

 			
2015-1-ES01-KA203-015734			
Title:	Hackaton E6.1	Author:	TRANSIT
Version:	0.1	Date:	4th June 2016

# E6.1

## Hackathon 1 Report

Version: 0.1

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Dissemination status: CO

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### 1. Overview

A Hackathon is an event where designers, creators, programmers and, in this case, also artists, gather to develop and show projects with a specific purpose. The Hackathon held past June 4, was the first of three events that cover the issues under study: accessibility to the performing arts for the blind and/or the deaf, in order to have an artistic and experimental view of accessibility and the idea of include more layers than already known in this field.

First Hackathon was conceived as the final meeting of a wider and more complex process, with the aim to add different professional profiles involved in the field. For this first year a first comprehensive approach to the problem was advanced, with the help of other

partners, which in this case were MATICS (*Sociedad de Estudios Performáticos*) and ESDI (*Escuela Superior de Diseño*). The first provided a network of performance artists and a technology park, and the second a group of multidisciplinary students and expert design teachers.

## **2. Research process:**

A two-month *Open Laboratory* was organized with the participation of students and teachers from ESDI, and artists from MATICS. During the two months prior to the *open laboratory*, representatives of the Catalanian blind and deaf communities were approached, but no real and direct participation from any of the groups contacted was achieved. However, the laboratory group, which had already been formed, organically developed a procedure for approaching the problem of access to the performing arts, not attempting to empathize with the emotions of disabled groups, but rather proposing potential solutions for improving access to the performing arts for any kind of person.

## **3. Methodology**

From the start, an ethnographic approach to the problem was proposed, as the practice group was extremely heterogeneous, and was interesting enough to make an attempt to understand what relationships could be established between the different worldviews. Finding the meeting points along coincident lines would permit us to establish more effective methods of analysis, and potential positive results in relationships between performing artists, producers and the disabled. At the same time, artistic practices were proposed as a complementary method to sociological research, as this would allow accessibility to be conceived, not only as a way to bring the artwork closer, but also as a way of including art within the debate itself. With this idea in mind, a theatre company was invited to lead participative activities for everyone during the various sessions of the laboratory, to help visualize the problem from artistic standpoints.

Finally, the sociological analysis was complemented by references to philosophers who, in the opinion of the activity's coordinator, best dealt with the problems of accessibility, with special attention to those lines pursued by thinkers who emerged from the ferment of May 68 in France.

## **4. Activities**

### **4.1 Open Laboratory (Senses Lab).**

This activity began to take shape in late 2015 thanks to the MediaEstruch's previously established relationship with the School of Design (ESDI). The possibility was raised of creating an *open laboratory*, a workshop for students in their final grade-year at the School, with profiles from different design disciplines. The Accessible Culture and Training European Project, served as initial motive from which to construct a whole design process applied to the accessibility to live arts. It was decided to organize a seven sessions, first session starting on March 29th, 2016, and ending with the Hackathon scheduled for June 4th of that year.

#### **4.1.1 Participants**

The laboratory had the participation of members of three centers: students, teachers and industrial professionals.

MediaEstruch: The research, development and innovation department of Estruch:  
An art center for performative arts.

Matics: Performative society studies. It's a community of artists, designers, creators, and all kind of people involved in performative arts in a professional area.

ESDI: School design studies.

#### **4.1.2 Description**

The *open laboratory* for senses, combined two different investigative approaches; on the one hand, using the academic method of defining the problem through a detailed knowledge of the patient or client, then attempting to resolve the problem by a process of multidisciplinary co-creation; on the other hand, using the artistic method, appealing to the senses to tune the multidisciplinary team in search of a more creative and empathic context. Both methodologies were used simultaneously, involving participants of all profiles, and with experience in both investigative approaches.

Without going into more detail about the process, nevertheless it is perhaps pertinent to explain that the laboratory began with an activity in which participants were asked to analyze the different languages present in an opera. First impressions were mixed, mismatched, about what the different languages were expressing; for example, the visual vs. the auditory.

Despite analyzing the same piece of an opera, there seemed to be a disconnection regarding the interpretation of emotions according to which sense was being used (factors which may be considered as intrinsic to the channel in use). Numerous other comments appeared, regarding other initial barriers to accessibility; mood also influences the artistic experience (intrinsic individual factors), the particular decoding system of each artistic format (factors intrinsic to the art), a lack of understanding of language and expression (factors of language, of register), and others. Thus, there seem to be a number of factors which stand in the way of a general homogeneous interpretation of the artistic act, as are those concerning the social, cultural, contextual, intrinsic to the artistic event itself, including the way in which the scene/stage/theatre is perceived, which eventually also influences the sensations perceived in front of the same artistic event. These dimensions perhaps represent a few among many others which passed undetected by the group, dimensions which in turn may contain a number of factors difficult to detect in their full complexity (for example generational, environmental, genetic, pathological differences, among others). Although this is no reason to invalidate this field of study, still it renders an initial analysis, or any relatively profound analysis with respect to this concept, inadvisable at the present time. However, using an ethnographic analysis of the group assumes making its weakness into a strength: We are attempting to understand the relational forms and mental contexts of a small group, without paying excessive attention to complex social structures, focusing upon the evolution of the group itself, seeking to obtain results which may prove subject to extrapolation.

