishment, pain and horror.



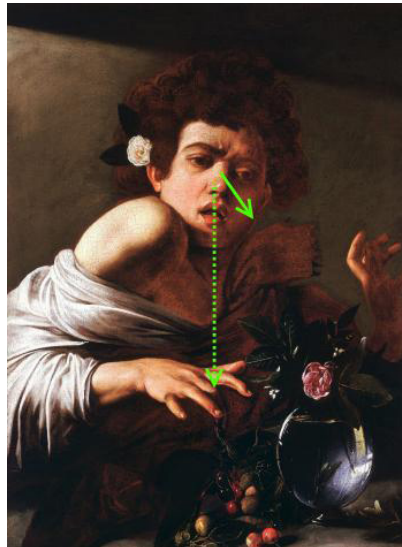
[Clip 8] A somewhat different reading considers the pleasures and pains of love as the leading theme. It is supported by the effeminate model, as the rose in the hair seems to suggest.

4.4 Communicative analysis

Different kinds of visual dialogue are analyzed among the characters, spectators and observers.



[Clip 2] The boy's position is in front of the spectator. It looks so close that a part of the figure appears to have been cut.



[Clip 3] The boy's gaze is not towards the spectator nor the lizard. He seems he was previously looking at someone or somebody else standing in the room.

05. Conclusions

The findings that we have reported previously are the results of a research project addressing the interpretation of paintings based on a conceptual model of 2D images. Our attention is focused on the visitors of a museum, and the students of a class of Art education.

We have designed, realized and tested an application for mobile systems, to support the interpretation within different scenarios, with the aid of augmented reality solutions.

The meta-model approaches the analysis according to semiotic principles. Although no model can address all the issues - potentially unlimited - raised by an artwork, nevertheless we have made an attempt to provide a grid of descriptors for a consistent analysis and description. The model is based on three levels: plastic, figurative, communicative. The model can be readily modified and tailored to the purposes of an Insti-

tution; an exhibition; a class and so on. The descriptors are shaped into modular schemes, well-fitted to archive knowledge and enable the design of multimedia objects.

Our research work relies on the expert's knowledge – either elicited from scholars, or gathered from written texts and media resources, and a major role is assigned to scholars, teachers, curators, to conceive an application that fosters the engagement of people with the artworks.

The design of the app is inspired by the observations we gathered from the literature review. Tracking the artwork allows retrieval of the internal model information, which is presented as a sequence of audio clips, synchronized with static images and with superimposed graphic layers. The experience of engaging with an artwork is given a seamless approach. The external and internal objects are aligned within the same physical space, and kept in visual connection one with the other.

The voice-over bringing the descriptions; the images; the visual see-through layers, are all registered into a unique information flow of the interpretation experiences. The layers themselves bring into the foreground relevant details by means of graphical markups, in a way that reduces the cognitive load and helps the user maintain focus on them.

The app is at an early stage of development, and it has not mature enough to be proposed for public use. Further efforts should be undertaken in order to better assess and overcome various technical limitations. Further limitations derive from the proprietary software technology [10], whereas the rest of our software project adopts the open ones.

As far as the user tests are concerned, extensive usability and accessibility research should be undertaken. Regarding accessibility, systematic efforts should ensure the unhindered use by deaf persons, for example providing supplementary written texts to support the audio ones. On the usability side two main issues should be addressed, namely: i) Quantitatively comparing the user interaction with the app, and a traditional book guide; and ii) How much the art experience with the mobile screen is felt fatiguing, on the physical, perceptual and cognitive sides, as the observed [1], [13]. Our research work is still going on, according to the guidelines outlined above, and the results will help us shed new light and give a new perspective on the way artworks are interpreted with the use of digital technologies.

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04. [The Elements]



04.01 [The App]

The project's first stage involves an initial archive, created with the participation of schools and trans-generational collaboration. The collected material is uploaded on a digital application open for the public. The users can search for stories and events using filters; can add stories following a similar procedure; can add comments to stories that already exist; and can suggest links among stories. This archive has all the features of a post-alphabetic archive, that is, a hybrid archive, which combines top-down rules and pre-existing structure with bottom-up, unrestricted and unforeseen development.

