

So near, So far

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Abstract

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This paper is intended to elucidate and analyze artistic practice performed during my doctorate study based on observations of the screen as a receptive surface where the invisible becomes visible and perception and imagination combine. The screen reveals the process of the human mind on perceiving specific things in between a variety of appearances and the endless desire and self-experience that drive one's perspective to somewhere over physical distance, somewhere we can see our progressions in time. Within the scope of the correlation between screen and space, screen-based works will be revisited through its emergent relationship with the spectator, where the spectator encounters the new materiality of the screen and produces a new subjectivity of affirmation. Furthermore, the paper explains the medium and interactive system used in new media artwork where found footage, computer-aided, real-time visualization, and

new possibilities of expressions are visible. Based on an interpretation of Paul Virilio's theory of *dromology* (the logic of speed), my dissertation exhibition investigates how one relates to moving images and then seeks to identify modes of associations among ideas that occur in reality. The exhibition aims to expand the perception of existence by implementing screens that become temporal and spatial and are then vitalized through fusion and exchange with real-space parameters such as distance, scale, speed, and directionality.

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*I hear a tree in the wind at night.*

*The tree sounds like one huge mass.*

*The individual leaves are obscured into one whole.*

*What I know as a tree is not what I perceive in the darkness.*

*For a moment it is not a tree, my inability to identify the mass breaks the sequential moments of memory, and reality becomes continuity.*

- from author's note

## Introduction

The motivation and research purpose of this paper starts from the present researcher's work. We exist in a mixture of natural and artificial spaces created by humans. Claude Monet expressed light and colors seen in nature in his canvases and I perceive objects with the same mindset. My interest in nature relates to light and changes over time. However, new lights, lots of LED lighting, and ordinary screens of smartphones and computers found in modern environments that Monet did not experience were made subject matter and canvases of my works. What appears and is revealed in various forms and speeds in ever-changing artificial lights drove me to engage in work as if I longed for natural light from artificial spaces.

Chapter 1 relates to research and experiment on "screen-space"<sup>1</sup> that goes beyond surfaces that emit light to display information and images in everyday life. The impressionist painter Claude Monet and the contemporary artist Robert Irwin are artists who offer the most excellent examples for the present researcher's study on screen-space.

In Chapter 2, I look into the extendibility of media art by considering interactivity and methods for utilizing diverse media for expression in exhibition spaces and analyze my related experiments. Assuming that interaction with spectators is practiced through direct and indirect networks, this chapter will analyze reference works and investigate methods of eliciting spectator participation and whether these methods reflect participants' changed perceptual modes and existing communication systems. Further, I will

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<sup>1</sup> I refer to "screens" in this paper as receptive surfaces where the invisible become visible, where images and information combine into a certain figuration in the process of making art.

investigate media artworks of a wider scope as methods for collecting and utilizing data used in network-based interactive interfaces.

In the last chapter, I will introduce the dissertation exhibition with performed research and project development. The dissertation project is developed with Paul Virilio's theory of "dromology" (Virilio 1978), space-time compression in the correlation between technology and perception, and the phenomenological understanding of distance and imagined space as perceived as an existential representation of reality constructed through the activity and engagement of image-users. It sets out to reconstruct biological and geopolitical anxiety by pulling out the vibrations and curves of organic life surrounded by infinite mechanical apparatuses. For this, the exhibition aimed for the sensory disagreement of signals in the semantic network of signs, ambiguous materiality in automated texts, noise in voices full of meaning, and ultimately disturbance itself. The dissertation exhibition comprises of multiple screen installations, LED sculptures, and networked digital interfaces. I will further explain methods for the real-time processing of interfaces that involves geolocational data-parsing, Web 2.0 interfaces, and user-interactivity.

## 1. Screen space

### - Light and Screen

Arguably, impressionism developed light into an element of painting. Impressionism dissolved nature and the human world into colors and light and expressed them with visual perception; Monet made the immateriality of light the subject of his paintings. Monet expressed changes of impression according to the conditions of temporal light and atmosphere and he was a pioneer painter of all-over painting.<sup>2</sup> When expressing material—meaning objects—onto a canvas, Monet expressed in his work changes of light and colors according to time and environment rather than being preoccupied with the essence of the object, which resulted in the infinitely expanded formative scope of the object and led to the repetition of the same subject matter to show various impressions in his eyes. His creative activities were carried out by instantaneous intuition rather than systematic theories. He carried out more sufficient experiments on light and colors through his eyes than anyone else and created unique works that cannot be found in contemporary mainstream works.

Monet both expanded the realm of freedom in painting and taught other painters and the public how to view objects faithfully with their eyes. While western art before Monet tried to depict objects realistically, Monet thought that an object should instead be painted “how it looks.” Here, there is a great difference between “realistic” and “how it looks.” While “realistic” implies a general, comprehensive, total, and common image not

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<sup>2</sup> A painting technique that removes a visual center and makes the relationship between the whole and parts within a canvas invisible by covering the whole surface with a uniform touch

premised on specific time and space, “how it looks” implies the image of an object encountered directly within specific time and space by a painter. The latter means an image that reflects the intensity of light shed on an object, and the atmospheric conditions, humidity, etc. surrounding an object at the very moment the painter sees it. Monet created works of his own sincerity and internal sensitivity while expressing the changes of light and colors onto the canvas and sought and created new methods as he kept producing his series of paintings. Impressionism was influenced by photography that produces images of a corner of the world by momentary light; this had a backdrop of rapid social transformation experienced in the process of industrialization in France and urban development in Paris. Monet’s *Impression, Sunrise* (Figure 1) depicts a morning seascape in which sunlight, climate, mood, and colors are mixed. He did not intend to paint a beautiful morning, but to record how the phenomena at that time actually appeared to his eye. Monet was interested in sunlight at the moment of early morning and the momentary change of colors that changed the mood of the port. Impressionist painting tries to represent the painter’s own impression, in other words, the more or less pronounced effects that the external world makes upon the sense organs. What the painter



Figure 1: Claude Monet, *Impression, Sunrise*, 1872

intends to depict on their canvas is this special view, not existing knowledge about things or what can be learned from education. This ever-changing view is determined by changes in light, which becomes the genuine subject of the painting. In addition, he sought the most variable elements to emphasize the concept of



Figure 2: Claude Monet, *De Gare Saint-Lazare*, 1877

instantaneity, meaning water, fog, shade, etc. *De Gare Saint-Lazare* (Figure 2), which is one of a series, expresses steam and things beyond it. Monet paid attention to light filling the train station, effects created by the constantly varying steam, and atmospheric changes. Steam in the picture obscures the view and coils around both the train drawing into the station and the passengers on the platform. On the horizon behind a curtain created by smoke appears a scene of downtown Paris together with sunlit buildings. The overall shapes are somewhat imprecise, as was the painter's deliberate intention. Monet represents the ephemerality of light and the movements of the busy city and the train simultaneously by means of rough brushstrokes and unclear expressions. Rather than depicting designated objects realistically, he built an all-over painting and filled the canvas with a picture up to its borders without a central composition and painted all sections of the surface with the same method and intensity.

This method can be found in his later work *Water Lilies* (see Figures 3 and 4); this shows expandability beyond a canvas as the top and bottom cannot be clearly seen (This method for the composition of a picture without a focus evolved into Kandinsky's abstract painting and Pollock's action painting). Although there is a fundamental difference between Monet's art and abstract art in that Monet did not initially intend to create non-figurative work, it may be said that Monet's dynamic representation techniques for



Figure 3: Claude Monet, *Water Lilies*, 1907



Figure 4: Claude Monet, *Water Lilies*, 1907

constructing a fluid picture without boundary lines suggested a new direction to abstract art in terms of maximizing the freedom of methods for imagery expression and delivering freewheeling touches, unclear shapes, and impressions. In addition, Monet's series of paintings that have neither order nor any definite numbering system and are parts as well as the whole require a new understanding of art. An expressed single moment in each painting composes a series and forms an index indicating the passage of time. Now, the meaning occurs in the process of painting rather than individual works, between pictures, or between the painter and viewer. What was made to stand out in the

form of a series is not an object painted, but rather the esthetic difference between works in the series. This further reduced the significance of the subject matter. From when Monet based his production of works on the perception of an object, that is, the sensation that varies according to individuals, impressionism had the potential to transition to complete subjectivism despite the impression of its similarity to objective realism. Although Monet did not give up on illustrating objects until he died, his later paintings show a process in which "the shape of an object" in a picture has dissolved and is

substituted with “the shape of a picture.” What is significant becomes “the shape of a picture” rather than “a shape outside a picture.”

Ultimately, Monet was the first painter to open the era of light, breaking away from imitative realism and breaking traditional styles. He was the first painter to pursue temporality to capture the effects of light according to changes in climate, through going into nature in person and depicting outdoor landscapes. Monet’s sensitivity to light and time and his breakaway from existing forms of expression have affected my understanding of screen-space. Monet was an artist who made the most of shade, not to mention light, regarding it as a rich phenomenal element in the world. Light and shadow are related in mutual premises and mutual restrictions. Shadow is another manifestation of light; where there is light, there is always shadow, and shadow is another face and the antipode of light. Between them, there will always be an object. Shadows transform, distort, and dualize illuminated objects and imply the partial absence of light on an object. In addition, human vision operates more like a combination of perceptions and sensations since we cannot see every detail between anything with bare eyes. It blurs and merges with the background. Then, visible signs of the complex interplay between subjects and the eyes become the synthesis of imagination.

Monet painted the same thing repeatedly to maximize how the impression varied over time. This modulized and extended the canvas so that the individual canvas became both the whole work and the background for the work at the same time. Monet’s extension and variation of surface reduced the meaning of object representation; however, the form that was extended due to temporality again visually enforced the impression of an individual

picture, which made the effects of light felt more tri-dimensionally and spatially. His dynamic and borderless use of canvas led to an understanding of the extended screen that made it esthetically different and unique. The expression of perception varying with temporality showed Monet's inherent sincerity and internal sensitivity that were revealed without being mediated.

My extended research on screen-space led to contemporary artist Robert Irwin. Irwin explored the physical experiences of his audience through the media of painting and sculpture in the circumstances of the art world trying to break away from the ocular-centrism of formalist modernism in the 1960s. He pursued purely visual-perceptual experience to the exclusion of ideas. Then, he explored his audience's artistic experience within their relations with space through extensive installation works in natural environments, architecture, and public places. For Irwin, installation works are a means to transform existing spaces and the surrounding environment into an artistic situation, and what makes his audience naturally involved in the situation sensorially. Irwin reestablished the direction of his art-making by stating that it "has nothing to do with content but rather purely with its own physicality and how that physicality was experienced perceptually."<sup>3</sup> Irwin extended works to the architectural scale through which he intended to suggest architectural elements that may be encountered inside an exhibition space (walls, ceilings, windows, thresholds, indoor lighting, and shadows) as architectural elements that have unique esthetic value. Through 3D work merged with surrounding spaces beyond a rectangular frame, he tried to point out limitations inherent in the planar space of a painting. In particular, he went toward drawing his audience's

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<sup>3</sup> Lawrence Weschler, *Seeing is forgetting the name of the thing one sees*, 2009, p.67.

phenomenal experience by utilizing light and space; he confirmed that a relevant space can be perceived as a substantially different form according to the aspects of changes in the environment of the space, such as colors, temperature, illuminance, and air circulation, and pursued continuity between audience and surrounding spaces by the medium of the work.

Irwin's works' open compossibility makes contradictory values that are generally considered incompatible coexist. In particular, the mundanity of reality and the fiction of art are made possible in the same space at the same time. Site-determined installation works derived from the architectural structure of existing spaces are imitation structures that emulate similar shapes of actual elements such as walls, windows, and doors and accommodate the formative language of architecture into them. *Excursus: Homage to the Square* (Figure 5), which is an installation work like an architectural structure, has an almost identical area and height to an exhibition hall of an existing gallery; its structure itself is an interdependent space that enables actual movement through openings and 18 partial spaces partitioned by scrim walls. This installation structure that occupies actual space and is similar to an actual structure is a fictional space in a purely artistic sense. Here we repeat our usual everyday behavior of entering and leaving the space



Figure 5: Robert Irwin, *Excursus: Homage to the Square*<sup>3</sup>, 2015

unconsciously, in the situation of artistic fiction. Through this, we are able to enhance our sensitivity to space and be immersed sensorially in artistic effects such as subtle changes of light according to the locations of spaces for movement and the overlapping effects of scrim walls. Like this, it may be said that space newly formed by imitation structures derived from existing architectural structures is both the real space of an existing location and a fictional space in the artistic context. Irwin further blurs the line between reality and fiction by making the real space of the gallery overlap in an installation work that is similar to a real architectural structure.

The simplified form of architectural environment reborn in the artistic context enables our immersion in the sensory experience of the phenomena itself. If we have really sensed the form, we come to think about what we have sensed. If we later describe and compare what we saw, the results will appear similar. Switching from sensation to intellect like this, both I and others become aware of the common objective form that is the very phenomenal essence. In other words, details, contingencies, and the personal disappear, leaving only the phenomenal essence. Spectators, as a community that shares this sensory essence, engage in implicit communication, and thus express their respective “I” at the same time for the world always appears in such a way that the individual “I” sees it. Neither light nor space, which are the main subject matter of Irwin’s art, have any physical entity. Space itself is an immaterial and indefinite element of which we cannot define either the start or end. We can only feel space concretely and physically when it is given temporal materiality and is transformed into a screen through architectural structures like walls, floors, and ceilings.

The temporal variation and architectural metamorphosis of the screen in Monet and Irwin enable us to feel and consider instantaneously and directly what we have not sensed or experienced due to its mundanity. The artistic and esthetic significance of various boundary dissolutions appearing on the screen restore our sensory purity that has become dulled, thereby allowing us to confront more directly the world surrounded by artificial lights and making us really come out of the representational screen. Based on these two artists' work methods that considered light and space, I discovered signs that revealed the dissolution of boundaries between opposing elements in the physical form of the screen, temporality, environmental situation, audience interaction, and relations among audience members; in addition, I carried out various experiments with a new combination of everyday screens to esthetically embody sensory experience about the disintegration of the opposing situation.

– Practice

For the spatiotemporal metamorphosis of the screen, I conducted a number of experiments using artificial lights easily found around us, beam projection and LED lighting. Beam projection and LED lighting themselves can provide attractive immateriality of light to spaces in various ways. The projector and LED lights were suitable tools for various screen experiments because they could be used as lighting to simply project light onto a space and their luminance, colors, movement, images, etc. could be controlled in real-time or using a programmed sequence with a computer interfaces.

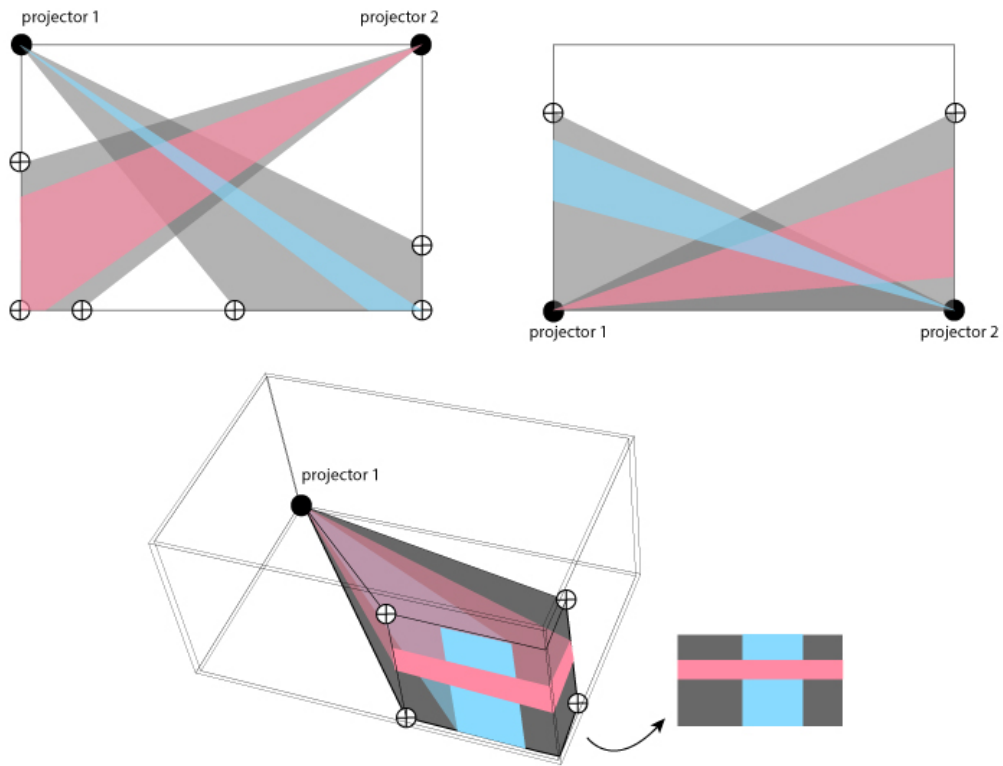


Figure 6: Projection Experiment

First, I used an ultra-short-throw projector that can project a large screen at short range. It can maximize the quantitative scale of a screen without an empty wide space and can fill the whole wall or beyond to the full with uniform light or imagery. Originally, the project was a projection on a rectangular screen that consists of square pixels, and thus only a rectangular projection screen was allowed. The edges of the rectangular screen set definite boundaries with straight lines, which is a feature enabled only by using a beam projector. By using its sharp edges, it was possible to appropriate diverse boundaries like the shadow of an object in natural light. This allowed an exact mapping appropriate to the architectural space that mostly consists of vertical and horizontal planes and allowed the realization of fictional spaces between architectural elements and spaces by means of

light, minimizing their heterogeneity to their surroundings. In addition, it was possible to accurately distinguish spaces between the projector and the projection surface from its outside, so I observed changes of luminance in space by dividing the space into geometric planes by means of sharp edges or crossing and overlapping it with the edges of other project screens. From this, I could scale quantitatively the attributes of natural light and shadow, which are difficult to implement using artificial light or the ambiguity of boundaries in visual perception.

Second, the light-emitting diode (LED) lighting is the optimal tool for the implementation of a fragmented and architectural screen as its individual and multiplication of pixels enable diverse grid forms. In addition, sequence programming several attributes of individual pixels is possible, as is implementing the effects of moving light by mapping the brightness/color of each pixel or blending multiple colors. I utilized these advantages of LEDs actively and observed the brightness, color, overall mood, and shadow generation of varying space while architecturally placing individual LED grids. Further, I modularized the projector and LED, connected them in a wireless network, and made them operate individually or as a whole module in real-time or according to a sequence programmed by the computer interface (visible in the dissertation exhibition). I confirmed their potential appropriation/utilization as an esthetic and architectural screen. Spatiotemporal metamorphosis using this appears as a space and the audience's resultant esthetic experience from the subtle brightness changes and the movement of light in the work is introduced later.

