

Corporeal Cinema: Tactility and Proprioception in Participatory Art

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Abstract

In this article I analyse performances, artworks and installations in audiovisual and contemporary art which emphasise tactile and corporeal experiences. This tendency can be observed in technological art, cinema and large visual attractions. I aim to demonstrate that due to technical developments and new tools, the possibilities now exist for new aesthetic experiences in which the body's position and its biological reactions play a decisive role.

Keywords

Spatiality, Tactility, Proprioception, Multi-Screen Environments, Corporeal Cinematic Experiences, Interactive Art, Biofeedback.

Introduction

In this article I analyse performances, artworks and installations in audiovisual and contemporary art which emphasise tactile and corporeal experiences. This tendency can be observed in technological art, cinema and large visual attractions. I aim to demonstrate that due to technical developments and new tools, the possibilities now exist for new aesthetic experiences in which the body's position and its biological reactions play a decisive role.

The Proprioceptive Experience in Art

This leads to the question of how the critical or theoretical point of view of an artwork changes when the spectator's reactions to it are documented and quantified in real time and are changed into source material for the next stage(s) of the artwork. Does this constitute the next step in the research of interactive artworks which were based on the subjective analysis of the participant's reactions? Does it require us to rewrite analyses of artworks which were based on the subjective judgements of the researchers?

The main emphasis in this article is the proprioceptive experience in art. I will start with an analysis of earlier inventions and analogous practices which introduce

corporeal artistic experience. I then investigate whether we can talk about the 'proprioceptive image' in the same way that we can speak about the artistic, musical or literary image. This analysis is influenced by a media archaeological approach, in particular Erkki Huhtamo's interpretation in which his approach is termed "media archaeology as topos study" or simply "topos archaeology." I aim to demonstrate how these "topoi"—"haptic and corporeal experience in audiovisual performances and visual art" or "spatiality, tactility and proprioception in participatory art"—change and "transfigure" those examples in which the corporeal experience is translated into digital data and subsequently used for manipulations of the artwork. Before starting to analyse the works of Jeffrey Shaw, Char Davies and Bill Seaman in the sub-chapter "Proprioception in interactive art", I will provide a series of historical examples which lead to contemporary developments in media art.

The main focus of the text is on changes in the "art world", with an emphasis on fields which could be called media art, new media, electronic art, and contemporary art. To a lesser extent there is also a focus on discussions happening in crossmedia and transmedia—even though some projects are not easy to define, or belong to the fields of both new media and transmedia. This particularly concerns those works of multimedia where the tactile experience on screen is gradually becoming spatial and corporeal. Another topic under analysis is to determine how clear is the tendency to make the audiovisual experience tactile, tangible and physically experienceable, in contrast to the virtual experience.

The goal in presenting these examples is to illustrate the attempts in cinema, theatre, art and research environments to create multi-screen environments that engage the audience, offering them entertainment, information and an explorative experience. The tendency is to make the visual medium tangible and corporeal so that in some examples in interactive art the viewer "puts

his hands” into the artwork.

Proprioception basically means the spatial orientation arising from stimuli within the body itself. This term is used to cover sensorial systems which give information about position, posture, orientation and movement of the body (and its parts) in space. In regard of a proprioceptively perceived artwork we can talk about the situation in which the viewer’s whole body and behaviour is involved in the decisive interaction.

The U.S. National Library of Medicine (2017) defines proprioception as the sense of position: “Sensory functions that transduce stimuli received by proprioceptive receptors in joints, tendons, muscles, and the inner ear into neural impulses to be transmitted to the central nervous system. Proprioception provides sense of stationary positions and movements of one’s body parts, and is important in maintaining kinesthesia and postural balance.” There is a distinction between exteroception and interoception, the former being responses from the five traditional senses which are receptors of information from the outside world including for temperature, vibration and pain. Interoceptors transmit information to the brain about hunger, the need for oxygen, the visceral and bladder condition etc. Proprioception concerns mostly those receptors and systems which are responsible for the movement and position of the body and this is best exemplified by our capability to perceive our body and limb positions in total darkness.

The Expansion of the Cinematic Experience

In the following discussion of multi-screen and physically perceptible environments I will highlight situations, solutions and artworks from the beginning of the so-called television era, as well several experiments that expand the cinematic experience, in which:

1) An “interrelation” occurs between the visual screen content and a “communication” occurs between screens: the visual or auditive content on different screens is transferred from one to another, and a narrative is split between different (two or more) screens;

2) a connection occurs between screen images and stage activity: actors in physical space and screen-space are acting in collaboration or antagonism between each other;

3) viewers are influencing and directing the screen content: screen environments which surround viewers are gradually changed into environments which are

shaped by users/viewers;

4) viewers or actors are “in the image”: viewers or actors are corporeally in the image or influencing it directly;

5) the spectator’s physiology is influencing or directing the screen content: the viewer’s participation in the presentation of images is influenced by their own biological data (such as Heart Rate Variability, HRV; Galvanic Skin Response, GSR etc.) which is used as input data for audiovisual variations.