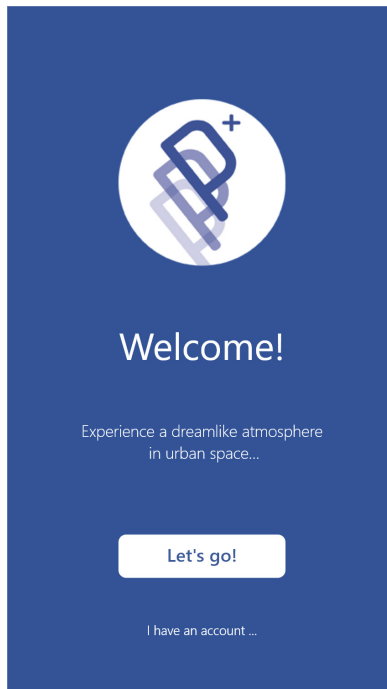


Fig.1 PALIMPSEST App launch screen

The public can actively participate and shape the content exhibited. Users will be encouraged to download the app and upload forgotten tales, tag them and illustrate them with photos of family heirlooms, 3d models of historical objects, etc. Users will be able not just to share his/her content, but also

to shape the preexisting by creating connections and therefore, add another layer of history in the city's palimpsest. The tags that the user will select for each story will be based upon the repository of tags proposed by the students for the initial stories, used as a basis when launching the APP to the public. This repository of tags proposed by the students was further processed and analyzed by the PALIMPSEST Team in order to summarize and cover as much as possible of the vast range of the stories' thematic.

One of its main objectives is to re-engage the inhabitants of the city, who are asked to collect, organize and associate, and therefore interpret information and narratives about the city's past. It is centered in the non-institutional history of the city, which is gathered through individual implication in the form of particular descriptions and subjective storytelling. The representation of the city in the MAP and APP format recreates the layered representation of the actual palimpsest, which every city has as a base, although it is often ignored and forgotten.



Fig.2 PALIMPSEST App map representation

On one hand, the APP generates interactive content, an APP designed to involve the user and invite his/her input but also respond to his/her actions, capturing attention right from the start. Everyone will be able to download the APP and immerse oneself in art installations that will be waiting in public areas. These installations will also be interactive. They will only be activated by active human agents that will engage with them, explore their content and they will respond to their presence accordingly. Users will not be able to activate the installations repeatedly because this would deconstruct the efforts to create an atmospheric dreamlike condition. Installations will interact intelligently with the public and will prioritize responses in different conditions following their programming.

However, the bottom-up, participatory character of the project and the open access in the APP may also present issues of content control, which cannot be tackled easily and may undermine the accessibility and the openness of the database. The engagement of students and schools that have worked enthusiastically

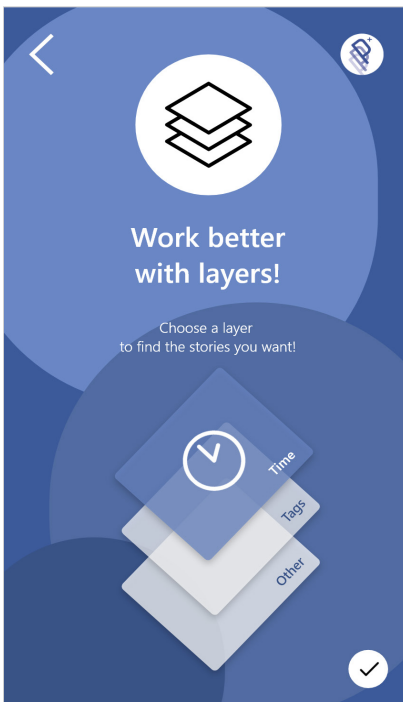


Fig.3 PALIMPSEST App layers

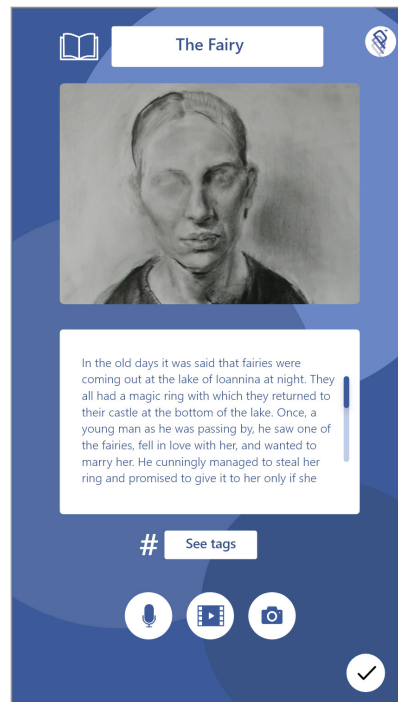


Fig.4 PALIMPSEST App "story" screen

with the PALIMPSEST team has provided the project with many local agents willing to undertake a significant role as moderators of the APP.

Moderators, whose role is to check the posted material and its relevance, are, at first, members of the PALIMPSEST team and will gradually be substituted by active groups of the community that are already organizing similar collections of digital material. PALIMPSEST expects to create a community of involved moderators through the active engagement and participation of the public with the project. This community will act as guardians and trustees guaranteeing the proper functioning of the APP and its content, taking into consideration the reports and suggestions from the APP's users.

04.02 [The Booth]

“ What is it? ”



“Booth” is a digital tool, connected to the PALIMPSEST app, which allows the automatic production of video related to stories from the past recorded by the audience itself. Through a series of questions and answers, users have the opportunity to see their oral stories visualized and converted into short video animation, gaining new life through artistic interpretation and digital media.