– Screen and illusion

During my study, I luckily had opportunities to work with choreographers and dancers. I intended to expand my area of interest, the screen-space, and deliver a refreshing encounter with the performing arts to the audience through the use of digital technologies. Properly explaining my use of the screen in this work requires a referential understanding of the illusion-screen in performing arts.

Performing art maximizes the expressive power of space by maximizing the potential of a theater. The performing art is the process of sharing an experience in a space with an audience through the accomplishment of choreography and staging. Thus, it is always an experiential process because multiple media are presented continuously through space.

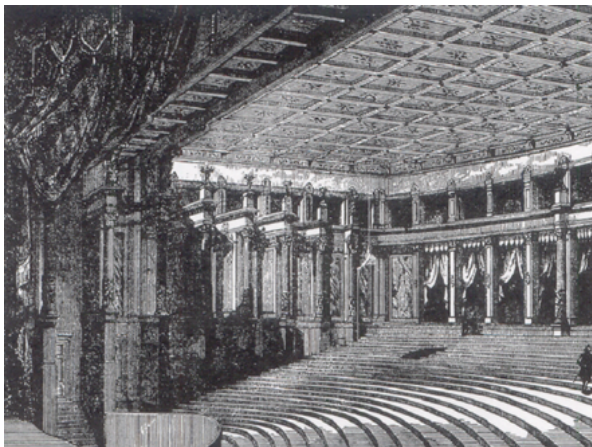


Figure 7: Richard Wagner's Total Art 'Gesamtkunstwerk'

This process is an esthetic exploration of the potential capability of performance and a key element that determines the nature of performing art. The screen and illusion are essential elements of performing art as the screen is a sensory prerequisite for works that trigger cognitive function and illusion is the gazer's esthetic synthesis of artistic works. Thus, the performing art in its existing theatrical form has constructed a screen of illusions combining media, such

as acting, choreography, and staging, to deliver drama at its best. The “total artwork” of Richard Wagner (see Figure 7), whose vision was the creative unification of multiple art forms, perceived the theater as a “scenic-landscape-painting” (Wagner 1895:190). He designed a proscenium of theater as an imaginary plane for scenic spectacles, and a fan-shaped auditorium to ensure perfect sightlines from every seat, to focus all attention on the stage action.<sup>4</sup> From the realization of screen he devised for a theatrical illusion, Wagner strengthened his vision for an immersive illusion of total artwork. The immersive illusion appears in a condition where it is impossible to differentiate between the screen and the illusion because they adhere to each other. Therefore, the screen and the illusion are not the same beings. The reason that Wagner’s “total art” is separated from the immersion is that the close adhesion of screen and illusion disconnects the continuity between the gazer and the world of immersion. As the interactivity-based electronic media comes to unite with the screen, the continuity between screen and illusion starts to rupture. Interactivity can work only through the recursive awakening of continuity<sup>5</sup>, and the interactivity of performing art reveals the continuity between performance components. A situation where interactivity allows the stylistic framework of a theater to be perceived collapses the discontinuity between illusion and the world of immersion. That is, illusion in the theatrical space excludes immersion and becomes contemplative.<sup>6</sup>

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<sup>4</sup> Nevertheless, his staging technique was criticized for combing a radical deindividualization of the individual visual perception and an extreme individualization of total screen: “Wagner would find many different advocates and forms in the early twentieth century ... to the designs for immersive multimedia theaters and performances conceived by the German Bauhaus artists” (Steve Dixon, *Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation*, 2007:41-3).

<sup>5</sup> Interactivity implies the real-time processing of “... system which reacts in the moment, by virtue of automated reasoning based on data from its sensory apparatus ... Interactivity implies real time.” (Ibid. p.560)

<sup>6</sup> Ibid.

Therefore, the introduction of modularized and interactive performing art requires a new approach to the screen and illusion.

Modern new media collapses totality by transforming the flat screen of a theater and forms a divisive screen for illusions by interacting with the traditional performance elements of a theater or making the external element (the audience) a target of interaction. To move to inside an illusionary screen, the screen must be ruptured to disclose its temporality and spatiality, thereby declaring that the performance is proceeding here and now.

– *Night Cloud*

In the search for a new esthetical experience in performing art that is real-time and interactive yet contemplative, and to evoke the experience of awareness and immersion from the audience, I employed multiple light projections of morphing geometric planes that physicalized and orchestrated together, exploring a vast range of vision-effects of screen-space. Stemming from my interest in visibility/transparency through the movement of light and a weather system that searches for a connection to boundaries of natural and artificial spaces, I intended to create a cloud environment inside a black-box theater setting. To recreate the ever-changing shape, mass, and visibility of clouds on stage, I materialized the light using a haze machine, which is often used for theatrical stage effects. Light in the haze is like an intense light beaming through the window or a gap between walls and the shape of the shadows as a void space also keeps varying according to the movement of objects in the light. Although light is materialized in three dimensions, one projector cannot fill the whole 360° stage space and the metamorphosis

of unidirectional light cannot create diverse visual effects. Therefore, I viewed the rectangular stage space as a rectangular prism, quadrisectioned the space diagonally, mounted short-throw projectors on the floor vertically at the four corners of the stage, respectively, and then had the projector screens occupy quarter of the stage space. Four rectangular-pyramid screens filled the stage space, and the whole space of the stage was under the influence of the light projected from at least three directions (see Figure 8).

This placement of the projectors naturally made the boundaries of four individual screens overlap each other by about 4 ft, creating an X-shaped area ranging from each corner to the center that was brightest and most sensitive to light. These boundaries were not clearly visible to audiences due to their viewpoint positions and the haze within the stage. I named this X-shaped area the “hot zone” and considered it an important element in planning the performance sequence. Choreography was developed so that the dancers’ more delicate movements and interactions between light and shadow could be revealed further in this hot zone. As a result, many uncertainties occurring in the 3D spatial mapping with 2D screens was reduced and diverse screen movement sequences could be produced that corresponded to dancers’ positions on the stage and matched the choreography during the 14-minute performance. I controlled each individual screen in both real-time and non-real-time to move interactively with pans, swipes, and overlaps. From the audience perspective, situated on one side of the stage, this 3D screen-space on stage appears as a flat 2D screen due to the perspectival limitation of interpreting the 3D space in a hazy environment (see Figure 9). Thus, in this controlled environment, I was

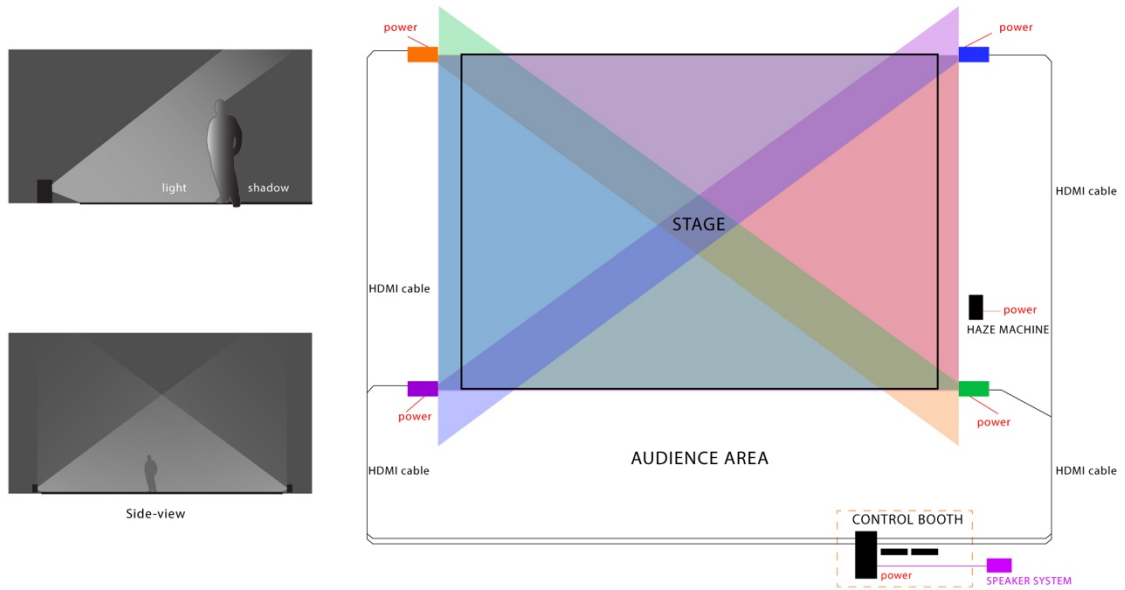


Figure 8: Night Cloud (2018) - layout

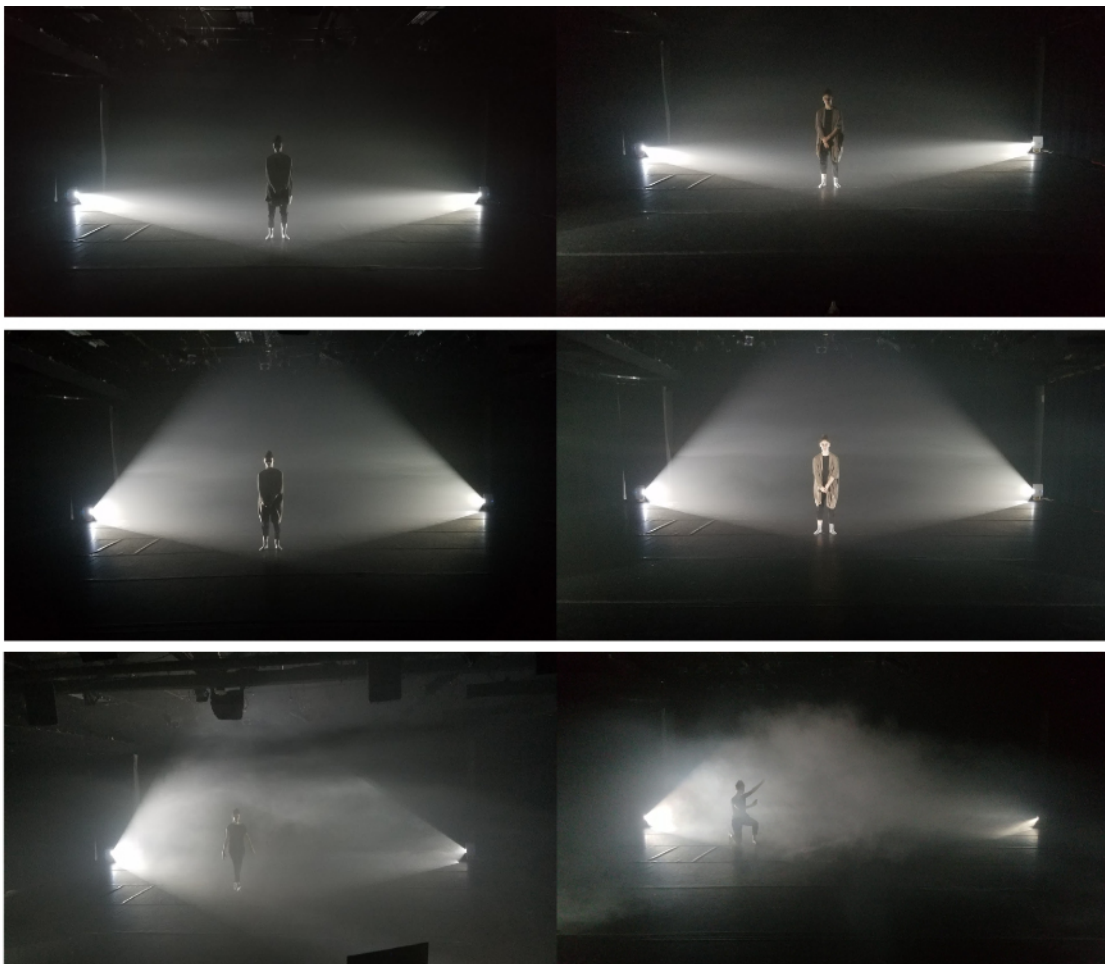


Figure 9: (continued) – Screen test on stage



*Figure 10: Night Cloud (2018)*

able to compose the piece from the audience's perspective while changing the visibility of the dancers; in addition, there was a variety of visual effects due to the translucent nature of the materialized light on stage.

As the performance progresses, the audience finds that four projectors are projecting onto the hazy stage. The audience not only perceive the mechanical medium on the stage, and the field of view relying on it, but also perceive a sense of the presence of themselves who look at the stage through the artificial lights. On the whole, audiences are interested in experience, not technology. They experience something delivered by media, such as feeling and deep impression, and enjoy the experience of immersive thought and feeling. In the present work, over time the audience realizes that light is not information coded for the representation of cinematic images, and that neither does it act only as traditional stage lighting. Rather, in an environment filled with haze that is tactually perceivable



*Figure 11: continued*



*Figure 12: continued*

even from the audience seats beyond the stage, audiences become immersed in the performance, synchronizing their own visual and tactile senses with the light of the projector itself and with the deliberate interaction of the dancers' choreography with light.

This collaborative work has the same concept as theater in that it provides immersion to people in a closed space. However, the moment the audience's viewpoints move to the inside of the stage, the illusion becomes productive, breaking away from the area through acts that traverse multiple screens and view the same screen from different viewpoints and frameworks. Dancers conceal and reveal their bodies repeatedly under moving light and shadow, and this removes the magical moments of disappearance behind the screen or the sudden appearance in front of the screen. The movements of the dancers are very basic physical phenomena enacting common scenes with which everybody sympathizes. Here, the screen refuses immersion into illusion. The refusal of an illusion begins with knowing that the illusion is just an illusion and that there is another position on the inside of the stage from which to view the illusion differently.

Through completing this piece, I have expanded methods on creating a formative space for storytelling with approximately heterogeneous elements such as dancers, music, beam-projection, and other digital devices. This requires an understanding of the abstract and undefined stage space to complete a multi-dimensional model of reality, the expression on the stage should be a suggestive communication that requires imagination rather than illusion or representation. I continued developing methods with the screen-space, this time an architectural appropriation of screens, including disparate screens and transparency in physical entities. Displacing architectural objects from a domestic space was one such experiment.

– *Blind film*

*Blind film* (2018) began by looking at a commonly found type of window and window blind. At a moment of coincidentally seeing an instantaneous stripe form due to the sunlight penetrating a blind and shining through the room, the strong sensation left a trace on my body. Yet, remembering the principle of reflected image formation and the characteristics of light, the instructed information images removed the traces like a reflex that had remained in my body. However, by remembering the principle of reflected image formation and the characteristics of light, the instructed information images got rid of the traces like a reflex that had remained in my body. I tried to focus on the intense feeling of sensation that remained in my body for a short while during the art-making process, an unknowable glimpse of light that formed a figure between the moment of occurrence and the moment of observation. To express the sensation felt at the very

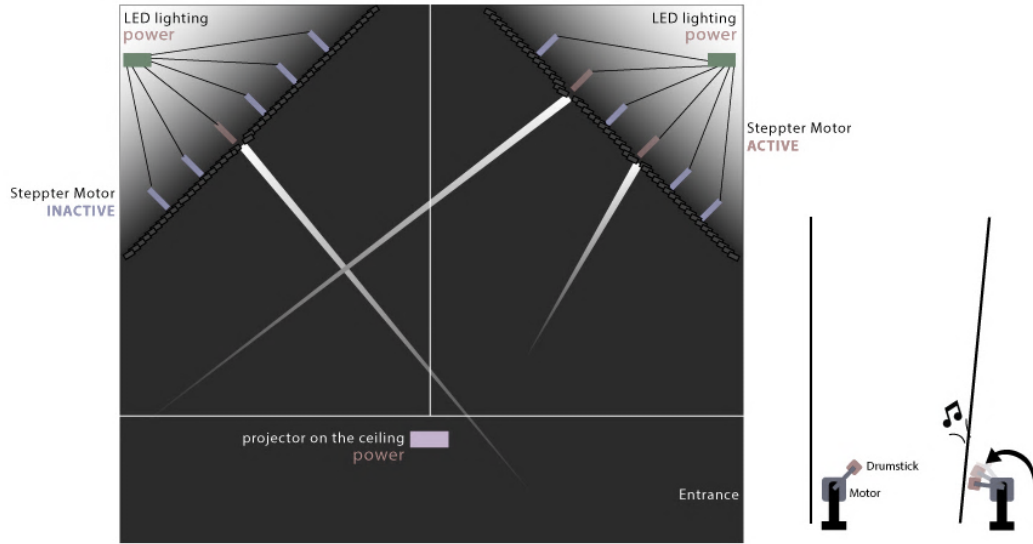
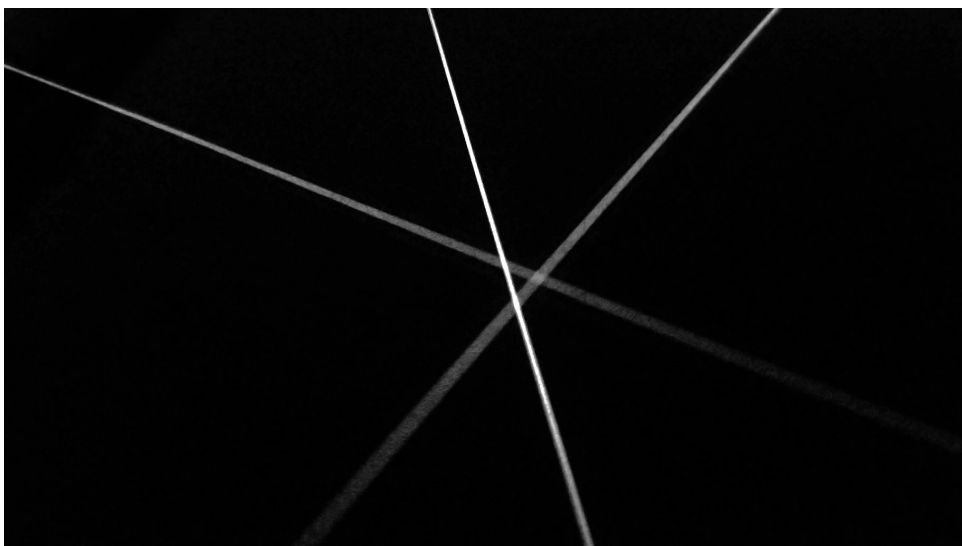
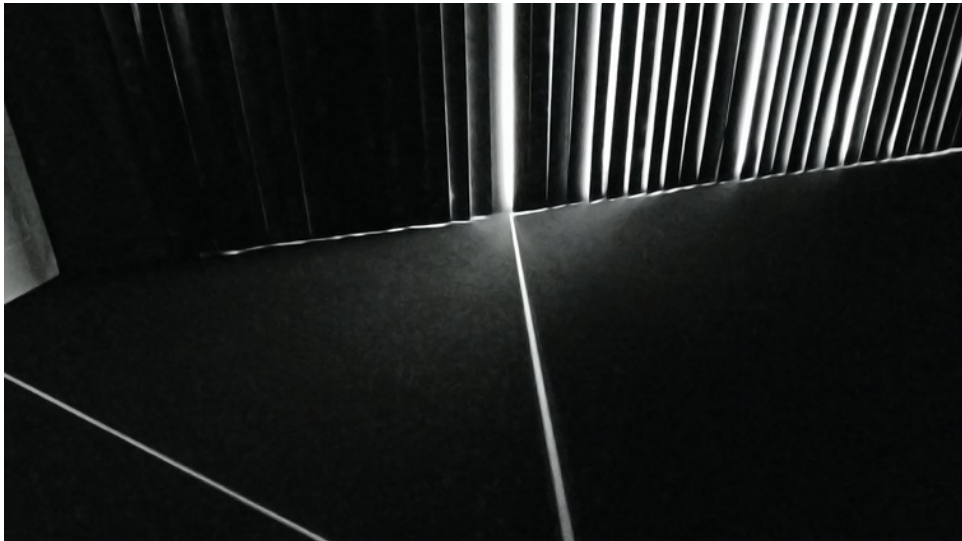
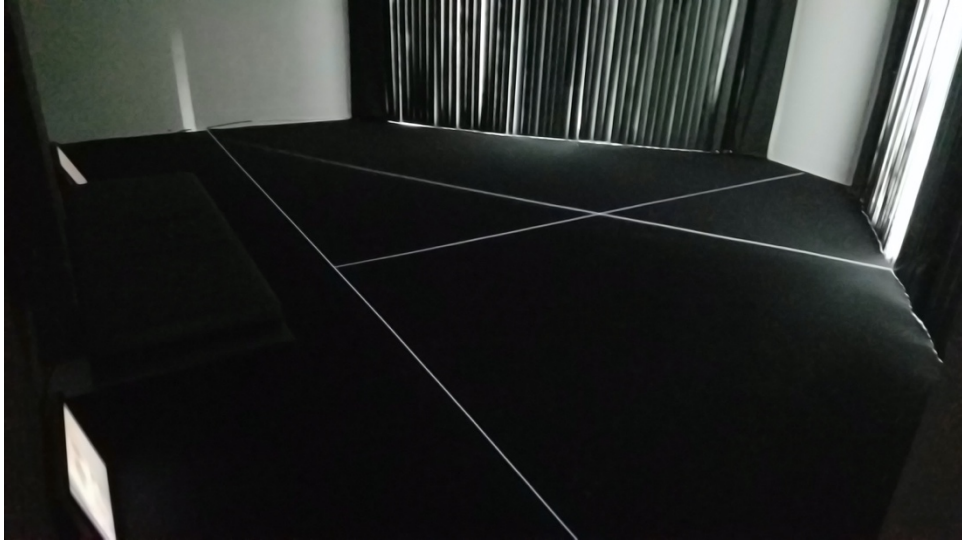