The group discourse regarding the performing arts primarily highlighted their heterogeneity, making palpable the differences between the various modes of theatrical expression (opera, theatre, dance, live music, performance, and so on), which emphasizes, according to the expression, the occasional supremacy of certain expressive languages over others within the same work; for example, the greater importance of the singer's voice over her physical expression in a work of opera.

It was equally clear from the outset that the most important thing about the work of art is not its meaning, nor is it the story which it tells, but whether or not it is emotionally engaging, which constitutes its distinguishing feature as a source of knowledge. The

artistic act here is understood as a process where a work of art is a communicative "apparatus", produced by a person or a collective, with the intention of transmitting something to another person, or to other persons. Although the artist or collective may have intended to convey an aesthetic sense, for our group it was not essential that this should coincide with what the audience receives, so that the production of sensations which generate strong emotional content takes center stage in the process (and indeed contains its primary value), whether or not these sensations were those imagined by the artist. In this sense, indifference towards the artistic event is a more important failure than whether it was liked or understood. This possible indifference to the work of art (lack of cultural needs) may perhaps be explained by the interaction of the multiple dimensions and factors of constructivist sociology previously abandoned. But pursuing the ethnological and artistic approach (with a techno-scientific component, due to the background of certain group participants) to reach the emotional core of a receiver's (the audience member's) previous personal experiences is critical to this process; the emotional memory. Art activates a mental process that results in exhilaration as the senses send data packets to the brain, which interprets the prerequisite sensation through memory. This later stage of information processing plays a far larger role in generating emotion than the gathering of sensory data itself. So it is understood for the group, that there is a memory which functions as a catalogue of emotional experiences, which the brain refers to interpret and reinterpret a series of data which arrive from the senses. Here the brain interprets what to feel and what it means, and if this catalogue contains no artistic archives/memories, there is neither interpretation nor emotion.

The postmodernist philosophical position seems to be aligned with this conception of the artistic event. So Deleuze talks about the difference between art and other forms of knowledge, and marks as a differential fact the referral to sensations in the first instance, ahead of "reasoning" which arrives moments later, but which allows a fraction of true connection of the physical, the spiritual and the material, suggestive of a gap in the frameworks of the constituted realities upon which we construct our own realities. It is a sensation-emotion, an unmediated emotion that therefore escapes the mental structures already created, thus opening up the possibility of producing novelties or changes in these structures that define our particular world. But, on the contrary, these positions seem to contradict the group's ideas with respect to memory, since memory is based on prior facts already experienced, past events (almost dream experiences, but, at the end of the day, lived experiences). In this case, to remember is to reinterpret sensations already sifted through social constructions. Does this mean that the group can only feel the works of art that they have experienced at an early stage of life? Does this mean that art lives by memories? It may be understood that for the group, an art exists which excites an emotional response through reference to a memory (a song from childhood which one has not heard for a long time, the stage adaptation of a novel read previously, the Oedipus myth in its various Hollywood adaptations) and another art which stirs the individual in the present, without any reference, which surprises and leaves a deep impression, and which involves an effort in reading it. This other art, uncomfortable and revolutionary, may suggest a possible explanation for the way this memory forms, as it what it brings would enrich memory. This might also help to explain why some people find certain expressions or artistic styles inaccessible: perceiving art is not easy; it is hard work, and takes us out of our comfort zone.

Undoubtedly, past experiences (and better still if we have been guided to them by our parents) open up the way far more easily between "referenced" art and "revolutionary" art, because these experiences predispose us to make the effort in anticipation of the possible reward. That is to say, emotional memory allows the person to achieve greater receptivity with respect to art, perhaps even helping in forming a proper evaluation, but even so, having no previous experience is not an obstacle preventing access, because it is a