The PALIMPSEST Team designed and categorized an extensive library of pictorial material, which is in a constant process of enrichment and renewal, and which feeds Booth. Then the program, having as data the files of the iconographic material and based on general parameters that have been designed by the project team, composes and produces in real time video animation of the users’ narratives. Users can constantly generate new animations for their stories, however the way this is done is an internal logic of the program, thus making Booth itself a

tool and co-creator of the final result.

There are basically three levels of creation. At the first level is the original creator of Booth, who defines the data that will be used by the program, in this case the database of pictorial material, and the general parameters and conditions in which the program will operate. In the second level the user who through the questions and the narration enters specific values in the parameters in order for Booth to produce the video animations. And at the third level, the program itself, which on the basis of what has been assigned to it produces through its own internal operation a multitude of individual works, with the result that there is never exact reproduction and duplication of two works, but non-standard seriality, variability and visual similarity.

The Booth has all the characteristics of a hybrid tool, in which there are some rules and a structure that is organized in advance and from above but at the same time there is a bottom-up development without significant limitations and without predicted evolution into a development that is endless .

“ How does it work? ”

In order to produce the final video animation, the user-narrator of Palimpsest Booth follows a process of multiple-choice questions, which are used by the program to create an optimal setting that will accompany the recording of the story. The user's options are the required specific values in the variables and general parameters set by the PALIMPSEST Team during the design of Booth in order to produce the individual visualization of the respective narrative. The structure of the questions is based on the 5w technique (what, who, where, when, which).

Welcome to The BOOTH!

Tell us a story!

Let's begin!

Fig.1 PALIMPSEST Booth home screen

What: The user, after logging in to Booth, is asked to answer the first question regarding the type of story. Possible answers are Romantic, Comic, Tragic and Historic.

What?

Please select the main story genre:

Romantic
Comedy
Tragic
Historic

Proceed >

Who: Next, the user selects the main characters who took part in the story, with possible answers of 1, 2 or Many. If the character is 1, he/she chooses the gender and age. If the characters are 2, he/she chooses for both their genders and their ages. Finally, if there are many, no further options are required.

Who?

How many characters are present in your story?

1
 2
 Many

Proceed >

Where: The user selects the space in which the story to be told takes place, with possible answers Indoors or Outdoors. If he/she chooses Indoors, then he/she chooses whether it is a Domestic, Commercial or Public space. For Domestic, is given the opportunity to choose further whether it is a Living room, Bedroom or Kitchen. In case he/she chooses Outdoors then the possible answers are Urban, Rural and Natural. If Natural is chosen then he/she is given the opportunity to choose between Sea, River, Lake, Mountains, Plain and Forest.

Where?

Indoors
Outdoors

Urban
Rural
Natural

Sea
River
Lake
Mountains
Plain
Forest

Proceed >

When: The user selects the time period and the season in which the story takes place. For the time period, it chooses whether it is a story Pre-WW II, Post-WW II or the 21st century. For the season, he/she must choose one of the 4 seasons of the year (Spring, Summer, Autumn or Winter).

When?

Time Period

Pre-WW II Post-WW II 21st century

Season

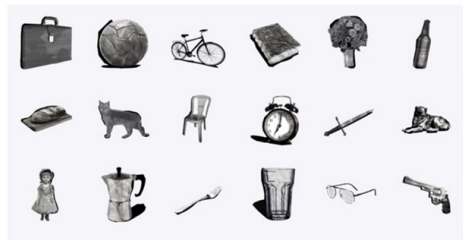
Spring Summer Autumn Winter

Proceed >

Which: In the last question, the user is asked to select two items from the Booth library, which played a decisive role in the story.

Which?

Select any objects related to your story! (up to 2 items)



Proceed >

Recording: Finally, the process is completed with the oral recording of the story of the user, who has at his/her disposal for the recording up to 1 minute.

Your story is ready!

We just need one last thing... your 1 minute narration!

 01:00

Finish

Link: Upon completion of the recording, the user is redirected to the link of the new story, where he/she can see the final result, download it on mobile phone or computer, download it to the PALIMPSEST app, or share it on social media.

Story #48

Press the play button to see your generated story.



“ Tell us a story ”

The existence of appropriate digital tools can have a very beneficial effect on the preservation and protection of the intangible cultural heritage. Booth’s case explores how engagement and co-creation can be supported when the audience is facilitated to produce content that works for both themselves and others.

Booth’s differentiation from the simple recording of oral narration lies in the fact that it contains it but at the same time expands it as it transforms it into a co-production that expresses a whole and not a unique, individual and exclusive narrative. Just as in the past, the tradition was based on the delivery of cultural goods in successive phases and the processes of appropriation and transformation by their temporary owners. Booth attempts to record the stories on audiovisual material created at the same time by the narrator, the team that edited the pictorial and audio material, the team that, in advance, matched it to the answers given by the narrator, the developer and the program itself.