Analysed Works

Let us now examine a variety of works according to the aforementioned characteristics:

1) An “interrelation” occurs between the visual screen content and a “communication” occurs between screens: the visual or auditive content on different screens is transferred from one to another, and a narrative is split between different (two or more) screens.

Immersive screen environments of this type were popular in the context of World Fairs. **Charles and Ray Eames**, who were known as architects, interior and furniture designers, were also the creators of theatrical and other large scale experiments. One of their most famous projects was the exhibition “Glimpses of the United States” shown in 1959 in Moscow, which was a huge spatial composition comprised of seven 20 x 30 inch screens on which scenes of American life were shown (Figure 1).



Figure 1. Charles and Ray Eames’ “Glimpses of the United States”.
©<http://www.eamesoffice.com/the-work/glimpses-of-the-usa-film/>

A superimposed narrative built a bridge between the USA and Russia by presenting a cross section of life,

starting with the description of a similar sky, common to both countries, and finishing with everyday things of ordinary people—the morning rush, goodbye kisses, entering school buses etc. (Eames 1959). The successful exhibition was visited by three million people and the famous “kitchen debate” (about the merits of socialist and capitalist systems) between Nikita Khrushchev and Richard Nixon took place there and was later aired in the Soviet Union and United States.

This was not the first project by Eames worthy of mention here. “Konditorei” was designed in 1955 after a visit to the München Conditorei Kreuzmann, it depicted the history of bakery through 96 images divided into three screens (Eames 1955). In 1962 they were invited by the U.S. Department of State to create a film/multiscreen presentation entitled “House of Science” for the United States Science Exhibit at the Century 21 World’s Fair in Seattle, Washington (Eames 1962). This was an introduction to five governmental pavilions, each of which was focussed on a different aspect of science. In order to depict the development of disciplines architectural structures were used which gradually became more specialised (Eames 1962). Eames’ subsequent work was an IBM pavilion with an Ovoid theatre designed for the New York World’s Fair, which was a collaboration with Eero Saarinen (Eames 1964- 65). Inside the egg- shape theatre, which housed a field of 22 multi-sized multi-shaped screens, visitors watched the Eames presentation “Think” (Eames 1964).

2) A connection occurs between screen images and stage activity: actors in physical space and screen-space are acting in collaboration or antagonism between each other.

During the 1950s and 1960s multi-screen projections were met with excitement and they later developed into immersive screen-environments. The Czechoslovakian “Laterna Magika” staged during the 1958 World’s Fair in Brussels is worthy of mention, it being described as a new media show and the first multimedia theatre (Figure 2). Director Alfréd Radok and scenographer Josef Svoboda collaborated to create a performance which combined ballet, theatre, film projection and a sound environment.



Figure 2. Czechoslovakia’s “Laterna Magika” at the World’s Fair in Brussels in 1958. ©http://web.uncg.edu/dcl/courses/eyeappeal/u7/u7_3_b.asp.

The activity/performance in the foreground was perfectly synchronised with multi-screen projection in the background to produce the effect of interaction between the two. This gave the impression that the film had come to life and was reacting to the performance (Havránek 2003, p 103). It is possible to find many parallels to such a tendency in the earliest theatrical performances or in hyper realistic *trompel’œil* paintings. Examples from art and film in which characters enter or exit the screen illustrate the same tendency—the movement between reality and artificiality.

There are plenty of related examples in contemporary technical and digital performances, for example Tmema’s (2003) “Messa di Voce” in which actors influence the visuals on the screen. What previously required rehearsal and careful planning (mutual collaboration) is today achieved quite easily with the help of visual sensors and the use of programming.

It seems that this yearning for a mixture of reality and artificiality is quite primal. Humanity has a desire to be fooled by illusions and the ambivalence of the visual world. To be deceived by an illusion whilst also being aware of it creates, as well as disappointment, some kind of enjoyment which evolves from the ability to understand and uncover the underlying fakery.

To illustrate the imaginative movement between screens and reality we may call on examples from visual art. A very famous and often-used story is that

of Pygmalion and Galathea in which the sculptor falls in love with his creation and asks God to transform the artificial being into a living body. Interpretations include paintings by Louis Gauffier 1797, Ernest Normand 1881, Jean-Léon Gérôme 1890 and many others. This myth has also been used to illustrate interactive art, although there are two sides to this phenomenon: reviving the non-living artwork, and permitting the real spectator to enter the artificial environment.