matter of practice. It would seem, then, that access to art returns to its simplest significance; you have to stand in front of art to learn to enjoy art. With each new attempt to enjoy a closer relationship to art, and thanks to a new and expanding sensory memory, the experience works out easier and better every time. Yet this conception of art appears to be an atomization of the communicative results, which prevents the transmission of the objective message so that a spectator feels what the artist intended, as opposed to what can be done with the transmission of a concept, an idea or a story whose information refers to reason. The work of art, therefore, is untranslatable, so that, according to the nature of the group, the problem with current technologies which attempt to increase accessibility to the live arts – such as audio description, subtitling, stage visits, and so on – is that they seek a quick solution to the challenge of disability, in attempting to transfer the loss of information caused by disability to the rest of the senses. With this, a better understanding of the "story" is achieved, but sometimes producing an information overlap in the supplementary senses. This sometimes produces noise, a poor aesthetic experience, and the impossibility of escaping from personal and collective social structures. This translation, and bearing in mind the necessary subjectivity of the artistic experience, suggests, contrarily, not the translation of the work, but rather the interpretation of the sensation and emotion that the work produced in the translator of the work. The outlook worsens if we understand the particularity of works for the stage with respect to other works of art, and this mostly refers to its nature as a "live" art and as a group experience. This means a new performance in each session, differentiated by the present moment of the performers, by the present moment of the audience group, and by an endless number of factors which mark out the performative character of the whole rite, which characterize its uniqueness, and which expose the fragility of much of the pre-designed technologies for the disabled.

All of this implies to the group an unbridgeable obstacle regarding the translation between senses, since there is no art without unmediated sensations. After confirming that there was a complete lack of interest among the disabled groups in the process of co-creation, it was understood that there was another important issue regarding access to the artistic event, and that this issue affected even the process itself; there is a distrust among collectives with respect to the rest of society, and even among different collectives. It was understood by the research group that it was not possible to put ourselves in their places, and that in spite of our best efforts; we were still guilty of discriminatory behaviors. We were also skeptical of them, we researched "their problem", we invited them to participate in this game in which they, not we, were the important ones (the different ones). Addressing the challenge of disability in the arts (and presumably in other social areas) involves removing the concept of disability, from the very beginning, from the very conception of the design, and understands that just as there are people without hearing, there are people with all senses working properly who cannot be moved emotionally by art. This means that the challenge is to make stage works accessible to everyone, not just the disabled, as the construction of specific devices for the disabled marks them out as "the other" without providing any substantial improvement to the aesthetic experience. This, however, does not imply that accessibility technologies in live arts have no valid basis, but rather suggests that there should be a rethinking of initial objectives, and above all of their specificity for the "others".

#### **4.1.3 Prototypes**

Throughout the sessions the research group considered different prototypes with the following characteristics:

- It should not be exclusively for the disabled.
- It may be perceived by one or some of the senses common to everyone.

- It should not provide a translation, but transmits raw data.
- It should interact with agents involved in the live stage event (actors, audience space).
- It should contain an artistic reading.
- It should be integrated into the process of creating the work.
- It should be flexible/modular, adaptable to any artistic style.

One of our initial ideas, surely inspired by the context of the design school itself, was to work with textiles, gradually adapting the concept in accordance with those conditions set out above. The fabric allowed for a far greater flexibility than other working materials present in stage shows, and could be used in performer's clothing, within the auditorium itself, in decorative elements of the work on stage, the upholstery, curtains, pictures, and so on, allowing for maximum creative movement, and able to carry an artistic reading, both on its own and in combination. Also, the fabric may appeal to those senses that everyone possesses (with few exceptions), such as touch and smell, which for the group were the two main senses to be acted upon. But to make it truly interactive, so that it would become a dynamic, evolving material in service to art, we needed to incorporate technology; so, we are talking about Smart-fabric. The fabric should transmit tactile and olfactory choreographies, and should be capable of being stored, carried around and modified with relative ease, like rolls of fabric in haberdasheries. This roll, then, in the hands of the artist, could be used to create scenic cloths, to cover objects, to make dresses for the actors or the audience, to make shoes and carpets, ropes and upholsteries. It would therefore be used to manufacture a new dynamic fabric with the ability to wrinkle, with position-memory (and so, imbued with tactile language), and with the capability to give off different scents in accordance with creative decisions (and so, imbued with olfactory language).

The first tests were carried out with the resources available at that time, and the initial prototype of a fabric which can wrinkle and then return to its original shape under electrical commands was developed in a small piece of fabric, which had small servomotors attached, each located at one end of the fabric, controlled by a programmable Arduino which transmitted the order to stretch certain threads in the fabric, thus causing it to wrinkle. The other servomotor, to stretch towards the opposite side, returned it to its original shape. The second module researching smell worked on a fabric previously impregnated with perfume by heat evaporation. The evaporation control was achieved by adding heat to the fabric through a series of electrical wires, which were heated or cooled according to the amount of current circulating through the system, which was also controlled by an Arduino.