Fig.2 Screenshot of a B00TH generated video

04.03 [The Installations]



During the last stage, PALIMPSEST focused on the creation of art installations in the urban space of the city. At first, the artists selected stories from the archive and then they reinserted them as art installations in the city's public space appending them to their original location. The art installations don't significantly affect the physical condition of the city at its present condition. These settings, activated by visitors, are interactive and multi-sensory, with no visible footprint in the urban area.

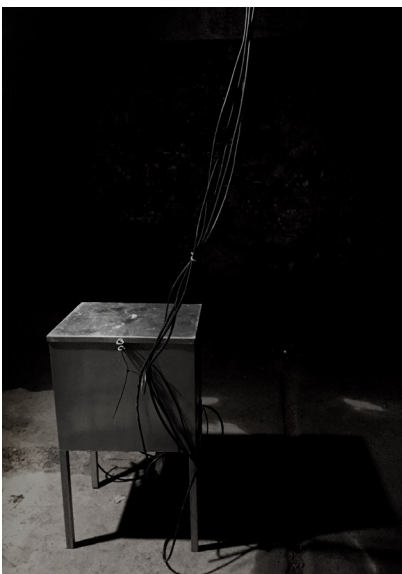
[Alexandros Psychoulis]



About the installation

“The work “Vavo” is an invisible work for the viewer. The equipment hidden inside the walls of the Castle, in the narrow alley where the Jewish Synagogue is located, records the conversations of the unsuspecting passers-by and repeats them with a delay of a few seconds a little further down. In other words, the passer-by meets as he proceeds the words he has uttered a few seconds before. He hears himself again. This work creates an unfamiliar condition. Nothing warns you of its existence with the result that the experience is perceived as something irrational that conflicts with the logical flow of things. The words of the street that were destined to be lost forever after their utterance are given a second chance. They are repeated

outside the mouth in which they were born. This is not a natural phenomenon, it is not the echo. The time delay is such that it removes any kind of naturalness. My words, artificially, are waiting for me at the end of the road.”



[Athina Pavlou-Benazi]



About the installation

“I constructed an installation in the arcade next to the central gate of Ioannina, using video projections and absorbing slides with a filter. I created figures of people from the past who are lost in a path, evoked by time.

The friction with the history of Ioannina and the expulsion of the Jewish people of Ioannina created the need for me to depict them as a moving monument. The castle was predominantly an area where many Jewish citizens of Giannina lived, as it was an area with different mentalities, but until 1944 they all coexisted together.

Through this work I want to show the course of these people in today's reality. History may be the past of a city but it never ceases to move into the present and shape its culture and beliefs."



[Christos Vagiatas]



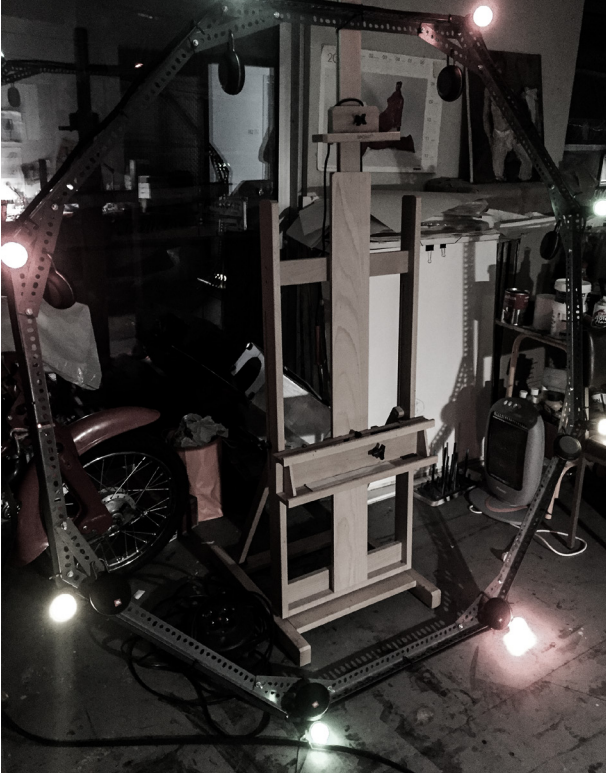
About the installation

"In 1687, a great frost fell in Ioannina. It lasted for one month, starting in the 28th of January, and kept the lake frozen. Then, because of the Carnival, the people of Ioannina, Christians, Muslims and Jews all went to the Lake. They were believing that this was a miracle of nature so they enjoyed their time drinking wine, playing to music, while at the same time the vendors had set up a bazaar on the icy lake. In order not to slip, everyone put large pieces of wood under their shoes.

