

If People were Neurons, Interaction would be their Synapsis: Outdoor Play from an Artistic Perspective

Nicola Lecca

Center for Human-Computer Interaction,
University of Salzburg, Austria
nicola.lecca@sbg.ac.at

Introduction

In this document I present a selection of past and future projects, from my portfolio, related to outdoor play. My projects are based on my role within “Some Designers”, an artist collective focusing on interactive media art. These projects were dedicated to illustrate unconventional experiences at the intersections of technology, arts, science, and philosophy; allowing the audience to play, learn, discover, and interact consciously and unconsciously with different manifestations of information through playful and multisensorial environments. The following gives a short overview of these projects and will be linked to the workshop topic, thereby aiming to illustrate my stance towards designing for outdoor play from an artistic perspective.

Project 1: Echoes Installation

The project consists of a digital-analog system, displaying 9 interactive spherical objects that animate depending on the audience audio, visual and haptic interpretation. When the light inside the balloons reaches full brightness, a “gong” sound effect indicates the start of a new phase, which entices haptic interaction with the elements. At this point, the second part of the interaction starts: reproduction and process of the sound, is captured into the balloons. By moving and rotating the balloon, the sound stored “inside” is released, through speakers, while being processed continuously with the speed and the direction of the motion applied by the audience. The installation invites the public to experience an imaginative environment, using all their attention and skills to perform, act, and discover its nature.



Figure 1: Echoes Installation. A pupil jumps to hit the E-balloon.



Figure 2. The Sonic Painting. Visitors play and form together a sonic painting.

Project 2: The Sonic Painting

The Sonic Painting is a digital-analog painting set-up that enables the visual and physical representation of sound in space, where a human brush paints digitally on white canvas.

The installation enables the translation of sound input into visual output, recalling the theories of Goethe and Kandinsky on color. Sonic Painting is designed to arouse creativity by using input sound generated directly from the participants. Their body represents a brush and their voice is the ink on the floor surface. In fact, coherently with the sound, a colored pattern will be projected onto the floor, exactly where the visitor produced the sound.

As a result, the sound emission will be perceived visually from the visitors on the ground where they have been standing/passing, thus drawing their own sonic painting. The Sonic Painting lets them play with their inner-sense of presence which remarks this constant attendance by reflecting infinitely on the interaction with “invisible matters”: air, sound, and color. This translation from invisible to visible, from here into now, and vice versa, triggers creative engagement.



Figure 5. Top: The Show Window. A passer-by walks in front of the show window. Bottom: The Show Window. Point of view of the webcam.

Project 3: “Desain”

Artists, sculpture makers, programmers, musicians and designers have been collaborating in developing two sound instruments as art installations in public space, in the form of two large-scale interactive sculptures.

The first metal sculpture draws upon the **Schrödinger's cat** paradox, displaying a cat sound coming from the interlaced multifaced box hanging horizontally in the middle of its cubic structure, which worked as a Theremin. This dissimulation leads the audience to approach the sculpture, which triggers the field around the structure, transforming the sound of the cat into a real-time experience where the visitor can feel the proximity. When visitors approach, the sound gets distorted creating a misleading effect which could either scare or interest them (a mix between a painful still uncoherent relation with the previous catlike sound). If the sculpture is touched, the threshold of the field transforms, letting the audience experience the outcome through the haptic exploration of the structure. If nobody stands around, the sound appears intermittent.

The second sculpture is a metal pillar on which three rotating cubes are mounted. The middle one hosts two speakers while the upper and the lower have both a motion sensor. All three of them have led light installed behind a semitransparent and reflective surface. Making use of the **Leslie speaker sound effect**; the rotation of the cubes that the motion sensor activates, and the combination created by the orientation, speed and the number of triggered cubes, develops a smooth electronic soundscape.



Figure 4. Candle Organ installation.
Pupils covering and moving the candles.



Figure 5. The Show Window. A passer-by walks in front of the show window.



Figure 6. The Show Window. Point of view of the webcam.

Project 4: Candle Organ

The Candle Organ is an interactive sound installation, which creates an interaction between a religious environment and the visitors' musicality. Candles on a table conjure up a contemplative atmosphere, in response to which the visitors can improvise and play music by lighting up, covering and repositioning the candles. Three musical parameters: pitch, loudness, and number of voices, are mapped to the candles' position, brightness, and number of the candles, respectively.

Project 5: The Show Window

The Show Window consists of a webcam, placed in the middle of a matrix of video devices behind a shop's window, that reads the pattern of moving objects in the street.

Each of the 12 tv monitors is streaming an image captured from one of the 12 cameras that are mounted on. The movements of the objects, vehicles, and audience in the street is translated into sound through two sound transducer components that are affixed on the glass window. The size, speed, and direction of the audience was translated into a violin, contrabass, drums, and voices, depending on the rhythm and composition of the scene on the street. The 24 video devices turn on and off through relay modules, in order to invite the audience to move instead of stand still, so as to discover the dynamics of the system.

Perspective on outdoor play

In these projects, I planned and developed the concept and its structure, taking in consideration the environment, materials, and the user's perspective. I aimed to orient the visitors' attention into the connection between the elements, framing the translation of information, rather than their outcomes. These elaborations can be seen as a way to use the body as an instrument, contributing to the feeling of movement and contact with the outside world.

Aspects related to the topic of outdoor-play, emerging throughout my projects:

- Open ended playscape, to foster user engagement
- Simultaneous interaction by multiple users, to enhance the social aspect
- The creation of head/hands-free intuitive Interface, to avoid disruption
- The user freedom of choice, for a deeper interpretation of order and actions
- The enhancement of the users' imagination: (ex. "Magical thinking")
- Gathering and allowing for the unexpected

Expected contribution to the workshop

My contribution to the workshop is based on sharing the aspects and related observations that emerged during my projects. I believe that the aspects that I approached from an artistic perspective throughout my projects are of high relevance for the topic of designing meaningful and engaging outdoor play.

In my belief, setting the user free to interpret the information, and free to play with the environment would structure ideas in order to leave space for unexpected results. Tackling these instances as focal points can have, in my opinion, great value in the development of outdoor play.

Designing for different levels of participation:

- Short/long term orientation (i.e., brief and over time extended interaction)

- Single to Multiple users

- Addressing a contingency in external artificial and natural agents (i.e., involve benefit present in the surroundings)

The user immersion:

- User as creator of content rather than spectator (i.e., exploit the qualitative aspects of the audience)

- Increasing the capabilities, the user carries (i.e., senses, skills)

- Amplifying the access and impact the user has in open spaces (i.e., allow and extend space accessibility)

Scanning the environment (i.e., pursuing the “Genius Loci”):

- Defining and frame aspects present in space

- Matching the environment affordances with the user cognitive dimension

- Taking in consideration cultural backgrounds

I wish to participate in this workshop to further elaborate on and extend these aspects.

In order to implement, complement and expand the experience, knowledge and practice in the future, I hereby submit this motivated intention to take part and contribute in the workshop.

Bio

I hold a Master of Arts in Arts and Design, from the department of Interaction Design in Graz, and a Bachelor in Design/Industrial Design at the University of Sassari. In 2015, together with an international team I founded a collective for interactive media art, where i worked as an Interaction Design Artist. I constantly follow purposeful connections between ideas and concrete context patterns, believing in step by step learning, availing interactions amongst humans, arts and sciences. In 2018 I started a PhD at the University of Salzburg where I am currently focusing my research on the connotation between human and digital/analog artefacts in order to make people interconnected, and feel present within the environment.

“If people were neurons, interaction would be their synapsis.”