## **4.2 Hackathon (Hack and art Day).**

The Hackathon was held on Saturday June 4. With the conclusions and early tests from the open laboratory, it was considered to make a call upon the community of digital artists and makers, which, by its very nature, would be more receptive to our artistic-scientific way of working. In addition, this community would help discover more original technological solutions that were better attuned to the ultimate goals of the project.

### **4.2.1 Open Call**

The first part of the Hackathon consisted in an open call for artists, designers, makers, and creators in general, to work and show their gadgets, pieces, or prototypes, regarding our subject of study, with a grant for the winner.

This grant allows chosen candidates to use multimedia equipment in MediaEstruch, the maker's lab at Matics, grants a stable residence in the apartments at l'Estruch, and provides a small fee to the winner, which this year has been given to the "bioelectronic" artist Felix Vinyals:

*Fèlix Vinyals (Barcelona el 1986). Electronic engineer, (UPC), Biomedical engineer (UB) and Digital Art teacher. Member of the "OXYGEN" artists collective at Kinetica-Museum UK. Works in a form of Art Digital he names "Art Biotrònic", resulting in interactive installations mixing vital signs from the human body with electronics, with the aim of exploring the links between society, technology and human body.*

#### **4.2.2 Presentations**

The second part of the day consisted of a session with presentations of various projects related to art and accessibility, with the presentation of the ACT project and the result of the Laboratory of the Senses. This day was intended to advance the debate on accessibility and the performing arts into the public agenda.

- Presentation of the Hack And Art Day
- Introduction to the Accessible Culture and Training project.
- ESDI and Matics present an accessible prototype for the performing arts.
- Presentation Symbiotic Festival: Arts and Accessibility.
- Miguel Ayesa Presentation: Towards inclusive art.
- Sense of taste: Anna Recasens prepares recipes to trick the sense of taste.
- Diana Medina: Immersive Installation
- Julian Scordato: Audiovisual Show
- Francesco Marino: Interactive Gadgets
- Cymaspace: Selection of videos about digital art and disabilities
- Linalab: versatile artist.

During the meeting there was an exchange of experiences between artists, makers, disabled, children, neighbors, and others, all mediated in the artistic context of L'Estruch, *Fabrica de Creació de les Arts en Viu*. On the day, there were experiments with other senses not so much investigated in the laboratory, for example, taste experiences such as the project by Anna Recasens, in which visitors were served a number of foods whose tastes contradicted intuitions gathered by visual cues. Diana Medina also presented a project on taste and hearing, using an immersive space with a multichannel audio system, lights and where participants taste carbonated candy, which made a crackling sound in the mouth, evoking the same sensation in every sense. Other installations presented interactive contexts, gadgets which expanded capabilities, and other projects.

#### **5. Conclusions**

The idea of researching ways of making stage works accessible to all audiences must be reaffirmed, but not in ways specific to disabled audiences, permitting an individualized reading of the work. This particular reading suggests enabling each person to manage their own sensations in accordance with their particular backgrounds, their mood at the time, their specific or permanent conditions, their likings and phobias, and so on, without imposing an interpretation from outside.

Yet it is an inescapable fact that there are certain artistic expressions, such as dance, which can hardly evoke powerful feelings in sightless people, and this is what the research deals with; how to make any form of theatrical expression more accessible. The problem now seemed to be clearer: we intended to make use of any stage work, current or past, setting

as our objective complete accessibility to all audiences, no matter their personal characteristics. In order to achieve this, an attempt was made to create a system, method or artifact, not exclusively for disabled, which in turn would help to resolve the historical social distrust. This system, method or artifact would allow for the production of emotional content without resorting to a mediated translation of another channel of information, to access a particular experience of the artistic event. So, further clarifying the problem, this system, method or artifact must use a channel of communication which is common to every member of an audience (therefore avoiding those senses which not everyone possesses), boosting those information inputs already in use, if necessary but without translations, not limited to the audience or spectators as the stage play is a self-influencing system (in an opera musicians influence each other, influence and are influenced by singers, influence and are influenced by the audience, and all are influenced by the scenic space of the stage). It would be a system, method or interactive artifact, which in turn would promote empathy between people, groups and spaces. The system, method or interactive device, since it must transmit raw data, must be integrated into the work by conscious design (or by redesign, for works already created but reinterpreted). It would form part of the work, and would be subject to an artistic reading which is unmediated, direct and specific, but which is also complementary to the remaining expressive channels. This ideal system, method or interactive device should not entail a weakening of the artist's creative abilities, and as such must be flexible, in order to adapt fully to the most groundbreaking requirements of the most driven artists.

These first approximations helped in the beginning of a new phase in the research process, in which, once problems became clearer, more technical testing began, a process that will form the basis for the second year's work.

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