My main idea was inspired by the story described above, aiming to highlight the coexistence, the settlement and the passage of the main communities that were created in the city of Ioannina.

In this specific work I try to capture, with as little media as possible, the spatial and temporal coexistence of the three cultures and regions (Christians, Jews, Muslims) that were settled in the city of Ioannina at the same time while they were all using the Lake of Ioannina, named Pamvotis, as a common space.

I created a sonic installation in the area around the mausoleum in Aslan Mosque. This sonic installation is consisted of songs who represent these three cultures and were traditionally used in their celebration events.”



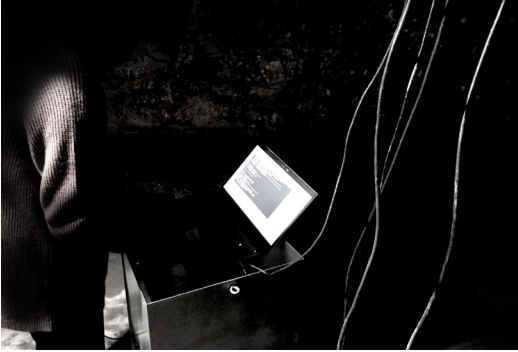
[Anastasis Karras
& Dimitris Batsis]



About the installation

“The main idea of the work focuses on the interpretation of an animating force, a journey to history through the propagation of sound. The piece manifests through the use of whispers. The rich sound of whispered phrases from various persons, which constantly appears and disappears, intends to create a field of perplexing energy, a return to a spot that awaits to be expe-

rienced, a world of memory and recollection. The interior of the space in the castle where the sound plays from on repeat, symbolizes an enigmatic setting: the little space in the castle becomes a metaphoric dimension of a mysterious, possibly dangerous activity.”



[Iro Laskari]



About the installation

“For the Palimpsest project I have created a light installation which attempts to provoke to the viewer an instant feeling of mystic and romantic “memory”.

The narrative idea is based on a story on the marine week, which used to take place at the Lake each summer during the 70s. The week was devoted to water sports contests, such as rowing and water skiing. This week ended with a mysterious nocturne parade, whose protagonists were colorful paper lanterns, hanged over traditional wooden boats. After a tour at the Lake, the Lantern parade ended at the island.

My installation is an attempt to recreate in a smaller scale, the mystic impression of colorful paper lanterns by the Lake. The primary materials are paper of different colors and light. In order to make them manageable and durable to various climate

conditions, I boxed them into transparent polymer pipes. The installation consists of 40 pipes of 40cm each. When a passenger passes by, the “Lanterns” will automatically turn on for 2 min, and then they will turn off again. This will cause the viewer a surprise and will create a short-term intimate space by the Lake of Ioannina, especially during the night as well as foggy days.

I would like to thank Mr Nick Messimeris from Zogeria Systems for his help at the implementation of this electrical system.”



[Maria Varela]



About the installation

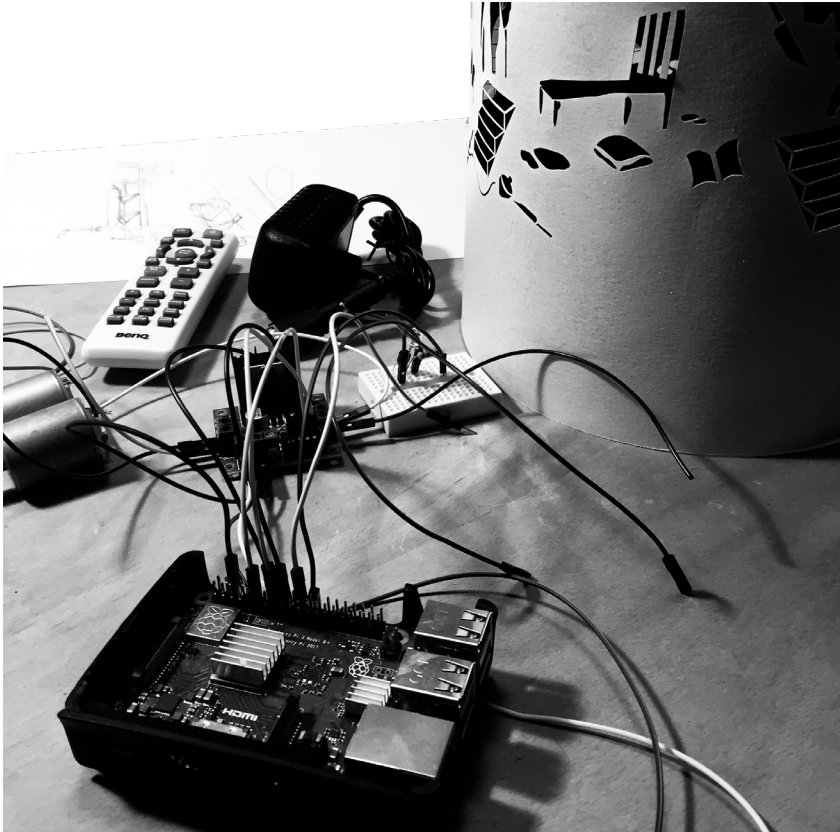
“The work is an interactive projection creating personalized beasts. Greek traditional motifs depicting beasts are collected in a database. Each time the installation is activated in the presence of the viewer, a new unique beast is created which exists as a projection only for the time the viewer is standing in front of it. By the time the viewer has gone, the projection switches off and the ephemeral presence of the beast is completed.”