Figure 13: *Blind Film (2018)* - layout

instance, I tried to exclude logical consciousness and the external forces that bolster subjective embodiment during the performance of making this artwork. I used vertical window blinds that are diagonally filled with a two-cornered gallery space. Each window-blind structure consists of multiple blind panels that block a strong white LED light from behind. At times, the bottoms of the window-blind panels are tapped by a motorized rotating stick and a stripe of light leaks out of the gaps between the panels from both partitions to run across the exhibition space. In addition, a thin inverted T-shaped light stripe is projected onto the floor from the ceiling, trifurcating the space. The central vertical line splits the two-cornered spaces with identical window-blind structures and the horizontal line separates the installation space from the viewer's seating area. This digital projection of static light appears like a tennis court line that demarcates each player's side and the non-playable area, which belongs to the audience. In a gallery space without interior lighting, the viewer's vision becomes completely reliant on the lights from the work.



*Figure 14: Blind film (2018)*

The window-blinds ruptures and the stripes of light momentarily come through the gaps; this integrates with the gallery space in a rhythm. The rhythm drives the contraction and expansion, and each blind's progress separates and conjoins simultaneously rather than framing the walled surface. The bifurcation of the gallery space by the identical partition of window blinds that occupy each corner contributes to the expansion of each structure's incomplete transparency and thus unites and spatializes its architectural narratives. When the stripes of light that come across from the window-blind structures, or multiple stripes at the same time intersect with the projection line on the floor, a momentary crossover occurs between analog and digital sensations. In this meeting, light does not act as a medium for visualized visual communication. Instead, the beams of light make themselves into an architectural screen and allow the audience to feel the screen tactually while interacting with the work.

In this work, I interspersed the architectural surface with interstices<sup>7</sup> and put into the image frame viewed by audiences. The interstices work as an opening for the image extend to the other side of the architectural space; that is, the gallery space, outside of the gallery building, and the frame act as catalysts for opening and starting, not boundaries. Audiences have only to enter into an encounter presented by the variation of screens and over time. Julia Kristeva quotes this paradigmatic case of art as an access point to other worlds.

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<sup>7</sup> According to Nicolas Bourriaud, the interstice is a space in human relations that fits more or less harmoniously and openly into the overall system but suggests other trading possibilities than those in effect within this system. (Nicholas Bourriaud, *Relational Aesthetics* (Les Presses du réel, 2001) p.17)

*In an installation, it is the body in its entirety which is asked to participate through its sensations, through vision obviously, but also hearing, touch, on occasions smell. As if these artists, in the place of an “object” sought to place us in a space at the limits of the sacred, and asked us not to contemplate images but to communicate with beings. I had the impression that [the artists] were communicating this: that the ultimate aim of art is perhaps what was formerly celebrated under the term of incarnation. I mean by that a wish to make us feel, through the abstractions, the forms, the colours, the volumes, the sensations, a real experience. (Julia Kristeva, as cited in O’Sullivan, 2006:51)*

While carrying out my experiments on screen-space, I tried to actively organize spectators’ physical spaces and intervention methods without limiting myself to discourse about the significance of the screen as a virtual space and the medium specificity of an image. In the following chapter, I will continue investigating the screen as a synesthetic “experience” beyond “seeing,” and explore its value as a medium to extend my understanding of the subject and world, not merely its exhibitory value.

## 2. Medium and Interactivity

### a) New Medium

Media theorist Marshall McLuhan viewed all media as psychological and physical extensions of human beings. The core of his theory is “The medium is the message,” because the medium through which the content is delivered is more important than what content is delivered. This argument of McLuhan also has opportuneness in both contemporary art and the social context. The medium of art has also varied as times have changed. In addition to conventional painting and sculpture, photography and video art appear in the mainstream art world. Then, media art that uses computers has been positioned as an important art medium and a wide spectrum of media art is emerging according to the selection of various hardware and software. In contemporary art where all of these coexist, which medium is used is as important as what is expressed. While new media art may be confused with video art as they both utilize moving images, new media art may be viewed as a major concept that includes video art, for the use of this medium stands out in new media art. While existing video art has evolved for the purpose of immersiveness and the destruction of narrative through editing techniques such as deletion, removal, and skipping of images, new media art is characterized by the utilization of media such as by concentrating on a specific perspective/subject, utilizing a variety of audiovisual elements, and the diversification of installation methods or projection types. In addition, this diversification of medium leads to the expression of

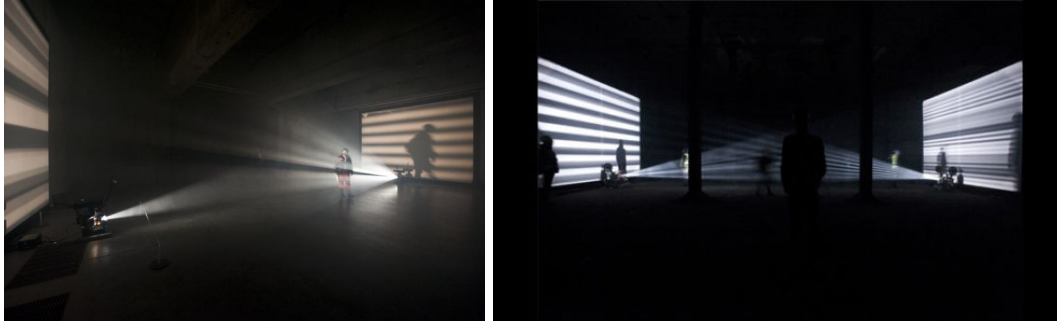


Figure 15: Lis Rhodes, *Light Music*, 1975

temporality and spatiality based on the existing application of a shared medium and thus becomes a method for pursuing the reality of new media art.

Lis Rhode's *Light Music* (Figure 15) is presented with two 16-mm projectors and screens in a gallery space that is hazed with dry-ice. The film shown through the projectors shows line patterns and white quadrangles that change in all directions and flickering effects caused by the projection of the filmstrip. In this work, sound is as important as images and optical sound from projectors provides the viewer with both aural experience and an intense visual experience. In addition, the audience sees, perceives, and experiences tactually in-person projector beams through the haze. Like this, the "apparatus" of the video installation leads not only to perception about itself but also to the perception of experiencing spectatorship, rather than viewing spectatorship. When viewers perceive and experience the work as they move between screens, the screen is viewed as the medium for a sculptural object or space construction. Each object that makes the screen—such as the projector display and wall—has a sculptural composition. Due to these characteristics of the screen, the video installation only remains in a sculptural form with the screen itself, even after projection ends. Margaret Morse said that audience of video installation is those invited to the space of a work rather than the spectators or

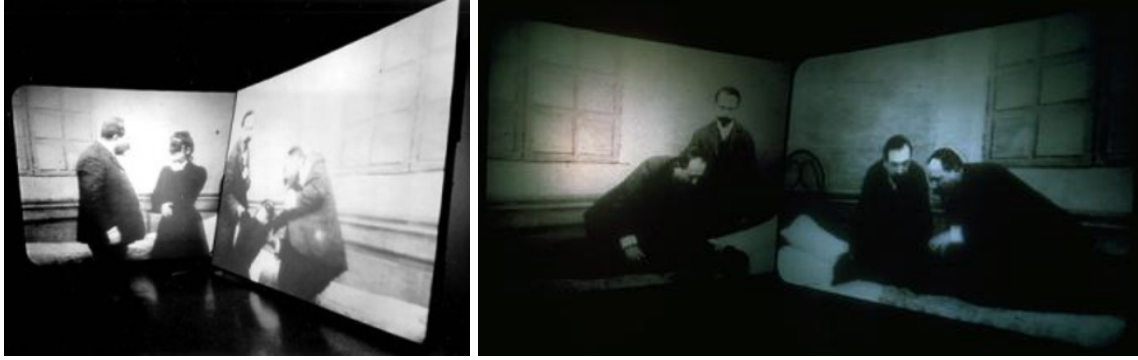


Figure 16: Douglas Gordon, *hysterical*, 1995

viewers who are assumed to just watch from the seating area.<sup>8</sup> While painting spectators require imagination with which they should move through a virtual space “not here or now,” in psychological experience that is visually triggered, a video installation audience has the parallel experience of going through a work in person “here and now.” This experience brings about some changes in the visitor and allows them to learn something. At this time, the learning is not intellectual, but understanding and feeling the world using the abilities of the body itself, meaning their visual, aural, and kinesthetic abilities.

Douglas Gordon’s *Hysterical* (Figure 16) comprises two large screens that lean against a two-walled corner of the exhibition space. The work displays scenes from a 1908 silent film that depicts a situation of a medical experiment in which two Italian doctors are trying to calm a hysterical woman. This film is re-edited at different speeds and is projected on each screen. That is, while the scenes projected on the screens are from the same scene, the normal-speed image is projected on one screen and a slow-motion image on the other. When the images on both screens occasionally coincide, the mirror

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<sup>8</sup> Margaret Morse, *Video Installation Art: The Body, the Image and the Space-in-Between*, in *Illuminating Video*, 1990. p.155.

technique for showing two bisymmetric images is displayed. Further, by using a large screen, the work sometimes displays life-size figures in the picture, thus creating immersive apparatus like a cinema projector in addition to the shadow of the spectator themselves as an apparatus to hinder immersion by contrast. This simultaneous use of the screen creates a liveness as if the image on the screen is actually experienced (for example, spectators feel the time and space even they no longer exist in the space) and intense theatricality as if the image is performed on the actual stage. In addition, it may be deemed that liveness and theatricality pursued by such a screen installation approaches the relationships between space, image, and memory.

We can cite found footage as an important audiovisual medium used in new media art. For found footage, many artists use broadcasted media, motion pictures, archival footage, etc. and operate the visual code of the medium self-consciously while utilizing it critically. What was important to these artists was not how it was used, but how it was juxtaposed and adopted. They destroyed illusion from the linearity and narrativity of the medium and actively used disagreement between original and present functions. Manipulation of the familiar medium plainly exposes the structure of cinematic and representational reality that was believed perfect and the familiarity of the medium becomes unfamiliar and a layer of new understanding and meaning is born at that moment. Originally, “found footage” refers to operation using cut or leftover film from existing cinema. That is, it may be said that the leftover film used in this case are readymade “found footage.” Found footage is based on archives in that it reuses leftover film or existing images while employing appropriation, re-enactment, re-mediation,

sampling, clipping, re-adaptation, compiling, and re-editing as its major techniques. In addition, it puts a manipulative touch on existing film, such as by adding color or subtitles, reducing or increasing the playtime, and modifying the soundtrack.

Found footage in different genres and forms all exhibit the same fundamental process and show the process by which selective reproductions of copy or simulacrum produce a new original through “a copy of a copy.” Practically, it may be deemed that the root of found footage is the extension of postmodern adoption, although found footage is close to self-conscious thick text rather than a parody or pastiche. The root of such adoption lies in the most basic rhetorical device originating in ancient times that reuses readymade idioms or repeats clichés. Similar to collage, the process of adoption isolates objects from their context and rearranges them. In terms of the connection between parts, found footage operations generally correlate with structural systems like semantic segments and loosen grids.

With the production of a series of works projecting celluloid film onto gallery exhibition space, Tacita Dean represented “Cinema of Exhibition,” which has been an important trend in contemporary art since the 1990s.<sup>9</sup> The most distinct characteristics of Dean’s “Cinema of Exhibition” works are elements of structural film. The term “structural film” was coined by P. Adams Sitney to explain a common tendency identified in American avant-garde films from the 1960s and has been used ever since as the generic term for a variety of experimental film works that search for the materialistic nature of film media.

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<sup>9</sup> According to French critic Jean-Christophe Royoux, ‘Cinema of Exhibition’ commonly refers to artists’ or directors’ works of transforming and re-creating the materialistic and technical components of film, the mise-en-scene, montage, narrative, and spatiotemporal continuity of film images, through gallery installation works in diverse forms.

With the aim of exploring the medium-specificity of films, structural film works are motivated in such a way that narratives or representational objects that can be explained from the perspective of general feature film works either disappear or are minimized and the effects of cinematographic apparatus such as celluloid film, cameras, and projectors, are shown. These characteristics, that is, the minimization of representational objects and direct emphasis on the cinematographic apparatus and their materialistic and technical effects, are commonly revealed in most of Tacita Dean's 16-mm projection films. However, the thematic consistency revealed most explicitly in Dean's "Cinema of Exhibition" works cannot be explained by the prioritization of the materiality of the medium alone on the basis of the historical legacy of structural film. This is linked to the issue of referent that is captured and utilized by Dean's works.

Dean has consistently varied and developed "the Obsolete." "The Obsolete" are photographs that record momentary events, the indexicality of celluloid, and the presence of photography films and projection slides are increasingly forced out toward the periphery in modern media culture. Dean explains found footage in the archiving process of collectable media consistently, as follows:

*"I do not want to give these images explanations: descriptions by the finder about how and where they were found, or guesses as to what stories they might or might not tell. I want them to keep the silence of the flea market; the silence they had when I found them; the silence of the lost object."* (Dean, *Floh*, 2001)

*Film* (Figure 17) is a work on 35-mm film that lasts 11 minutes and was projected on a 13 m-high colossal white stone pillar at the Tate Modern's Turbine Hall in London. There are sprocket holes on both sides of the white stone pillar, which are perforated on both sides of the celluloid film, and the vertical space between them is divided into frames, the minimum unit of a film image. Images flowing inside the frames include sea, springs, waterfalls, trees shaken by the wind, and branches reflected in spring water, revolving around the latticed window of a medieval building. The latticed window and quadrangular spaces surrounding it diffuse intermittently monochrome colors of diverse spectra, reminiscent of Mondrian's abstract paintings. Sometimes the whole screen flickers instantaneously and moves on to another image. This feast of colors and light includes traces recorded on celluloid by a film camera, flash by the arbitrary use of a camera filter, flickering effects generated by the manipulation of film frames, and tint effects generated by applying manual work and chemical processes to the celluloid surface. *Film*, the title of this work, implies a portrait of the film itself produced in harmony between all of these.

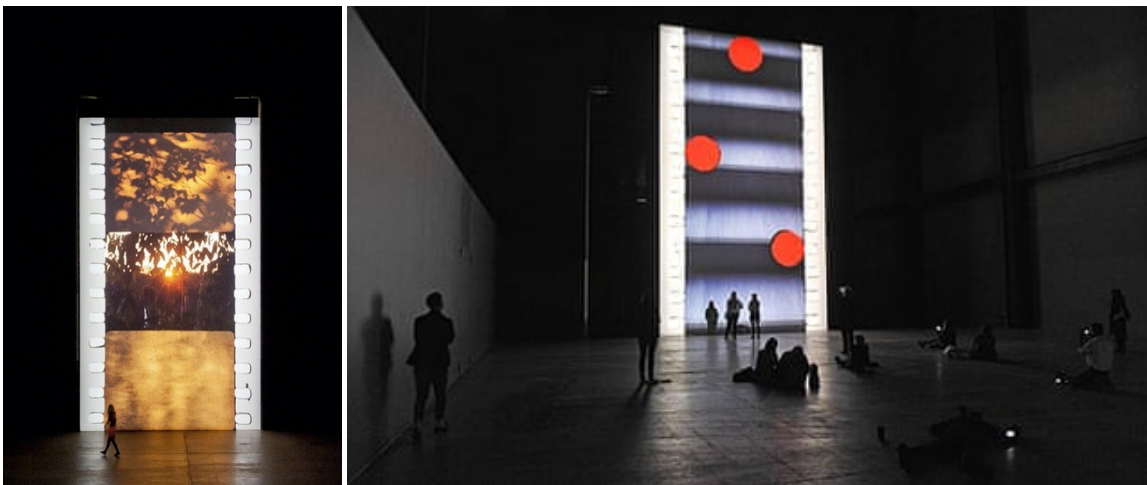


Figure 17: Tacita Dean, *Film*, 2011

Another feature of the work is the method of projection installation and interaction between “in-frame” and “out-of-frame.” Catherine Fowler points out “foregrounding frame” as one characteristic of works belonging to the “Cinema of Exhibition,” and pays attention to the generation of a different frame concept from that of standard theater movies.<sup>10</sup> In standard cinema movies, while the screen frame varies with frame replacement caused by camera motion and editing, the outside of the frame space disappears. However, in films or videos installed in galleries, while in-frame attention is required as in theater movies, an out-of-frame installation space is included as a component. Although it is clear that no “Cinema of Exhibition” work self-consciously refers to out-of-frame and viewers’ experience modes, the fixed frames of Dean’s work creates an equivalent situation to Fowler’s “foregrounding frame” by drawing attention to the functions and meanings of screen frame through their consistent use. These fixed frames draw attention to both objects moving subtly on the screen and apparatus repeatedly operating in the exhibition space outside the screen.