In traditional art the use of beasts becomes an artistic euphemism. People used to depict with respect and adoration whatever caused them fear. Imaginary beings are associated with prejudice, superstition and witchcraft. The bearer of the pattern manages to borrow its magical power. Beasts turn from threats into protectors of guardian importance. This becomes a kind of transition from magical practice to a more rationalized version of protection provided in a symbolic way.”



[Marilena Georgantzi]

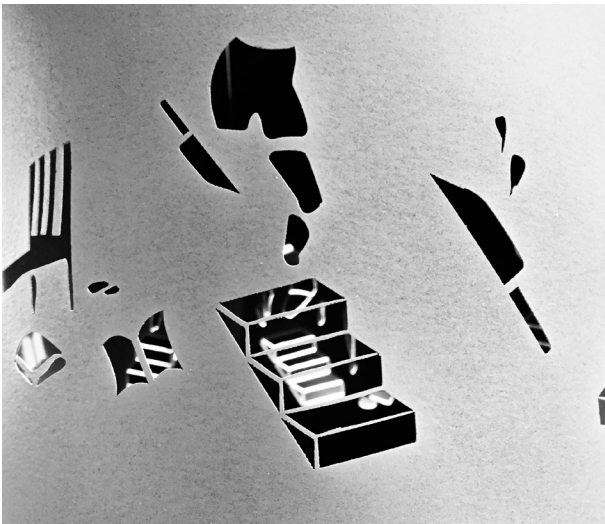


About the installation

“HAUNT ME explores nostalgia for a never-existing past, subjective narratives and romanticised innocence.

An octagonal kiosk situated next to the Lake of Ioannina city is converted into a black and white kids spinning lamp through rotating projections activated by the movement of passers-by. Juxtaposing the sedation and the warm feeling of revisiting a child’s bedroom within the (often hostile) public space with the content of the projections, questions on dominant narrations of history, uncanniness and trauma are raised. The animated kiosk immerses you in a sweet nightmare resurfacing fears and desires of a lost home.

This work is inspired by a testimony, chosen from a wider collection of oral narrations of the citizens of Ioannina, of life during the civil war through the eyes of a child.”



[Panagiotis Vorrias]



About the installation

“As the passer-by approaches the site of the installation, a video projection appears in front of him, on the inner wall of an uncovered space. It is a human figure which, holding a large

reflective glass, sends bright solar signals to the viewer. He seeks a few moments of attention, he tries to become a small part of the daily life of the passer-by, as he, as a receiver, is confronted with the solar signals in the paradox of the night. A note on the regulatory speed at which public space moves, a message of urgent need for meaningful contact and re-defining the terms of communication.”



[Spiros Papadopoulos]

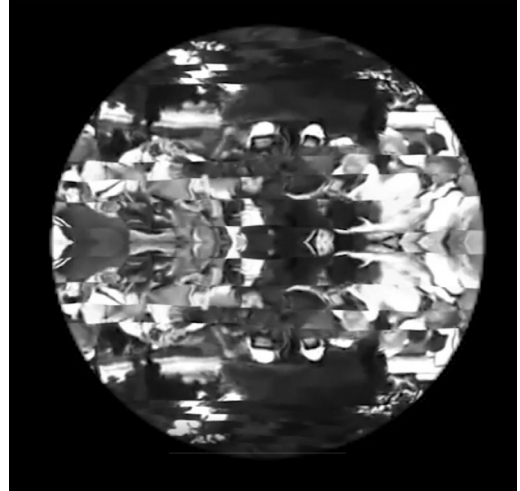
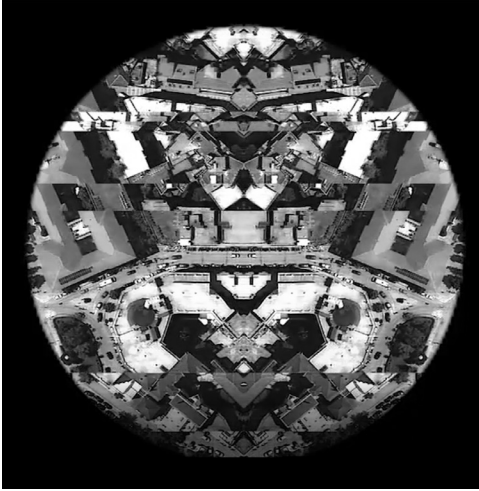


About the installation

“This work articulates into twenty-one audiovisual narratives that investigate the spatial properties of the public protests in the city of Ioannina during the last 12 years, namely the period of the multiple crises in Greece and globally. Initially, a corpus of sound abstracts has been compiled, including human, body, and verbal sounds, bangs, beats, and rhythms, drawn from recordings of urban mass movements. Then, the sound snapshots were combined with distinct representations of the towns’ cultural landscape to form a new condition of unexpected happenings that stimulate and feed into our memory.”

A new experiential urban landscape is produced by activating and feeding the collective memory, thus highlighting the vivid and dialectic relationship between the social activism and the

urban 'body' both in its diachronic and synchronic dimensions. The "Whispers 21" compose and recompose a constellation of citizens' social actions, conflicts, and claims of rights for the city and through the city of Ioannina."



[Thodoris Zafeiropoulos]



About the installation

“The proposed project is based on the idea of constructing a kind of allegorical fountain that will offer spectacle, coolness and will recall memories and audiovisual enjoyment, as through the dynamic launch the spectacular water droplets will create impressive formations on the surface of the water. A man-made natural phenomenon that will provide the viewer with



the feeling of a momentary rise, and through the refraction of light the image of the rainbow. The work activates and shapes with very simple industrial means a sudden encounter with the elements of nature and offers a spectacular experience for the spectator and the passerby of the Lake's Pamvotida coastal zone in the city of Ioannina."



[Yannis Kokkalis]

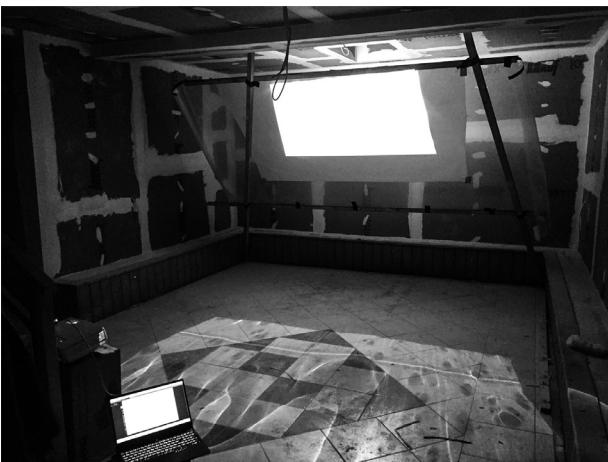


About the installation

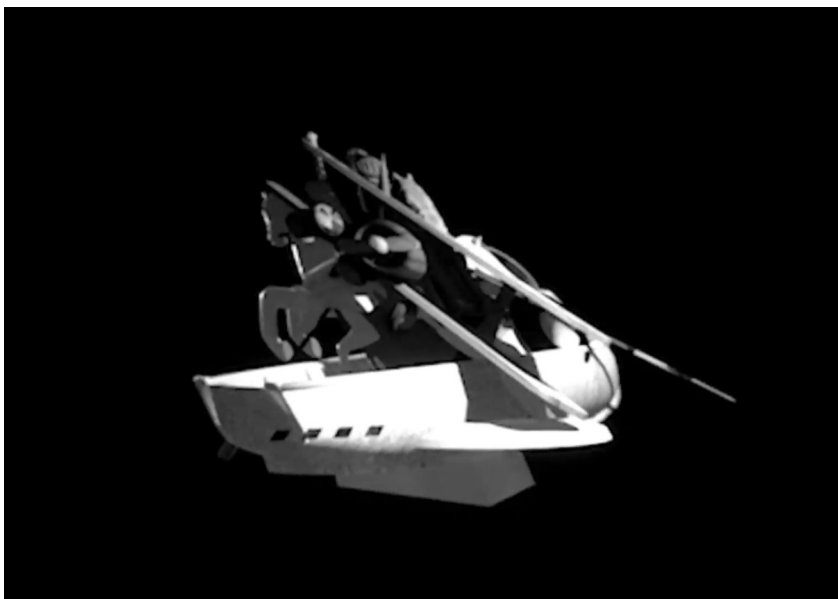
“Stories and myths about fairies, fishermen and drowned women. The image of Ophelia and the myth that accompanies it. Projection in the back of a window. A woman moves slowly below the surface, dancing, swimming, and enchanting at the same time. Through a glass skylight, we see a second video, on the basement floor, of a wooden boat sinking slowly. The boat is old and in poor condition, it looks like its sinking to be welcome. The second video begins when the viewer approaches the window.