The media of cinema and photography used as found footage in the works of Gordon and Dean have various meanings due to their own material attributes and purpose. However, in our current overflowing online and offline media, our past experiences or things in life are only imprinted as universal images and the materiality of their respective individual images disappears. In addition, they show how insensitive to such reality we are in this world structuralized by media and the images that come from them. Therefore, I became interested in methods of using diverse audiovisual media and images from the Internet or

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<sup>10</sup> Catherine Fowler, *Room for experiment: gallery films and vertical time from Maya Deren to Eija Liisa Ahtila*, 2004. p.326.

smartphones as found footage. I programmed custom software and transformed found footage into new image forms that were extracted from various visual media that temporarily appear and disappear in modern society, such as internet video streaming, smartphone applications, data visualization in public places, and locative/informational based static/moving images. Then, I carried out a series of works to present the output of moving images or data visualization.

– *Untitled [ ]*

*Untitled[ ]* (2017–2020) is a series of video artworks for multi-screen projection. This work considers the one-way interactivity of internet streaming as a communication barrier and attempts to realize the topological landscape of a city in non-linear time. For this work, I walked around city streets with a GPS tracker running on my smartphone without any specific destination or route, but I took care not to walk down the same street twice or come back the way I had gone. I only walked along big streets with a large amount of car traffic as though I was driving a car on the road (see Figure 18). After my walk, I generated a loop of the street routes from the walk and sequentially collected street images from Google Street View<sup>11</sup> in accordance with the route at a specific angle as if they had been photographed through a car window while driving along the generated route. I employed Google Street View, a stream of informational images that exists

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<sup>11</sup> Google Street View is a technology featured in Google Maps and Google Earth that provides interactive panoramas from positions along many streets in the world.

# May 16, 2017

5:08:50 PM

Statistics computed from imported data

Tuesday, May 16, 2017 5:08 PM CEST  
Distance: 4.7 miles  
Duration: 3 hours, 0 minutes, and 34 seconds  
Average Speed: 1.6 mph  
Minimum Elevation: 154 feet  
Maximum Elevation: 351 feet  
Total climb: 901 feet  
Total descent: 1040 feet  
⇒ 7.57 km

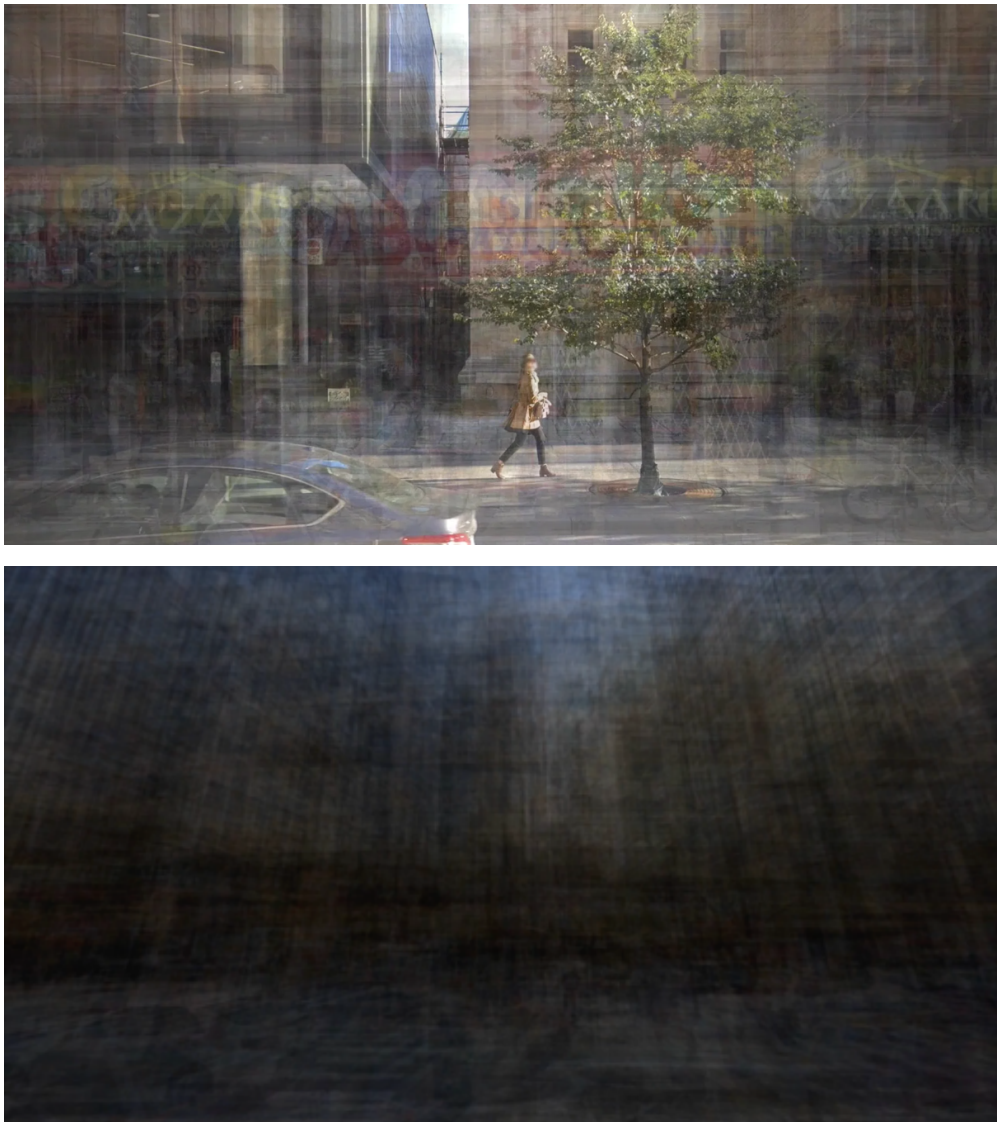


Figure 18: Walk with GPS tracker



Figure 19: Compiling Google Street view

around us as a material structure, like looped information, and this firm existence of the structure seems unconnected and unrelated to anything other than itself. I processed these Street View images using a customized video editing interface that sequentially overlaid each image over the previously loaded images while slowly erasing the previously loaded images in order (see Figure 19). This video processing created a smoothly transitioning matter as fast-phasing images that travel along the route as if driving down the streets in one direction.



*Figure 20: untitled[ ] (2017-2020)*



*Figure 21: continued*

Additionally, I inserted the static images of the Street View from the generated moving image amid fast-phasing transitions (Figure 21). The blurry-edged (masked) static street images appear sequentially on the screen as paused frames over the moving images. This implies capturing a moment of the journey as if taking a photo while driving down the road and passing places. I intended these paused moments to be seen as flashbacks while reclaiming the lost information from the street due to the directionality and speed of the desired travel. For the installation of this work, I have expanded the video to double the length of the original while maintaining the image's proportion and ratio without mirroring or stretching. Then, I rendered the video in a seamless loop to be projected on two large cornered walls of a gallery. Due to its large-scale projection, the scale of the



*Figure 22: continued*

street image matched the life-scale and the perspectival sightline of one's vision through the car's side-window (see Figure 22).

Making an image move endlessly and repeatedly keeps it vibrant in the viewer's perception and allows them to see beyond what can be seen. This is a risky experiment of time-based work. In other words, this means constantly deleting the entirety of the reproduced image and cutting the link between the reproduced subject and the real entity. As a single image-frame, it appears as a structure together with the next frame while the remaining images belong to a pure visual perception. In this way, each frame belongs both to all and to none at the same time. It can be said that the intermediate frame, which functions as a foreground-frame, visually forges the intensity of the discernible image to converge at limits and to enter into infinite new series with the relation between limits, thus generating a rhythm and establishing a conjunction.

Furthermore, the architectural placement of screens with the Street View imagery using projection on the gallery wall, its perspectival level, scale, and composition aimed to extend into the new potential of time-based art. The relationships between frames on the screen and between in-frame and out-of-frame all aimed to deconstruct any existing figuration and representation of the image and the screen becomes transparent to the audience's perception. Therefore, the relationship between frame and the background, gallery space and the outside, and Google Street View image and the real street varied according to the matter of their proximity to each other transformed into architectural expandability. This extendibility of the screen again becomes a purely visual perceptive image.

## b) Interactive System

The interactivity of media art involves the public in works. In early media art, just the fact that spectators could participate in the process of work held great significance. However, for spectators who became accustomed to the interactive media environment, passive participation such as changing the screen by pressing a button, shaking their hand in front of a camera, or triggering the operation of a work by a spectator's motion is no longer novel and arousing empathy is difficult. Rather, spectators who have become accustomed with these methods of participation tend to interpret a work only through apparent technical understanding without deeply thinking about its content. Another problem that hinders spectators' participation and empathy is that the participation methods are too difficult or unintuitive. Spectators often experience cases in which they hesitate and pass by because they are reluctant to read a lengthy explanation or do not understand how to operate the device. However, interactive artists' position is not a cult of technology insisting on having technologically unique and florid interfaces to the exclusion of the artists' internal expression or messages to be delivered to spectators. Except for intentional cases in which an artist regards the delivery of a message more important than spectator participation, the significance of interactive artwork lies in the



*Figure 23: Maurice Benayoun, Tunnels around the world (2012)*

production of interactions between participants and the work as an interface and in its ever-changing content in a state of fluidity. Maurice Benayoun's *Tunnels around World* (Figure 23) connects several places around the world using the Internet. Facing a virtual screen constructed with image data provided by collaborating with the National Institute of Culture, participants come to have the experience of penetrating into cultural data as if digging an actual tunnel toward each region. Participants perceive that screen images on the wall change whenever they step on sensors installed in the floor. The images on the screen respond to the participant's movement, creating an optical illusion as if a hole opened up in the center. By moving their body around on the sensor to dig up text on the screen, the participant watches the screen change according to their movement. It would feel somewhat trite if the work ended by relating simple reactions to the behavior. However, the work was designed such that participants who interact with images may dig an image tunnel and ultimately talk with other in a certain strange place in real-time. They come to face each other after penetrating the layer of screen images and digging together at either end of the tunnel. It is only possible for participants in either city to meet each other when the work is exhibited simultaneously in at least two cities. Participants can only meet each other at the opposite side of the tunnel after removing the cultural image from the other side. This means that an opportunity to talk with someone who actually exists is only eventually attained after the virtual space forming the layer of cultural images is removed.



Figure 24: Maurice Benayoun, *Art Impact, Collective Retinal Memory* (2000)

Benayoun, who refuses the existing appreciation of artwork used to be very personal, mainly intended this work to elicit actual conversation through considering both “human–human interactivity” and “human–computer interactivity.” He focused on the production of a work where several people participate and experience together rather than one appreciator interacting with one work. He intended to amplify the experience with the work by producing a work that overcomes participants’ age, sex, and language barriers. Benayoun’s *Art Impact, Collective Retinal Memory* (Figure 24) is a work in which interactivity was actively experimented. Benayoun took camera pictures of Avignon in Southern France from various angles and the combination of the pictures made the whole Avignon. The pictures are presented to spectators selectively through binoculars. The pictures they view through binoculars coincide with the landscape they can see by looking in the actual situation. Images appreciated by individual spectators are projected again on a large 3 x 12 m screen that acts as the retina on which the images fall. An individual spectator comes to see that the photograph falling on their retina is focused on one part of the screen. Photographs that other spectators see through binoculars also appear on the screen. A number of different photographs appear on the screen and the

segmented pictures can be reconstructed. At this time, the screen acts as a collective retina that extends the visual function of an individual human being. The screen shows a 360° scene that cannot be seen with human eyes in one sight. The screen also shows images watched by people who are connected via the Internet alongside those of on-scene spectators. Even images of people who watched photographs online and offline before remain on the large screen. Traces of participants left on the common retina are mixed, erased, and reduced to create new images. Through this process, the original image of an object disappears leaving only a succession of ever-changing fluid images. An image falling on the common retina is unstable and heterogeneous unlike the clear and fixed image of a particular region in Avignon and it gives the impression of drifting due to the lack of connection between images. However, we know that an image reflected in the common retina is closer to that inflected in an individual's retina. Benayoun both dissolved the frame of modern thinking by accepting interactivity in his work and emphasized contingency to the exclusion of narrativity. In particular, his work had spectators play an essential role in its completion. In this work, spectators become both accomplices and participants.

I paid attention to the fact that Benayoun's works construct spaces of interaction within the mind the reality that a spectator enters into and communicates with others while spectators also become a part or whole of the work, and further reconstruct/recognize anew their reality through a real-time internet network. With the work that makes us meet the real world through artistic work, we are not absorbed in a spectacle at the virtual space of representation layer as we are tricked for a moment. Rather, in it, we learn how to understand ourselves. In other words, in the continuity of our presence, we come to

sublate the discontinuity and ephemerality of experience. We come to meet this discontinuity of artistic appreciation at the extension of actual life perceived by us. This becomes the reason we pay attention to the role of interactivity that leads to the inner layer of a message delivered by the artist, beyond the surface layer of indulgence into mere sensuous play. In experiencing the art of interaction, we face the truth relating to the world. What is experienced and pursued in the work is rather the problem of how true it is and the main purpose becomes a discussion about how well we perceive and recognize anew certain objects and ourselves in artistic work. The deepest essence of re-recognition is not paying attention solely to recognizing anew what we already know, i.e. what is already known. Rather, the joy of re-recognition behavior lies in recognizing more than what is already known. Thus, recognizing and re-recognizing a work at the same time—through which one arrives at the inner layer of a work in one's own way—could become the joy of re-recognition.

However, the reason the above definition is possible even in the uncertain relationships of mutual penetration between work, spectators, and the environment is because the work is divided into systems. For example, in the method of watching fragmented images of Avignon in Benayoun's work, all of what are seen by spectators through binoculars and what are seen non-sequentially through the Internet are systems of watching that are constructed individually and reconstructed in the large-screen visualization system. Structurally connected individual systems operate autonomously and depend on each other; thus, they remain as environment to each other. That is, the systems construct themselves while creating and maintaining differences between themselves and their environment.

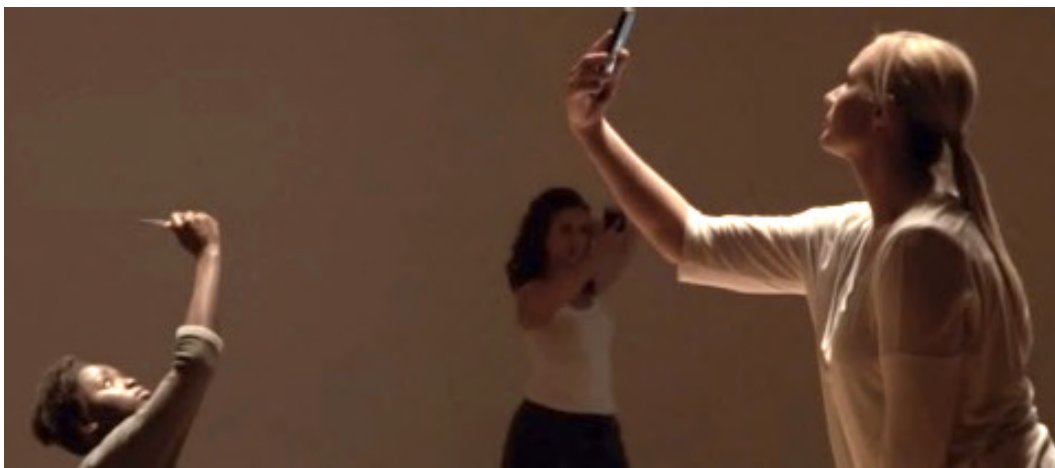
At this time, systems use their own “boundaries” to adjust the differences. The boundaries separate and unite the systems and environment simultaneously, not marking the severance of relations, and if the boundaries are clearly defined, elements are allocated to either the systems or their environment. The concept of boundaries that enable systems and the environment like this have something analogous in common with “interface,” that is, the point of contact that mediates between a technological device and a user. Like the boundaries between a system and its environment, the interface is a surface that divides and connects different areas. An individual spectator enters a system constructed by the artist through the interface. At that time, parameters that are latent between the spectator and the actual place image vary in their operation and utilization methods according to the interfaces and the constructed visualization system of an image in the work also varies accordingly. Therefore, boundaries between realities, between reality and virtuality, and between virtuality and virtual space are like interface boundaries; in this sense, it may also be explained that spectators exchange with the interface of the world rather than with the work. Then, it can be seen that the boundaries that divide elements into systems and the environment and connect them, i.e. the interface, is an essential prerequisite for the intersection of a work and audience as a system and environment to each other and the formation of the response system–environment–work complex.

For the production of my new interactive media art, I planned to construct both real-time and non-real-time interface systems using the Internet, and tried to elicit re-recognition about digital communication methods from my work based on various experiences

closely connected with everyday life by actively using smartphones that are already familiar to spectators in their daily lives. The smartphone, which is a small computer, enables the use of diverse applications and basic functions of wireless communication and internet surfing; it provides diverse functional and playful experiences such as sharing everyday life with others through Facebook and Instagram, navigation and actual location search as in Google Maps and Street View, the use of a camera and a microphone, and more recently, augmented reality. I experimented with methods for new esthetic experiences and the re-recognition of real–virtual networks that are everywhere in our everyday lives by transforming or emulating a number of screens, sensors, and tactile interactions already established between users and smartphones based on the wireless internet connectivity loaded onto smartphones.

– *Nevertheless - Collaborative*

*Nevertheless-collaboration* (2017) is another collaborative project that I produced with the intention of realizing sympathy and communication with the audience. This collaborative work combines modern choreography and improvisational performance using real-time digital interfaces, including smartphones and a projection screen, for real-time data visualization. This 40-minutes-long piece has six sequences, three of those directly involving the smartphone as a performative instrument, and the rest to signify the common characteristics of the screen-user: preoccupied with their smartphone, quietly staring, scrolling the surface. Through this collaborative work, I intended to express the common characteristics of a young generation surrounded by digital screens and to recreate the existential crisis of that generation through the smartphones lens. The method for creating an interface between the performer and the audience based on timely progress is also important for interactivity in this work. This is because it is possible to provide presence and simultaneity to an audience by creating a non-linear scenario and transforming images and sounds in real-time to program the interaction. Therefore, in this work, dancers interact with their smartphones and broadcast the audiovisual data in real time, in the forms of selfie and voice. These are collected via a face recognition algorithm and processed and visualized on the projection screen. The mundane use of smartphones on stage finds the point of agreement where the audiences sympathize with the dancer's sensorial experience and response. Furthermore, audiences can see their representations in the same light as the dancer's selfie videos are broadcast in real time, while looking at



*Figure 25: Nevertheless - collaboration (2018)*

the projection screen and the dancers in the performance simultaneously. The dancers also use their smartphones as microphones in turns to transmit their voices, which are modulated and amplified through the digital interface. The dancers' voices are overlaid and played repeatedly until the end of the act, while the dancers repeatedly perform gesture-based movements, like the ones from the rite of passage, in sync with their looped voices. At the same time, a fourth synthesized voice emerges, which results from the modulation of the three human voices. The combination of all components contributes to the act being perceived in polyvocality. Here, selfies and voices, delivered



*Figure 26: continued*

in real time through the medium of the smartphone, find a new mode of affirmation from the audience as it mimics their mundane activities.

As for the screen, it is not a screen that delivers information by simply visualizing narrative—that is, a TV screen—but the screen as Internet. The screen as Internet shares amusing and artistic experiences that use all human senses and involves the coexistence of the subject and object of experience. In the end, the screen does not try to maintain its original mode of delivering the narrative, and the audience no longer seeks to perceive it

as an informational image. That is, the screen comes to be perceived as a practical thing, a visual-effect: the vague convergence of virtual reality and actual reality. Audience can also feel playful based on the contingency of the combination of extempore performance and transformation of the images via real-time interfaces. Given that real-time images and sounds provide the audiences with an experience of familiarity through the representation of realism. This work was significant for the development of interactivity because it induces, rather than drama, an aesthetic experience in the audience by showing the very phenomena occurring presently before their eyes, and it creates the concept of an economical and new stage background to maximize the expressivity of the new media art through the grafting of real-time interface.

– *Nevertheless – Interactive*

Another use of smartphone interface can be found in my interactive installation, *Nevertheless - Interactive* (2018) For this work, I designed a web-based interactive interface to raise the awareness of temporal visibility and recognition of social media and broadcasting media users by reconnecting fragments of their spatiotemporal existence. The viewer may join the web interface by scanning a QR code situated in the exhibition space. The web interface asks for access to the smartphone's front-facing camera; then, it shows the user's face at the center of the projection screen, which mirrors the smartphone screen. At the same time, each participant's face is sequentially stored in one of the cells on a visual grid that fills the rest of the projection screen. The visitor first encounters the grid without knowing its purpose and use, as a collection of past and present participants

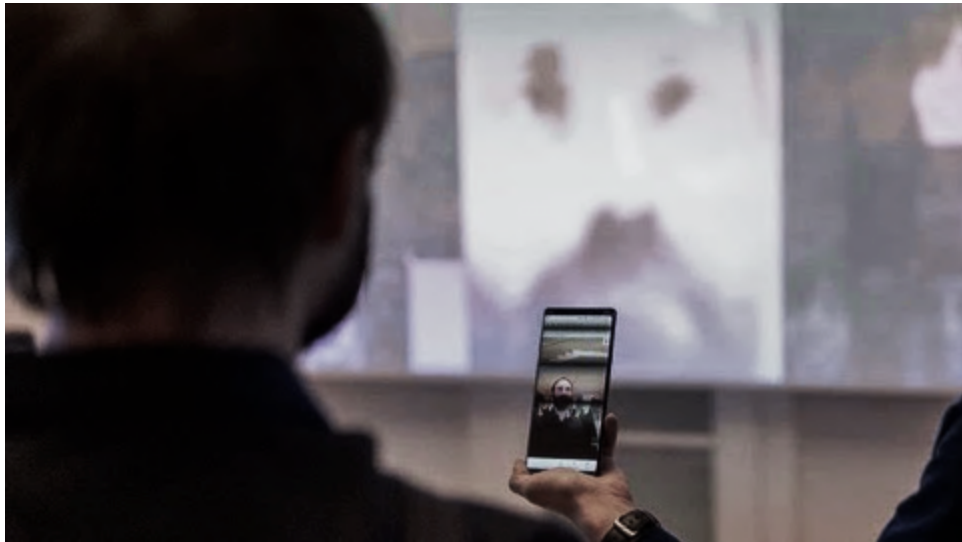


Figure 27: Nevertheless - interactive (2018)

on the web interface. Additionally, at times when no participant is connected, the central cell shows a looping animation of morphing faces from the other cells. (see Figure 27) Some audiences choose to observe the faces of others from the controller's viewpoint rather than being part of the database and recording their presence.

The visitor having to navigate this on their own is central to this work, which aims to encourage experiences of the introspective nature of the user-interactivity. Without instruction or purposeful narrative, this work intends to pull and tug at the viewer's perception to shape the visual experience. This piece, which makes all spectators part of the work, offers itself as the experience of a mechanical device arising from the spatial experience of temporary immersion, as well as a multi-layered experience arising from the inclusion of a self-reflective narrative of strolling nomads in the digital era. It can be said that the immediacy and simultaneity of the participants' appearances, which are instantly transmitted to the screen via the web interface, has the function of a mirror. The smartphone screen becomes a kind of mirror, and this implies the arousal of narcissism. As if this work operates as an imperfect storage-device that repeatedly and continuously stores and deletes its data, audiences imagine and discover their shapes reflected together in a mirror, the temporal images of people who connect (or once connected) to the interface. Augmented by the virtual grid, the audiences secure visual perception and temporality and come to have temporary (therefore, more immersive) but mutual experiences while moving around the virtual and real spaces as visitors. Furthermore, aside from experiences for themselves, they also contribute to experiences for the other people who share the space with them. In this work, the audiences become accomplices

as well as participants. However, this interactive work needs to be judged based on aesthetic criteria, in other words, by analyzing the coherence of its form, and then the symbolic value of the world it suggests to us, and the image of human relations reflected in it.<sup>12</sup> Therefore, I can confirm that this work is not a complete piece, it's rather a social critique to the spectator's passivity where the streaming culture operates as a communication barrier.

For contemporary people, virtual spaces are no longer separate from reality but coexist with it. Some activities that happen in cyberspace through Facebook or Instagram are based on real offline relations and reinforce or extend these relations. Given the mode of distributed and synesthetic perception and the changing and extending communication system between humans and other objects, artworks that reflect such characteristics are needed to elicit empathy and participation from spectators who live in a period when the virtual world is also recognized as reality in human life. The interactive media art, for which technology becomes more significant, provides a synesthetic perception experience different from former artistic experience and is an arena in which the meaning of the body as an interface that connects the world and perception can be explored. I think that it should also provide an environment for experimenting in the communication system in which such bodies interact with each other.

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<sup>12</sup> Nicolas Bourriaud, *Relational Aesthetics*, 2002.

*“Interruption, incoherence, surprise are the ordinary conditions of our life. They have even become real needs for many people, whose minds are no longer fed by anything but sudden changes and constantly renewed stimuli. We can no longer bear anything that lasts.*

*— Paul Valéry*

### 3. I hear a tree in the wind at night

As my interests are on the connections between people, objects, and something unrecognizable in these assemblages, I find a high charge of sensorial ambivalence in a variety of appearances driven by a stimulative media in accelerated time and disappearing space. What I see is full of artificial strength; a condensation of figures and dissonant echoes that are driven by too much celluloid, too many words, too much time, being devoted to nothing of interest. Nevertheless, artists have to draw the world at all times, creating events by chance and accident, despite the loss of time and the disappearance of beings. Marcel Proust saw that the very impulse of art is fastest of all in terms of the speed at which information is input from the outside to the inside; thus, he attributed the strength of his emotion not to remembered incidents.<sup>13</sup> The environment opens toward the other and differences through accidents, breaking away from ubiquity. Everyone can live in their own time and no-one else's time due to the unstable structure of mediated time; this impulse means the declaration of human freedom. Then, can an artist create an accident in contemporary society in which the concept of space considerably disappears and speed almost represents simultaneity? According to Paul Virilio, the "accident" (Virilio 1999) in art is that which renews our perspective on the world. He called the accident in art a profane miracle or illumination (Lotringer and Virilio 2005:63). The reason why the accident opens up this possibility is that something important that could not be recognized without the accident appears suddenly because of it; therefore, the accident is also a revelation.

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<sup>13</sup> The Project Gutenberg EBook, *Swann's Way, Remembrance of Things Past, Volume One* by Marcel Proust [website], <https://www.gutenberg.org/files/7178/7178-h/7178-h.htm> (accessed 3 March 2020).

I intended to develop my dissertation project to be an “accidental machine,” produced out of a reflection on speed, the disappearance of space, and further thinking about the change of perception in art.

a) Dromology

Contemporary people are impatient to save time; however, at the beginning of the world there was only slowness. People adapted themselves to nature and did not strive to be masters of time. When the sun rose, they worked, and when the sun set, they stopped. Then, at some point, speed became a virtue. The German poet Heinrich Heine captured a moment when traditional space-time consciousness suffered a disruption. When a railroad was opened between Paris and provincial cities in 1843, he described the horrible sensation that was felt.

*What changes must now occur, in our way of looking at things, in our notions!  
Even the elementary concepts of time and space have begun to vacillate. Space is  
killed by the railways, and we are left with time alone... [The railways] only serve  
the points of departure, the way stations, and the terminals, which are mostly at  
great distances from each other... they are of no use whatsoever for the  
intervening space, which they traverse with disdain and provide only with a  
useless spectacle. (Heinrich Heine, as cited in Schivelbusch, 1978:31-40)*

He remarks on how railways open up and present new opportunities for the use of space, but in this way destroy existing space.<sup>14</sup> The railway, only knowing arrival and departure times, which means punctual timetables, also changes cities into points, instead of expanding them spatially. In turn, those points are connected by a diagrammatical railway network, almost mapping the territory. This conception of space has nothing in common with the conception of an enclosed space, defined by borders. Within this space, only points and directions count, not the emptiness of the room and what is around. Hence, the focus here is on a space not affected by borders but by relations.<sup>15</sup>

Accordingly, these spaces between destinations, the traditional travel spaces, disappeared, and the destinations approached and collided with each other. These destinations have lost the here and now of the past. They used to be defined by intermediate spaces between them. But the isolation that used to generate spatial distance between places has been erased. People like Heinrich Heine saw the sublime objective of technology in the disappearance of time and space. However, our discourses on history remain in the culture based around the common concepts of time and space, while cultural transformation consisting of new readings of time is occurring at the same time. All about us, the external evidence of unique time has been destroyed by the unprecedented railroad maps created by the individual traveler's imagination.

Starting from thinking about speed that works as a connecting point between time and space, Virilio sought to grasp the changes in everyday life and the workings of power

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<sup>14</sup> Mapping Paris Railway Transportation Comes to France!, Web.  
<https://www.mtholyoke.edu/courses/rschwartz/hist255-s01/mapping-paris/Railroads.html>

<sup>15</sup> Beatriz Colomina, *Privacy and Publicity Modern Architecture As Mass Media*, 1996, pp.47-50.

through the concept of “dromology” (Virilio 1978:47), which regards spatial disappearance critically, as speed is not merely a matter of overcoming distance or the rate of dissemination and retrieval of information, but also a matter of mobility, the perception of the visual world, the construction of time, how we measure value, the synchronization of everyday life, and how people are disciplined within the political economic order.<sup>16</sup> Today’s world sees a tremendous development in traffic speed, and thereby comes to be unrestricted in space and time. Virilio refers to the phenomenon where actual space and regions become meaningless due to speed as “deterritorialization”<sup>17</sup>, and uses this as a way of grasping place. The development of transportation means has made it possible to travel long distances quickly. This change is often seen positively; however, Virilio understands it as the disappearance of the life space between self and the other. Only the beginning and the end have become important; the journey has become unimportant. That is, spatial restriction and actual space are extinguished by the increased speed of transportation means, thereby achieving deterritorialization. To Virilio, deterritorialization is associated with acceleration, and it evolves within the visual world that follows the law of motion, and within the world that creates the inertia of speed. Remote real-time communication enabled by the development of the Internet and of high-speed transportation such as the airplane appear to be technological capacities related to different dimensions, but they are the same *speed machines* in that they fundamentally change the spatiotemporal relationships between us

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<sup>16</sup> Bob Hanke, *Transforming McLuhan Cultural, Critical, and Postmodern Perspectives, chapter 10: McLuhan, Virilio and Speed*, 2010, p. 204.

<sup>17</sup> Deleuze and Guattari used the term ‘deterritorialization’ of capitalist urban space in *Anti-Oedipus: Capitalism and Schizophrenia*. Virilio argued the militarization of urban space leading to the deterritorialization of the modern city under the sign of speed, or ‘chronopolitics’. (*Paul Virilio: From Modernism to Hypermodernism and Beyond*, ed. John Armitage, 2000:3)

and things through acceleration. Now we have suddenly shifted from objectivity in the real space and obtained from the original position to the real-time “teleobjective” (Virilio 2007:20) resulting from acceleration. He argues that in times of ubiquity and instantaneity, the right to sedentariness in one’s place of origin is compromised by telecommunications’ prioritizations of real time over real space and the ensuing effects of globalization, and by the multiple environmental, political, and social consequences of advanced technologies.<sup>18</sup>

When the body is identified with the world itself, contemporary people actually do not try to see any longer, but only want to be seen by mobilizing all means of audiovisual telepenetration, within the logic of closure whereby inside and outside are indistinguishable from each other. This madness has become reality through the ultimate idolatry of the world people’s identification of the world itself with the human body itself and various realistic artificial devices of human intellect brought by the dramatic progress in new technologies. Using the intelligence of the computer as an internal prosthesis, within a short time we have shifted from an assistance device in the form of a body which hardly moves, particularly in terms of senses, to an assistance system that acts, and the sublime comfort that endangers both dimensions and representation at the same time. Virilio further contemplates the possibility of human habitation without movement in his book, *Politics of the Very Worst*,

*... the question of domestics is related to both the questions of inhabited space or the habitation—“house”, “dwelling”—and that of the relation to the body of the*

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<sup>18</sup> Virilio Dictionary, pt. ‘Sedentariness’, Josiane Behmoiras, ed. John Armitage, 2013, p.171.

*inhabitant ... The human body is the reference for its habitat. The ergonomic dimension of the body must be taken into consideration in the habitat. However, the new technologies make habitation possible without moving. With domestics, it's not television channels that are zapped but rather the lights, the heat and the opening of the shutters. You don't have to go to the window to open it, just zap it. So there is a kind of reference to a handicapped body and no longer to a locomotive body. The over-equipped able-body of domestics, the one that experiences home automation, is the equivalent of the equipped invalid. (Virilio 1999:66)*

Now, after the decline of the three stages of mobility (i.e., departure, travel, and arrival), even the departure disappears. All is nothing but arrival, but even what arrives is not I. Only world information of a real-time dimension arrives according to the logic of speed. The loss of free will caused by absolute speed becomes an accomplished fact. Through the concept of “polar inertia” (Virilio 1999), Virilio describes speed-of-light society where travel or movement becomes unnecessary because one already arrives before departing. In Virilio’s term for live video transmission, both related to, and distinct from, telescopy and microscopy. The image filmed in one place and then seen in another place instantaneously through transmission via optical fibers or radio waves results in the “constitution of an instantaneous, interactive ‘space- time’ that has nothing in common with the topographical space of geographical or even geometrical space.”<sup>19</sup> What becomes important is not “being there” but “being now”; put differently, “being now”

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<sup>19</sup> Paul Virilio, *Polar Intertia*, 1999, p.58.

delivers all that is desired.<sup>20</sup> Absolute speed makes us think about nothing, feel nothing, and reach a state of indifference. Although knowing that supersonic vehicles and real-time network technology lead the animal body to death, we are actualizing polar inertia. What the motor creates is movement toward breaking away from an individual's eyesight. Conciliation between nothingness and reality, and the disappearance of time-space caused by speed, changes the vastness of endless travel into a vast emptiness. Virilio quotes, "the speed of light does not merely transform the world. It becomes the world."<sup>21</sup> Humans now make their other selves, namely, their own intelligent ghosts, and entrust them with the knowledge they have so far accumulated. Thus, we remain in a moving phantasm, and in the mirage of high-speed information on the computer monitor screen. The content given is information, not sense. The repetition of information further disturbs the stimuli of observation, for the dynamics of stimuli are automatically obtained at high speed from the eyesight, not from memory. Thereby, it becomes important to have information on the monitor screen, not to store information.

Mass culture closes our eyes and mouths in front of mass individualism that stands firm centering on narcissism, and mass media blinds us, not making things visible. Virilio perceives postmodernism to be a flattening of forms into homogenous mass that produces apathy and a waning of the affect.<sup>22</sup> As a result, our sense of touch, which gets scorched and sticks to the powerful engine that generates tremendous acceleration, becomes dull, and our sight is concentrated on a single point; at that moment, the boredom of everyday

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<sup>20</sup> *Virilio Dictionary, P: Polar Intertia*, Gregor Schuner, ed. John Armitage, 2013, p.147.

<sup>21</sup> Paul Virilio, *Virilio Live: Selected Interviews*, 2001, p.185.

<sup>22</sup> Graham Matthews, *Ethics and Desire in the Wake of Postmodernism: Contemporary Satire*, 2012, p.127.

life is replaced in mass culture by an illusory experience. This illusory experience is a temptation that has such a strong fascination for us that it controls our unconsciousness as well as our ordinary consciousness. Virilio investigates how media reorganizes perception and what meaning this reorganization of perception has, and he discusses the changes in the perceptual system in connection with speed. Saying that images have been fragmented due to speed, Virilio suggests the new concept of “pyknolepsy” (Virilio 1991) to explain human cognition that perceives such altered images. This is a sort of memory failure, and signifies means the temporary rupture of perception and the absence of consciousness experienced due to fragmented images.<sup>23</sup> Virilio explains pyknolepsy based on a very ordinary experience. In a typical illustration of the new perceptual mode to recognize images altered due to speed. Virilio writes a paragraph below in *L'horizon négatif*, concerning the change of his perception caused by an ordinary vision.