At the ground floor of an empty store and through the showcase, we see a projection on a semi-translucent surface. A woman is slowly moving in the water, simultaneously dancing, swimming, enchanting. Moving images of “Ophelia” in nest with waves of the Lake. The projection attracts the viewer who, by approaching, activates a second projection at the basement.

Through a glass skylight, located in the shop and at the same level with the pavement, we see the projection, on the floor of the basement, of a half-sunken wooden boat slowly submerging. The boat is old, in poor condition, it feels like sinking is welcomed. The video is activated when a user of the application approaches the shop window. It is in correlation with the projection on the ground floor of the same store.”

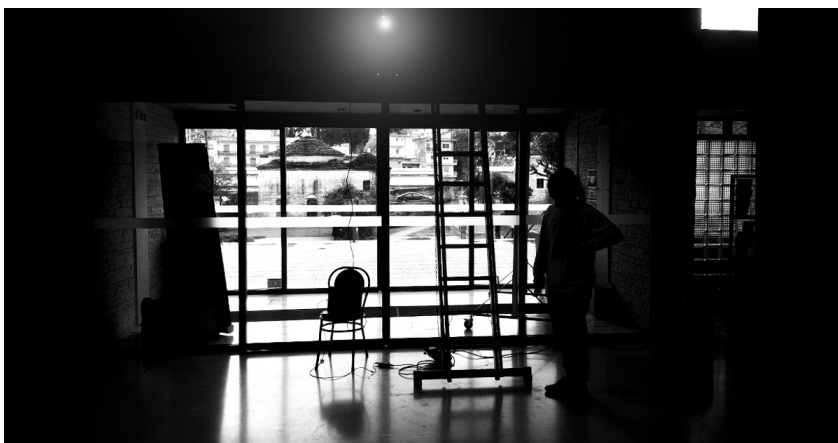


Stratos Serafeimidis



About the installation

“The work draws inspiration from all refugee stories from the city of Ioannina. From the moment the war sirens sounded until it’s end. The work consists of wooden toys composing a monument. The wooden toys function as objects of memory of an alternative past, for those who were forced to leave them behind.”





[Afterword]

PALIMPSEST has been a long and fructiferous project, with many distinct but interconnected stages and with an incredible participation of public and experts. It seems that in itself it has created a palimpsest of processes, agents and relations. The original objective was to create an app-triggered, open-air, interactive, ethereal, urban museum where stories of the past would be reinserted into the city, safeguarding intangible cultural heritage and attracting tourism. PALIMPSEST has gone far beyond.

Concluding on what PALIMPSEST has accomplished presents a difficulty, because post-production, as a creative approach, means that end products are provisional; resulting processes are open and continuous, and all momentary conclusions are punctual and ephemeral. PALIMPSEST is in itself a consecutive process of layers that have been and layers that are to come.

Still, as this palimpsest is, for now, left aside, maybe for a later moment or maybe for others to find it and retake it, certain points should be highlighted:

- Post-production and cocreation are not meant to be exclusive but rather inclusive in all possible ways; publics of different ages can be involved; experts and general public can be mutually fed with inputs and outputs; different forms of expression can collaborate: narratives, theatre, animation, photography, video, installations, are some of the forms that were curated during the project.
- Digital technologies offer a possibility to question the physical boundaries and the limitations of the past and augment the experience of contemporary urban public space without affecting it. Nevertheless, digital technologies on their own they cannot make the experience meaningful. To use digital media for something more than pretentious spectacle creation, it is imperative to work with a societal approach and rely on the artistic interpretation as a way to recover and reconnect lost threads of our shared heritage in the city.
- Content creation cannot be a unique privilege of experts, nevertheless, artists can be involved in democratizing the ability of all to contribute their insights in an evocative

and significant way. The PALIMPSEST's booth is a place where everyone can confide a story and transcribe it, through algorithmic interpretation of images created by artists, in an audiovisual narration that can be shared with others and form part of the collective memory.

- Many of the typologies of the past need to be rethought and renovated; the archive and the museum are in the PALIMPSEST case two typologies that are transformed. The App and the Booth allow the archive to become open, accessible, participatory and communal; the open-air interactive Museum rethinks modern typologies, recontextualizes past moments in their original places but in the present context of the city, and reinvigorates the city's public space through the situationist insertion of memories in the form of art installations in the urban public space.
- Curatorship and authorship are also reconsidered; previous categorizations and partitions result obsolete. The engagement of the public, with the assistance of experts, in order to inscribe collective memory on the city's palimpsest, leads to a hybrid, mixed approach of authorship and curatorship. Partaking and sharing is a process of activating, configuring and assuming together the public space as ours; space and time cannot be dissected in the public space; it is precisely the space-time continuum of the public spaces that can be inhabited by our collective memory and where our future prospects can be projected. It is there, at the palimpsest of the urban public space where we encounter those that have been and those that will come; there where the city is composed.

PALIMPSEST Project [the Book]

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