*Suddenly, before me, new objects appeared, bizarre figures cut out, notched, a set of articulations has become suddenly visible and these observed objects were no longer banal, whatever, insignificant; they were on the contrary, diversified in the extreme. They were everywhere, all space, all the world was filled with new forms. They were nested in the hollows of the least forms. It was like an unknown vegetation that grew around me. Industrial objects without value provoked the appearance of objects temporarily given a great complexity. The position of*

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<sup>23</sup> “pyknolepsy, a relative of epilepsy and narcolepsy. The word comes from the Greek root leps- , the future form of the verb ‘to grasp or seize’, and picnos, which means ‘frequency’. Sufferers from the condition undergo brief episodes in which they are unconscious of their surroundings or actions. The term might apply more broadly to what drivers sometimes call ‘automatic pilot’: travelling a familiar route without noticing the time pass, surprised suddenly to find yourself at home without recalling how you got there.” (*Virilio Dictionary, P: polar inertia*, Sean Cubitt, ed. John Armitage, 2013, p.142)

*things triggered new exotic forms, forms that escaped us despite their evidence. Accustomed as we are to trivial geometries, we perceive perfectly the circle, the sphere, the cube or the square, we perceive infinitely less well intervals, the interstices between things, between people. (Virilio (1983) 1987:18-19)*

Besides speed, another cause of pyknolepsy for Virilio is “the vision machine” (Virilio 1994), an optical machine that makes something that does not exist seem to exist. This indicates that what used to be impossible to see with the naked eye, such as speed and movement, becomes visible due to the intervention of machines; that is, in modern times vision and machines are gradually integrated into one. This means that there are cinematic effects of disappearance based on time in today’s vision and perception mode and that the technology of dynamics generates the aesthetics of disappearance. Thanks to the projector, all things entered the visible world and were vividly revived, and vision began to dissolve. The illusion of a moving train, first projected on the film screen, is regarded as the truth of vision as if the illusion of vision represented the illusion of life. This magical art brings to the audience ecstatic euphoria and the unknown sense of 4D simultaneous ubiquity, extinguishing space and time at every moment. At a moment of inertia when we already arrived there without leaving here, the speed light of liberation actually liberated us from travel at the price of prudent patience in this world. The world was a world we arrived at without break, and a world we waited for incessantly. The truth of the new vision changed the rhythm of life. Even before a movie began, the audience conjectured about what would happen, and the climax disappeared. Eventually, the audience had only to follow sequences on the screen with their eyes. Speed treats image

as a primary substance and produces new memories, untrue traces, and supernatural traces, rather than images.<sup>24</sup> Thus, seeing shifting scenes outside the train window, as if seeing scenes through the train window, made a train car or airplane a film viewing room. A railroad train, a car, a jet plane, a telephone, a television, etc.; our whole life passes by through these acceleration travel machines that we are not aware of any longer. Virilio squarely faces a world in which science and technology accelerate toward disappearance beyond the reach of our perceptual action, as seen in the microminiaturization and supersizing tendencies that have broken away from actual sizes. The supersonic development of aviation, aeronautics, and astronomy resulted in the internalization of the sightline of the Earth from the atmosphere rather than from the atmosphere to the earth. And I, a fixed, superficial, passive and adaptive being sitting in front of a TV monitor, a telescope for the home, am reduced to an insensitive subject captured by a remote monitoring system, facing the great panic of this colossal representation triggered by the intensity of this fear. That is, Virilio warns us that we who saw beyond reality as a result of the acceleration of daily life came to expect only pupil-dilating and eye-boggling things.

Historically, the continuity of art itself has already indicated this decomposition. It may be said that optical instruments are the points of arrival in which mainstream arts are mixed with one another so as to be lost. Music changes the respiratory and heart rates of

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<sup>24</sup> "... in spite of all this machinery of transfer, we get no closer to the productive unconscious of sight, something the surrealists once dreamed of in relation to photography and cinema. Instead, we only get as far as its unconsciousness, an annihilation of place and appearance the future amplitude of which is still hard to imagine." (Paul Virilio, *The Vision Machine*, 1994, p.8)

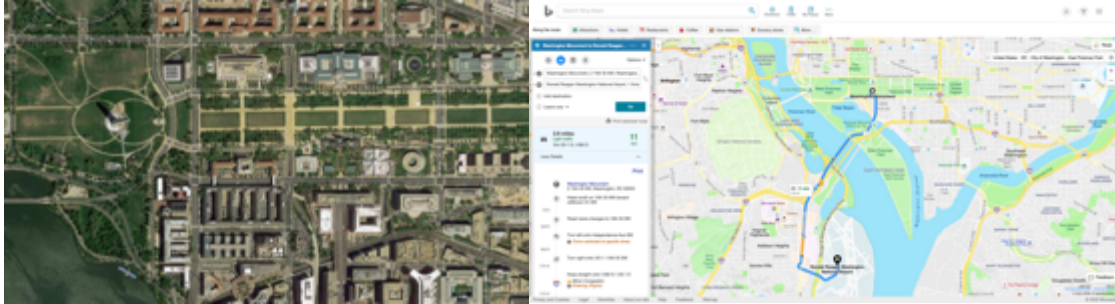
the audience, and the appearance of the conductor of an orchestra performing a symphony shows the special position of the one and only operator who leads performer groups and the audience. In this concert hall, the sense of hearing develops to an extraordinary level, and accordingly, the other movements of the body are invalidated. This culture ultimately creates only voids and deserts because there is nothing but nothingness that can be continuous and thus be an operator.

Without suggesting any conclusion or solution, Virilio's insight makes us face squarely the blueprint of the future with chilled eyes. From Virilio's contemplation, my dissertation exhibition *I hear a tree in the wind at night* (2020) explores the correlation between technology and perception. The work sets out to reconstruct biological and geopolitical anxiety, by pulling out the vibrations and curves of organic life surrounded by infinite mechanical apparatuses. For this, the exhibition aimed for the sensory disagreement of signals in the semantic network of signs, ambiguous materiality in automated texts, noise in voices full of meanings, and ultimately disturbance itself.

## b) Process

In addition to the performed experiments that are introduced in previous chapters and referential understandings of my artistic interest, I have performed additional research and practice to construct the foundation of my dissertation work. I intended to design a system in which everyone can be a participant and accomplice to operate and evolve my exhibited work. Although the exhibition is situated in a physical location and gallery space, visitors can access my work from all over the world via the Internet. This was progressed to construct multiple prototypes that involve a networked system with both physical and digital interfaces for a full-scale user-experience and user-interactivity with real-time data parsing and visualization of geolocational information, and found footage archiving using a database. With a plan to design a system as an entry point through which visitors can access my work using their smartphone's internet connection and to collect visitors' geolocational information as a core resource for the work's operation, an interactive web-interface hosted on the Internet was necessary. Therefore, an additional understanding of Web 2.0 and API are required.

Social needs to select and acquire necessary and desired information based on "where I am" continue increasing in the middle of this information flood. Now, geolocational information has significance as infrastructure for the implementation of a Web 2.0-based system. Web 2.0 is an abstraction rather than a predefined term and refers to the progression of networking, meaning the structuralization of the Web. Originally, the Web meant a network of databases in which objects such as HTML and images were linked by



*Figure 28: Google Maps. (n.d.). Satellite View over Washington D.C., Map Data ©2020 Google. Retrieved May 10, 2020, Bing Maps. (n.d.). Directions between Washington Monument to the Ronald Reagan National Airport, Directions Data©2020 Microsoft. Retrieved May 10, 2020, Screenshot by author.*

hyperlinks. However, not all information in the existing Web is linked on the network, so users should acquire data from within that provided by service providers instead of information needed by the users being provided. Web 2.0 is intended to solve this problem and provides a platform on which users can select diverse services and information. It now enables the search and provision of customized information through more intelligent services in a stabilized Web environment. Showing the above changes in a representative way, global IT companies like Google and Microsoft are currently providing Web-based 3D geolocational information worldwide. The Web environment that enables searches for information about the surroundings anytime and anywhere creates natural demand for detailed information about a location or region, and maps are central to this. Microsoft and Google provide services of a satellite image-based internet map of information comprising the whole world, and other companies also provide various charged or free regional information services. What claims our special attention in this Web environment is that a “mashup” can easily be created by combining internet maps with user-created photos or videos and diverse functions based on open application

programming interfaces (API)<sup>25</sup>. That is, various types of web-based applications utilizing geolocation content have now become possible.

In connection with map API services, services such as Google Maps API, Bing Maps REST, HERE, MapQuest, and OpenLayers are used frequently worldwide. These map APIs provide the basic elements of maps such as a 2D base map, aerial images, satellite images, and range functions such as route guidance services including wayfinding, public transit wayfinding, bicycle roads, and pedestrian navigation, and point of interest (POI) searches. These elements and information are easily merged and serviced on smartphone applications and websites via a map API. Noting that geolocational information is constantly transformed on diverse platforms for specific purposes and used for diverse real-life esthetic experiences beside street navigation, I decided to appropriate it variously in my work.

Another research topic regarding POV has been recently used and shared in various ways. POV has evolved into diverse uses for immersive experiences and greater control precision. Its most well-known uses are first-person shooting (FPS) games and virtual space experiences via a Virtual Reality (VR) headset. For realistic experiences and spatial presence in a game environment, the gamer's viewpoint is identified as a game character's viewpoint, which may also bring further effects of sharply reducing physical and psychological distance in interacting with other players or objects, or in spatial

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<sup>25</sup> An open API (often referred to as a public API) is a publicly available application programming interface that provides developers with programmatic access to a proprietary software application or web service. APIs are sets of requirements that govern how one application can communicate and interact with another.



*Figure 29: Screenshots of POV(Point-of-view) Videos on Youtube taken by author ©Creative Commons, 2020*

perception and narrative acceptance. In particular, this attribute of POV is usefully employed in precise machine operation or medical practice, mostly for simulation. In various visual media, images are produced and utilized in extended length without editing to provide real-time properties and highlight the authenticity and presence of content; here, POV also brings the effect of enhancing immersion. Despite these positive effects, it has problems in that viewers become passive to visual stimuli because their vision is replaced by the viewpoint of image, and other subjective and physical perceptions are invalidated. I searched for many POV driving videos on the Internet. From those videos, I was fascinated with the immersion experienced by viewers as if they were moving through physical space in real-time and also became drawn to an intuitive comfort as if going on an actual trip without obligation to any spatial consideration or anxiety related to driving a car. I decided to maximize the use of these characteristics of POV driving videos in my work and archived videos showed the front windshield view and drivers' operation well.

The system of my dissertation project was fabricated based on the open-source software MaxMSP, PHP (Hyper-text Preprocessor)<sup>26</sup>, and MySQL<sup>27</sup> database, for the implementation of a user-centered system that is not centered on the service provider. For the geolocational data used in this system, no separate design was implemented because it interlocks with Google Maps; however, the fields of latitude and longitude coordinates were added to the MySQL database to visualize individual geolocational information on specific items such as satellite coordinates. This work did not use GPS location tracking to prevent a cumbersome procedure for confirmation that would require visitors permit GPS tracking and visitors' possible repulsion over privacy concerns. Instead, the IP address<sup>28</sup> of visitors' smartphones/computers was collected, which actually provided the geolocation of the connected regional router from the Internet Service Provider (ISP) and did not require any additional confirmation procedure from visitors. I adopted this because the substitution of IP address for visitor's actual geolocational information corresponded to the concept of the work and I regarded it as adding an interesting layer to the work. I have developed a medium-size database in MySQL and a database access webpage in PHP. In addition, I have actively employed various types of open API from Google Map/Street-view, Bing Maps (Directions), IP-API (IP address analysis), and

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<sup>26</sup> PHP is a server side scripting language that is mostly used to develop Dynamic websites or Web applications. (Web. [www.phpchandigarh.com/training/php-interview-questions-and-answers-pdf/](http://www.phpchandigarh.com/training/php-interview-questions-and-answers-pdf/), accessed 10 March 2020.)

<sup>27</sup> MySQL is a relational database management system based on SQL – Structured Query Language. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications. The most common use for MySQL however, is for the purpose of a web database. (Web. <https://2medesign.com/>, accessed 10 March 2020.)

<sup>28</sup> An Internet Protocol address (IP address) is a numerical label assigned to each device connected to a computer network that uses the Internet Protocol for communication. An IP address serves two main functions: host or network interface identification and location addressing. (Web. <https://en.wikipedia.org/wiki?curid=14921>, accessed 10 March 2020)

N2YO (Satellite tracking) to parse multiple geolocational data in JSON format for various visualizations over multiple interfaces.

The system in this work largely consists of the system management part and the visualization part (see Figure 30). The system management part analyzes webpage visitors' connection information and IP addresses, collects geolocational data and satellite statuses through the open API, assigns "seq" numbers to the table of the MYSQL database sequentially, and stores them. The table information of the online database was synchronized with the computer interface so that additional requests for data collection are not needed. In addition, the system management part plays the role of a communication channel to send appropriate information in case a sub-interface makes a request for "seq" if necessary. The visualization part makes a query whenever the sub-interface needs visual elements such as Google Maps, Street view, or Bing Map Direction requests from the relevant open API by using the GET method, parses the incoming data in the JSON<sup>29</sup> format, and then send them to the sub-interface for visualization. In this work, four sub-interfaces exist according to individual installations, and the sub-interface is largely divided into two areas. The first area composites visualized information received from the upper-interface, arranges it on the screen, and accesses POV video files on the computer hard disk. The second area sequentially shows or deletes video/visualization windows on the screen according to a planned time-sequence. While sub-interfaces conduct networking with the upper interface individually, they send signals to trigger the sequence of other interfaces at the same time.

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<sup>29</sup> JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate.

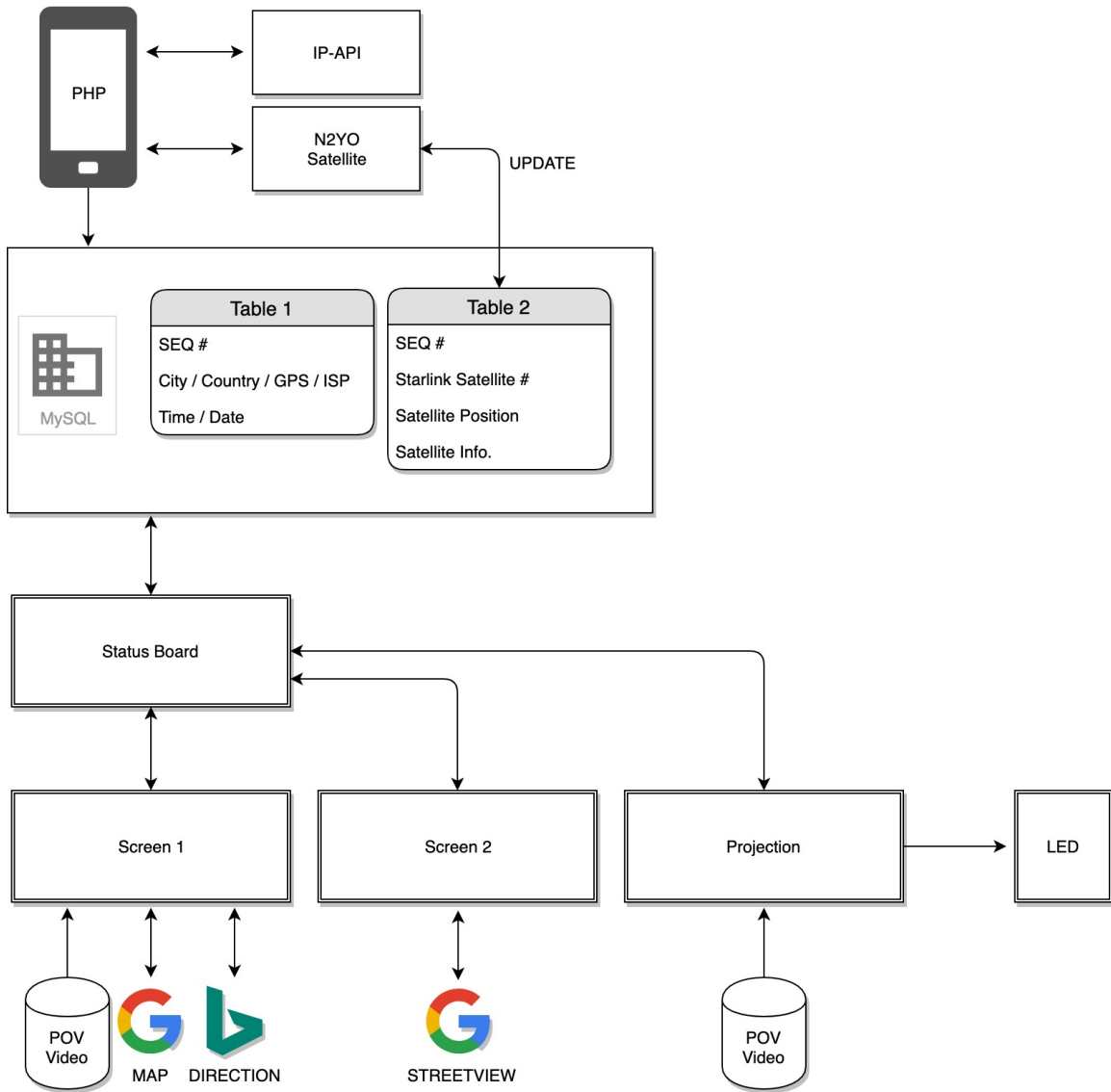


Figure 30: Dissertation Exhibition - System structure

c) Exhibition

– *I hear a tree in the wind at night*

The dissertation exhibition “*I hear a tree in the wind at night*” is comprised of multiple screen placements, a web interface, and LED sculptures. To explain the exhibited work and implemented interfaces properly, I will follow the movements of visitors in the exhibition space and describe what they see and interact with in each part and the whole.

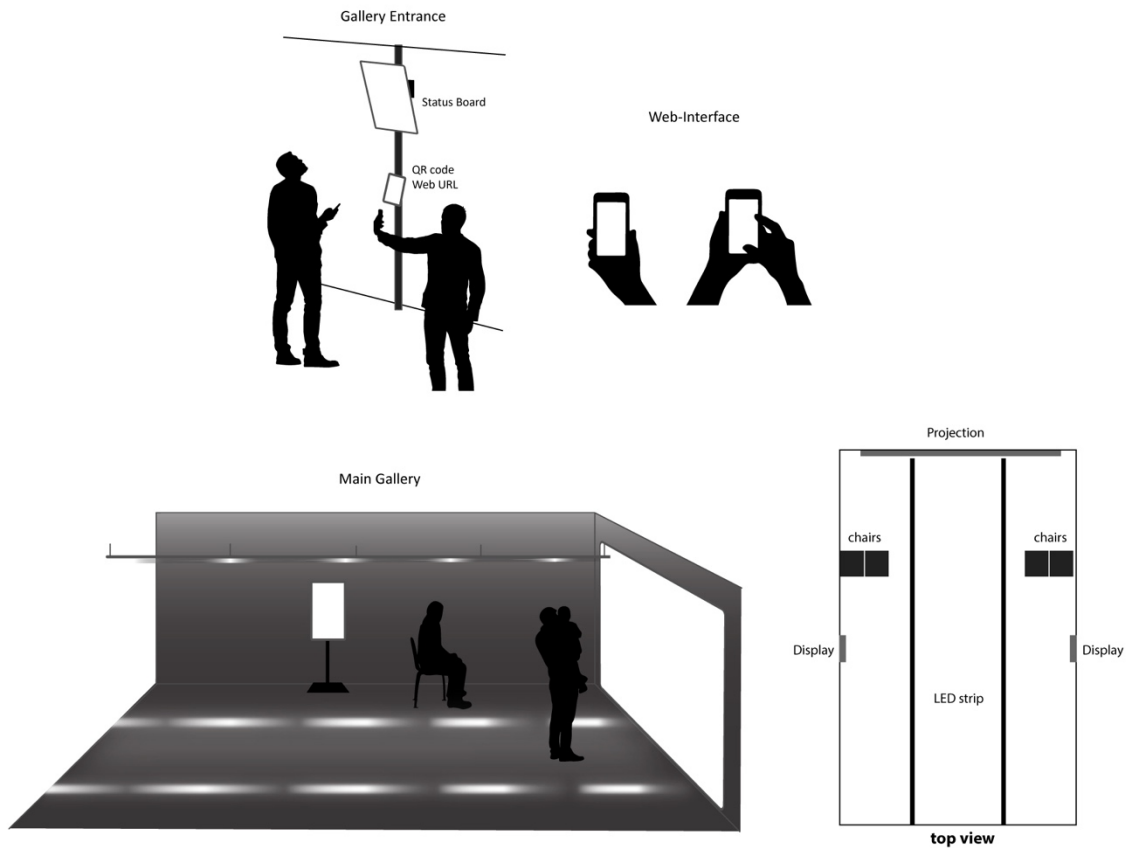


Figure 31: Exhibition Layout



Figure 32: Exhibition Overview

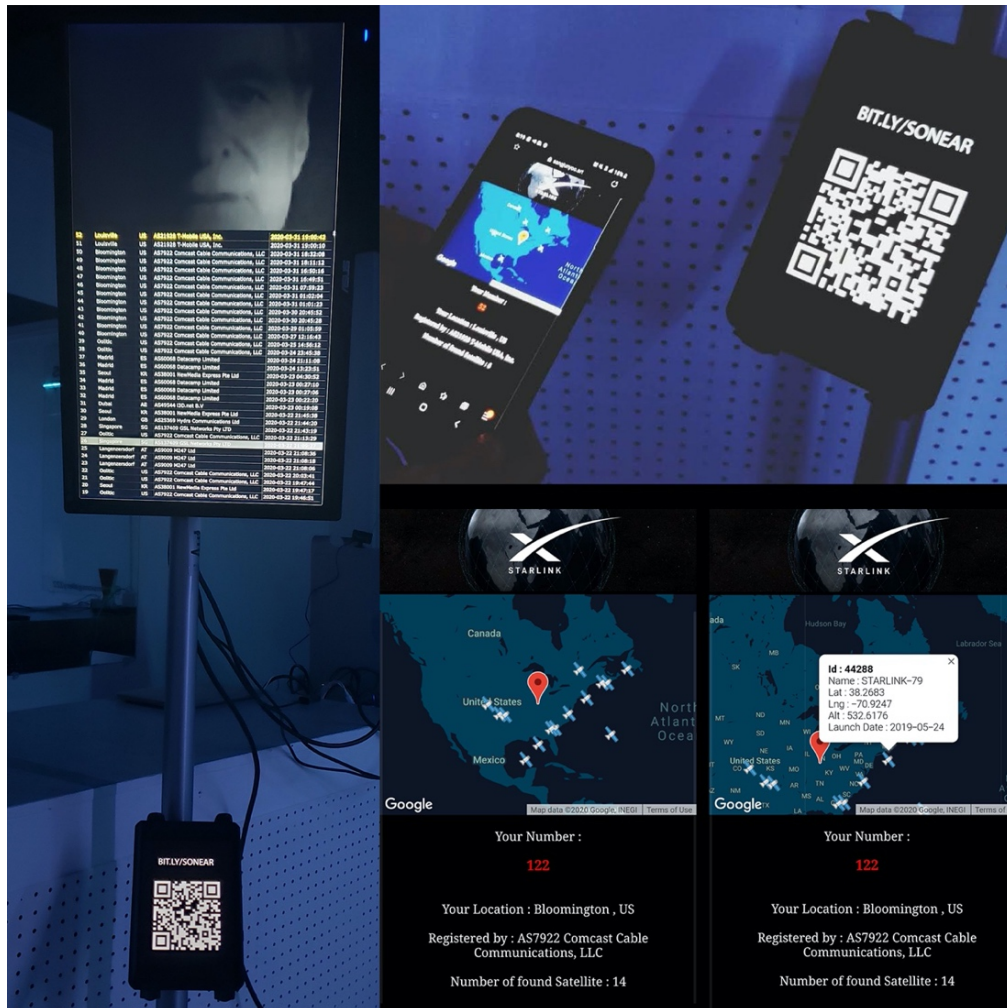


Figure 33: Status board & Web-interface

The visitors encounter a status-board-like screen placement at the entrance (Figure 33). The iPad screen displays a QR code image and shortened web address to hint at the use of a smartphone and the Internet. Visitors access the website using their smartphones by scanning a QR code or opening a website using a web browser. This website is on the Internet, thus anyone on Earth can participate through their local internet service provider. When the website has loaded, visitors see their current geolocation (which is actually the internet router location of the Network Service Provider through their IP address) on a world map along with the real-time position of Starlink satellites above their location. The Starlink is a high-speed wireless Internet service with a net of 12,000

satellites launched by Elon Musk's Space X corporation. These satellites will soon cover most of the Earth's orbit and service the fastest data transfer to every part of the world.<sup>30</sup> In the website's info section, a unique number is given to each visitor that is used over the interfaces and that operates the systems in the exhibition. This number is also a hint for visitors to understand the connectivity between participants and the exhibited work, thus allowing them to associate their physical presence with the visualization of the data presence. The rest of the webpage shows the time and date of participants' connection and the name of the registered local Network Service Provider such as AT&T, Verizon, or Comcast. The website poses as a hypothetical Starlink application that emulates the internet connectivity from the satellites above the participant's geolocation. It can be said that the visitor connects to the Starlink network as an imaginary network carrier to accelerate the local Network Service Provider and the participant plays the role of his own destination, while the viewer engages with the dromoscopic simulation in the exhibition as an audience member.

On the status-board-like screen installation, the visitor sees a log of past and current visitors' connection histories in descending order as if it were an airport flight arrival status board. This data visualization aims to realize one's movement that cannot be reduced to the awareness of its physical, timely appearance; thus, it only results in an arrival within its logical order of speed. Over the list of visitors, various ghostly human faces appear and disappear without explanation. If the visitor chooses to watch that over time, one finds that the faces are from the television screen, showing only the human

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<sup>30</sup> Starlink [website], <https://en.wikipedia.org/wiki/Starlink>, (accessed 10 March 2020).

faces in their context. As the visitor lands on the website, the webpage collects the visitor's IP address to parse their geolocational data (time and date of connection and name of the Network Service Provider) and store the data with a sequentially generated "seq" number in the MySQL database table. The status board displays a list of visitor entries in the database. The status board interface only performs to register a new data entry and port out the geolocational data connected to the seq number as requested by other interfaces.



Figure 34: Screen 1

A visitor walks into the exhibition space with multiple installations composed together. There is no designated path to see the exhibition as each installation is connected into a unitary system of experience.

[Screen 1] (see Figure 34) is one of two facing identical large LCD displays across the exhibition space that is vertically mounted as a standalone sculpture itself. The top of the display is 6.5 ft above the ground, thus encompassing the human scale. From its vertically situated look, the display appears as a kiosk screen in a public space such as shopping mall lobby or airport terminal. Visitors see multiple data visualizations, texts, and a moving image. [Screen 1] has three sequences based on its systematic operation.

1) The interface calls a seq number in sequential order from the status board interface, receives geolocational data for the seq number, and then displays the seq's number and its geolocational data at the center of the screen. At this time, an AI-voice notifies of the visitor's "arrival." The interface calls the satellite-view of the Google world-map using the latitude and longitude of seq's geolocation, visualizes the current locations of Starlink satellites around the geolocation and displays a list of satellites at the bottom of the screen (see Figure 35). Then, white lines appear and connect between the center and the satellites in its periphery, and text appears that notifies of the start of a new sequence.

2) The world map zooms into closer proximity to the seq's geolocation as if the satellite had switched its zoom-lens for a closer look. The zooming stops at the satellite image about 2,000 ft above the ground, showing about a quarter-mile radius circle around the

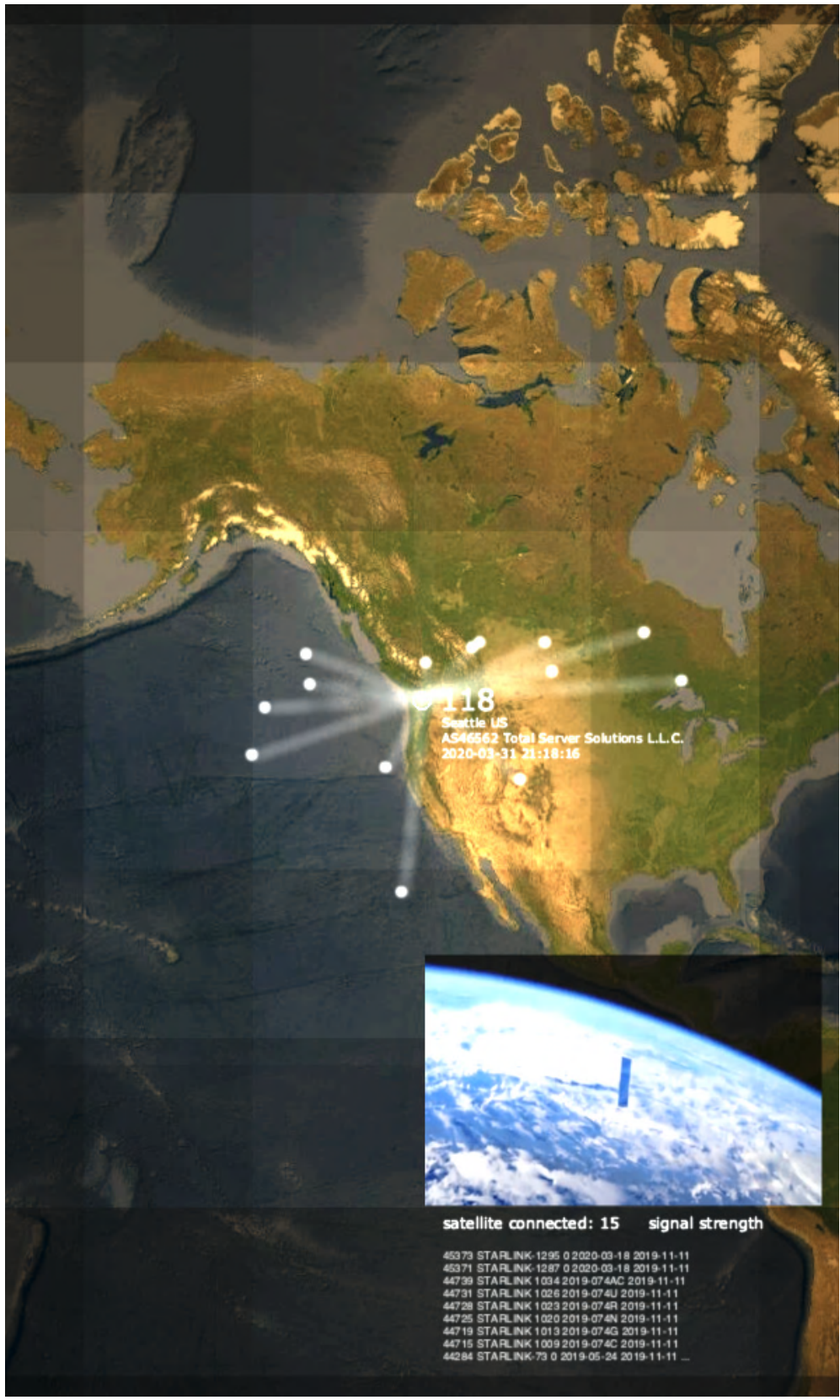


Figure 35: continued

seq's geolocation. Then, a POV video window pops up over the satellite-view map, showing someone driving a vehicle on the road. In the bottom-left of the screen, there is a visualization of the driving route from the seq's location to the nearest airport along with the related information, airport name, distance, and the real-time driving duration based on the current traffic conditions. On the bottom-right of the screen, a simplified version of map showing Starlink satellite location with its list of information for the found satellites refreshes every minute to provide the current satellite status to the viewer (see Figure 36). The POV driving video plays for three minutes and a text appears to notify the end of the sequence as the video finishes.

3) All the small windows on the screen close themselves and the satellite-view map in the background starts to zoom back out to the world map. The interface requests the next seq number from the status board interface and another sequence begins.

To realize the [Screen 1] interface, I have collected 50 POV driving videos online and edited them into three-minute playback videos. Along with the POV driving video randomly opened from the video database, I implemented navigational information with the destination to enforce the narrative of driving and to provide the viewer's spatial understanding and real-time awareness. The driving route from the geolocation to the nearest airport is parsed through the Airport Finder and Bing Map APIs, which provide the shortest driving route to the airport in current traffic condition, airport name, distance, and driving duration. The airport is another point of departure in reality, which is a higher



Figure 36: continued

level of traveling across a physical space and a higher velocity than driving on the ground. This correlates with the [Projection] installation that show POV flight videos.

For Virilio, the screen remains in a metaphorical register, a virtual surface that overrides any specificities of its media formation. Then, he posited a new metaphysics: the screen is the locus of lost dimensions of space and technological transformations over time.<sup>31</sup> It modifies our relation to space and is a surface-mount for its “accelerated virtualization” (Virilio 2000). [Screen 1] realizes Virilio’s accelerated screen. In this data-aided screen, the reflections of traditional three-dimensional space are converted to electronic digital information and visualized in real-time. This finds its highest expression at the viewer-accelerated consciousness. When space-time is no longer experienced, the gap between the original and reproduction vanishes as everything rolls randomly past the car’s windshield. The visual composition aided by navigational information expands the visual perception into a simultaneous movement of departure in which images become temporal and spatial and then vitalized through the fusion and exchange of real-space parameters. The driver's seat is nothing but a landscape simulator. With the help of the steering wheel and the accelerator pedal, the driver will in effect arrange a series of speed pictures that will playfully sneak up on the transparent screen of the windshield.<sup>32</sup>

A large wall projection with seating area is situated in the center of the exhibition space. The wall projection is mapped to fill the entire wall and hide the projector’s presence. In the background of [Projection] screen, a day and night world map centered on the

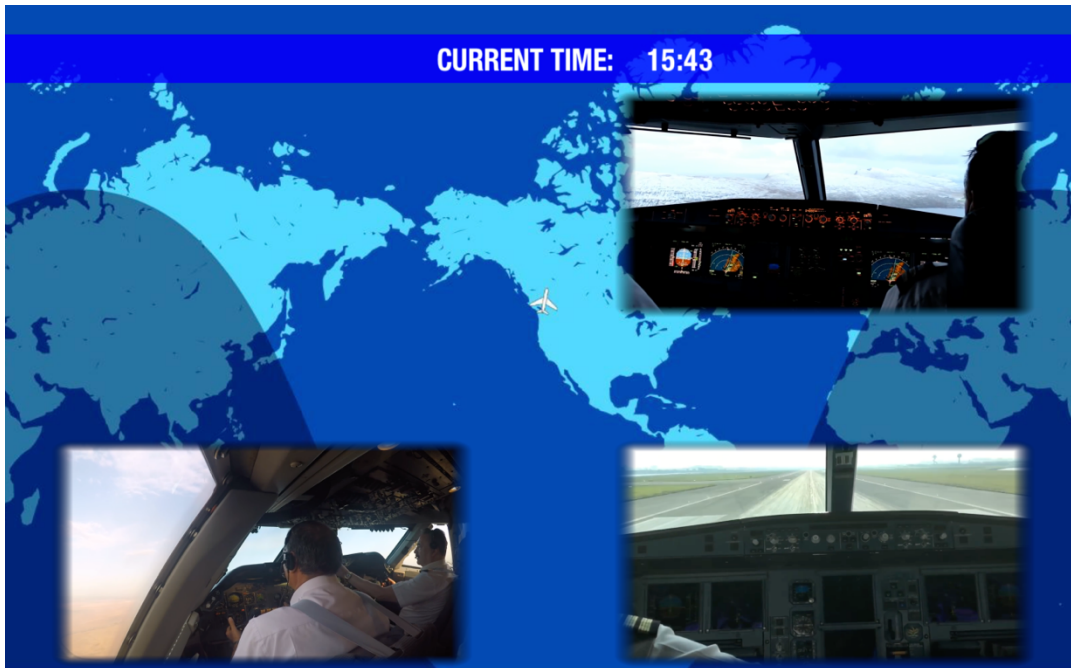
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<sup>31</sup> Paul Virilio, *The Information Bomb*, trans. Chris Turner. London: Verso, 2000, p.16.

<sup>32</sup> Paul Virilio, *Dromoscopy, or The Ecstasy of Enormities*, 1978.



*Figure 37: Projection*



*Figure 38: continued*

geolocation of the current seq number in progress is presented along with its current time. The background simulates an in-flight information screen that shows the current position of the airplane and time zone. Over the in-flight information screen, the interface opens and closes multiple POV videos of an airplane cockpit facing the windshield where pilots take-off and land. For this time, it is a third-person perspective rather than the pilot's. Along with the dromoscopic images on the screen, the voices of airline pilots, AI flight control, Air Traffic Control (ATC) radio transmissions, and alarm sounds simulate the ambiguous materiality of autonomous flight systems, data visualization, noise, and echoes.

To realize the [Projection] interface, I have collected 50 POV flight cockpit videos and edited them to three-minute segments in which all videos' take-off and landing moments are synchronized at the 2'20" timecode. This intends to timely synchronize and amplify

the moment of radical change, the narrativity of the video as a polyvocality, and increase and decrease the audiovisual intensity before and after the flight's ultimate goal.

[Projection] also receives the seq number when [Screen 1] calls the new seq number, this generates the day and night world map from Google Maps with customized scripts by centering the seq's latitude and longitude with an airplane icon. In addition, the calculated current time is displayed at the top of the screen. The screen simulates the in-flight information screen with the augmentation of the cockpit video's spatiotemporal immersiveness. Having this projected on the wall at a full-scale, the materiality of the wall becomes transparent like a windshield where only spatiotemporal events occur.

A grid of invisible flight vectors and airport guiding lights radiate from and to the airport like train tracks across the sky. The airplane follows these vectors at high speed through its narrow strip of aerospace along the ground. The goal of this dromosphere is for the pilot to eliminate all obstacles to their machine's movement through space and travel the aerospace as smoothly as possible. Pilots are trained in flight simulators to distrust their own eyes through electronic prostheses, allowing distant spaces to be traversed in advance: GPS positioning, Distance Measuring Equipment, and a real-time radar network permit the navigation of spaces pre-departure and pre-arrival. Virilio argued that as such, human beings are no longer possible; the world persists but we are no longer of it. He writes that all that remains is the direction of movement through it, a pure geometry that has historically uprooted the making of cities and buildings: "architecture is no longer in architecture but in geometry, the space-time of vectors".<sup>33</sup> With the notion of the pilot as

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<sup>33</sup> Sean Cubitt, *Vector Politics and the Aesthetics of Disappearance*, in John Armitage, *Virilio Now: Current Perspectives in Virilio Studies*, 2011, p.72.

seen in the cockpit, the desire for speed is to witness the simultaneous desire for control over that speed; as mobility increases, so does the desire for control.<sup>34</sup> Virilio draws interesting comparisons between pilots and film directors in the “charismatic infallibility stemming from foreknowledge of scripts, and the process of direction, even if improvised, literally took the form of revelation — that is divine action which makes known to men truths that they would not be able to discover by themselves.”<sup>35</sup> Viewing [Projection] from a bench facing the large projection screen, this installation appears to be a screening room or a waiting room either at an airport terminal or somewhere in between. For the viewers subjected to the sensation of projection and distancing across time and space, this is the essence of passivity where intermittent speed causes inertia. As if travelers at airports were allowed to move around with minimal effort, preparing the traveler for the 0° inertia of long-distance flight through time-management technologies, real spaces are progressively diluted and individuals can no longer delineate between private and public. This is the dromosphere’s fundamental aim—from its genealogy in speed—to intensify everything into a vanishing point.<sup>36</sup>

[Screen 2] poses a sister installation of [Screen 1] (see Figures 39 and 40). From the visitor’s perspective, the moving image appears as one seeing the surrounding landscape through the car’s windshield but the viewing angle is angled slightly toward the sky and the images have watermarks from Google. The moving image shows animated Google

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<sup>34</sup> Alex Wade, *Driving, Dashboards and Dromology: Analysing 1980s Videogames Using Paul Virilio’s Theory of Speed*, 2015. Web.

<sup>35</sup> Paul Virilio, *War and Cinema: The Logistics of Perception*, 1989, p.52.

<sup>36</sup> Alex Wade, *Driving, Dashboards and Dromology: Analysing 1980s Videogames Using Paul Virilio’s Theory of Speed*, 2015. Web. [http://www.uta.edu/huma/agger/fastcapitalism/12\\_1/Wade-Driving-Dashboards-Dromology.htm](http://www.uta.edu/huma/agger/fastcapitalism/12_1/Wade-Driving-Dashboards-Dromology.htm) (accessed 10 March 2020).

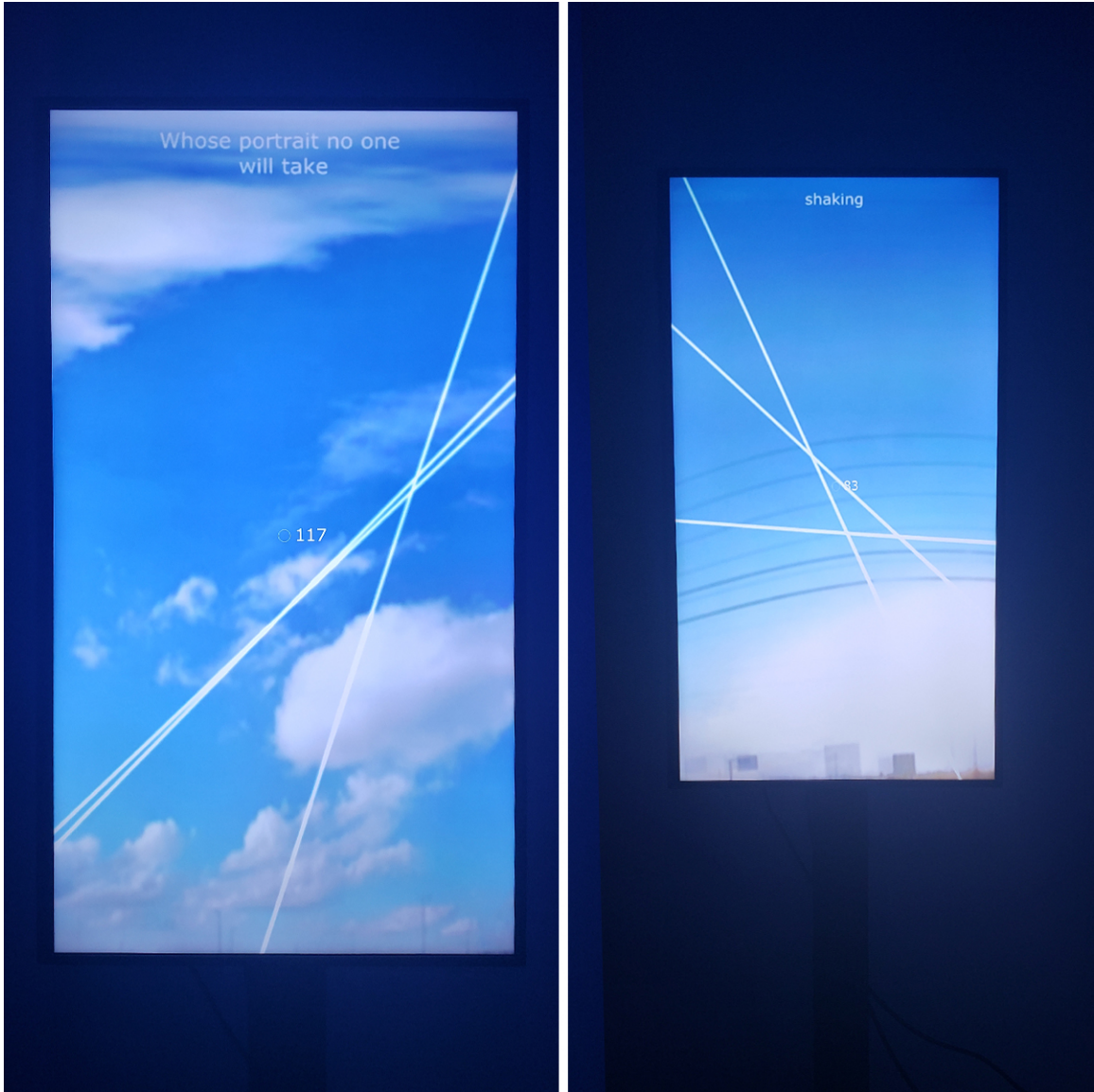


Figure 39: Screen 2

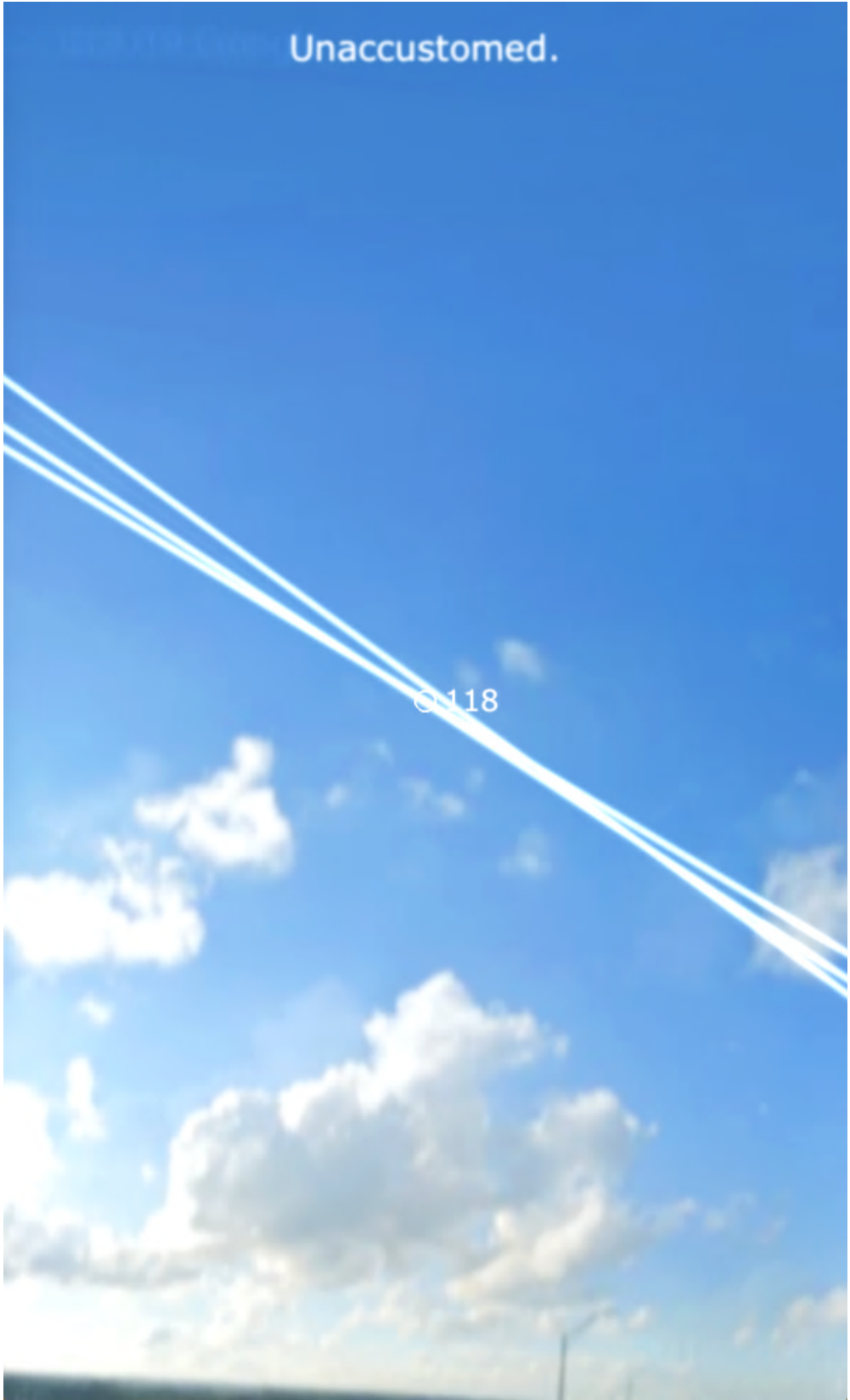
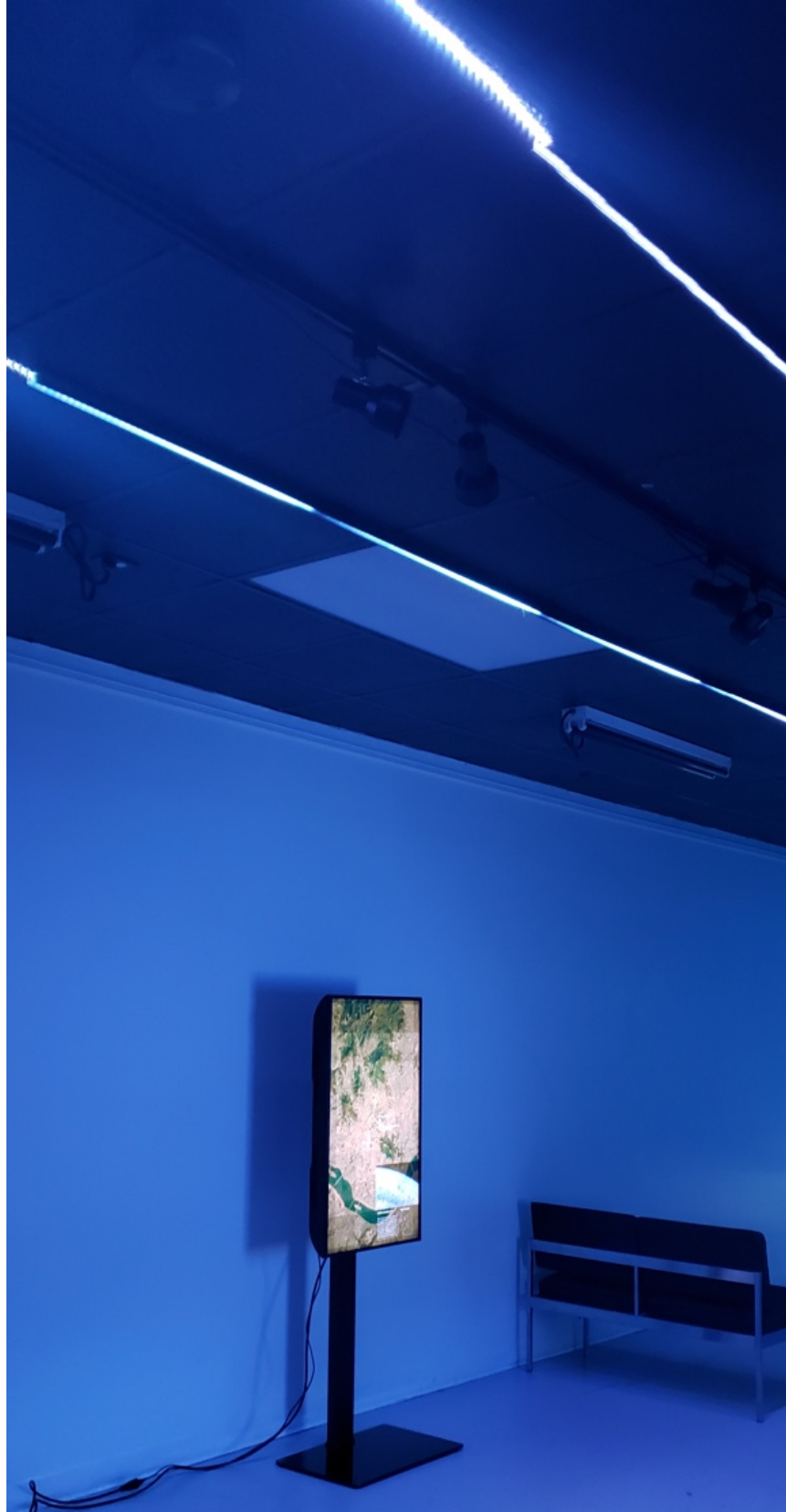


Figure 40: continued

Street view images that have been parsed and sequentially compiled from the Bing Map Direction service generated on [Screen 1], a driving route to the nearest airport from the geolocation. This emulates a time-lapse video but plays at a low frame rate. The Street view images are set to aim slightly upward, which shows the sky and landscape instead of the street buildings and cars. Over this animation heading to the airport, white diagonal lines crossing the sky are laid to imply aircraft contrails as seen from the ground; lines are drawn from the real-time formation of the current Starlink satellites that appear on [Screen 1]. Contrails are objects we never look at but noting their disappearance from the sky presents a telling indication of their deep, infra-structural presence in everyday life, as is their conspicuous invisibility. Lastly, text appears and disappears repeatedly at the top of the screen, lines of poetry from existentialist writers such as William Blake, Novalis, Mallarmé, and Paul Valéry. Poetry, memoirs, or persistent thoughts while enduring time over places, the combination of information and images is shown not at a distance but in the holistic perception of art and in the grasping of unknown time. [Screen 2] realizes movement at an unexperienceable distance, the impotence of imagined time-space that affirms only the beginning and the end of the event.

This project concludes with the representation of a vista consisting of multiple vectors, where one cannot experience the self. Two long LED strips mounted in parallel on the ceiling across the exhibition space cast a fast-moving chasing light (see Figures 41 and 42). I have fabricated two 20 ft long mounting brackets for RGB LED strips that have a hollow surface in the middle to prevent unwanted light spread. Each LED strip is wirelessly connected to the computer interface via a wireless internet router. This [LED]



*Figure 41: LED*



Figure 42: continued

interface receives trigger signals from the [Projection] interface to change the speed and directionality of the chasing effect on the LED strips. Each LED strip changes the directionality and movement speed, both sometimes have the same directionality with different speeds; this varies over time. Due to the continuously moving bright-light from the ceiling, the exhibition space is in a flux of light and shadow. The shadow created against the displays, chairs, and the visitor's bodies constantly appears and disappears. The visitors are in an ambiguous state between moving and remaining still and the mind drives this eerie sensation, conflicting with the bodily presence.

The directionality and speed of each LED strip are controlled by the [Projection] screen where pilots take-off and land aircraft on the airport runway. When an aircraft takes off or touches down on the runway, the cues assigned to that very moment in each video triggers the interface to change the speed and directionality of the LED strip. This amorphous LED sculpture aims to heighten the viewer's spatial sense of the unexpected and unfamiliar vision. Like the guiding lights on an airport runway indefinitely waiting for a plane to takeoff or land, the glowing light strips brighten up the whole space. This light possesses the essence of an action and response exercise and then reacts continually to the absence of the reality that has passed.<sup>37</sup>

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<sup>37</sup> Anne Friedberg, *Virilio's Screen: The Work of Metaphor in the Age of Technological Convergence*. Web. <https://journals.sagepub.com/doi/pdf/10.1177/1470412904045027> (accessed 10 March 2020).

## Conclusion

The desire to communicate through the interface of a screen is much higher today than in the past; this has been accelerated by the progress of technology revolving around TV, cinema, and computer screens. We observe that the digital screen, which is an interface that deletes itself to realize virtual reality, desires again to be a transparent being like a window. Humankind's need to see the world, their pure desire to express it, and their long-standing wish to communicate with others through it exist there. In terms of communication, art is the relationship created between communicating objects or beings, that is, the process to differentiate cognitive and conscious processes rather than aim at information delivery through denotation. Therefore, communication with art requires imagination and is a special communication that cannot be confused with ordinary communication. In this context, a work of art scarcely provides a single goal. Arthur Danto said the connection between art and esthetics is a matter of historical contingency rather than part of the essence of art.<sup>38</sup> It can be predicted that new media art is also experienced more diversely through the relational characteristics of communication amid the close connection between the human body and mind, technology and the world, and language-based conscious activities.

The advent of new media has brought about changes in the expression modes of new media art and the components of its works. Due to changes in the type of medium, aural, tactile, and participatory elements have become conspicuous besides the visual element that holds a central position. Interaction formed in an artwork through the organic

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<sup>38</sup> Arthur Danto, *After the End of Art: Contemporary Art and the Pale of History*, 1998. p.25.

exchange of influence between human body and mind and scientific technologies—the structural combination of spectator and environment, the representation of the sociocultural context, and the embodied experience of the information-virtual world—shows that human behavior and sensory reaction are not merely physical feedback. Interactivity in art extends to a dimension of new and rich experiences through sensorimotor; in that, human esthetic experience expands more diversely through organically changing attributes amid the close relationship between humans and technology. Therefore, through the analyses of these changing elements in new media art, this paper investigated interactivity implementation, network structure, and synesthetic expression using architectural tactility and spatial extension including virtual space.

Since the early 20<sup>th</sup> century, artistic forms have attempted to challenge normative forms and awaken cultural consciousness in the middle of unfamiliar shocks, so such attempts are no longer novel. The freedom with which we have been left is to suggest diverse strata of interrelationships among things that currently exist and the gaps between them. In making a final statement, I refer to Alfred N. Whitehead's conception of "the world as medium" (Whitehead 1978:286). Whitehead points out that while prehensions have public careers, they are born privately; we need to understand the microscopic before we can understand the macroscopic. The process of metaphysics consists of an unending series of test flights as our metaphysical conclusions are never final and always hypothetical.<sup>39</sup>

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<sup>39</sup> Internet Encyclopedia of Philosophy, *Process Philosophy*, Web. <https://www.iep.utm.edu/process/>

*The true method of discovery is like the flight of an aeroplane. It starts from the ground of particular observation; it makes a flight in the thin air of imaginative generalization; and it again lands for renewed observation rendered acute by rational interpretation. (Whitehead, 1978)*

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