Returning to “Laterna Magika”, it is of interest that the success of the performance in Brussels paved the way for the establishment of a professional theatre in Prague bearing the name “Laterna Magika” which still exists today. This theatre is based on a variety of technical solutions in a contemporary context. It provides an example of how artistic experiments can prove to be the foundation stones of established institutions.

3) Viewers are influencing and directing the screen content: screen environments which surround viewers are gradually changed into environments which are shaped by users/viewers.

The 1967 EXPO in Montreal featured the most important participation film in the history of interactive cinema: Radúz Činčera’s “Kinoautomat” or theatrical cinema, where viewers were able to change the plot direction of the movie by pushing a red or green button on their seat. Historically speaking it is the most important experiment of this type to which researchers are constantly returning (Carpentier 2011, pp 276–308; Hales 2014, pp 150–179). For the purposes of our discussion, the salient point is that viewers were able to participate in decisions about the directions of the cinematic story—this category could in fact contain the majority of interactive art works in which something is happening between the viewer/user and the moving image.

4) Viewers or actors are “in the image”: viewers or actors are corporeally in the image or influencing it directly.

Here we can start with several examples including Tmema’s previously mentioned “Messa di Voce” (2003), most of Paul Sermon’s telematic work (“Telematic Dreaming”, 1992; “Telematic Vision”, 1992 etc.), Myron Krueger’s “responsive environments” from the 1970s, and Dan Graham’s installations using delayed image. Also included would be installations of the 1970s by Bruce Nauman, Peter Campus and Peter Weibel, Jeffrey

Shaw’s “Video Narcissus” (1987) and many others.

Experimentation with screen and performance was evident already in the 1960s which raises the question of whether earlier experiments like “Laterna Magika” influenced later artworks. We can talk rather about a trend which was made possible by technology—for instance, in Robert Whitman’s screen-based performance “Prune Flat” (1965) a woman in white was mimicking the movements of a woman represented on screen. Whitman was arguably the first who brought film projection into sculptural environments with his “Shower” (1964) in which a naked body was projected onto a shower curtain. Whitman mentioned that he was influenced by childhood memories of the clown Emmett Kelly’s performance in which he tried to sweep up a searchlight which would move or get smaller (La Prade 2003). Similar techniques of connecting physical objects with images could be encountered in Tony Oursler’s works from the 1990s up to the present day (Oursler). Also, Nam June Paik in collaboration with Charlotte Moormann realised many versions of a piece in which Moormann was connected to working television monitors or she played the “cello” formed by three television monitors.

The digital performance researcher Steve Dixon (2007, pp. 99–100) discusses the British theatrical group Moving Being which as a multimedia and theatrical collective staged performances in the 60s and 70s in the UK. The group was created as a collaboration between actors, dancers and musicians with the help of film and video. Dixon’s own group Chameleons was devoted to stage performances using screens and projections—the Chameleons multimedia performance research company was created in 1994 at the University of Salford in the UK.

In their 1994 project “Chameleons: The Dark Perversity of Chameleons” five actors in their bedrooms were situated on stage. Televisions in the same room reflected their dreams and hallucinations. Every actor had a system of movements—four physical movements which were repeated and borrowed from each other. The subsequent (1996) project “Chameleons 2 – Theatre in a Movie Screen” featured actors moving between screen and stage—the screen was supplied with windows and doors through which actors could pass. An interactive CD-ROM of the performance was produced which served both as documentation and a meta-analysis of the performance. Even more complicated was the performance “Chameleons 3 – Net Congestion” (2000) in which the audience gave instructions to the actors via

the internet. According to Dixon (at a presentation made at DRHA2015 in Dublin) this attempt was unsuccessful and remained only in the form of an experiment.

The experience of “Chameleons 2” is comparable with the Estonian performance “Estonian Games. The Wedding” at the Von Krahl Theatre which was staged practically at the same time, in 1996 in Tallinn. The screen was used similarly: the screen functioned as a character, co-actor and a surface through which actors and the choir could move. It was touched, opened and closed directly and physically and was equally an object, a mediator of distant reality, and a participant in the narrative. True, we could describe the screen as passive, it did not possess the interactivity that was inherent in the play itself. In the context of these performances the important aspect is that the screen was split and functioned as an object—it was not only a medium and a mediator, but was itself part of the content which gave meaning to the actions taking place on stage.

A discrete categorisation could emerge here which would investigate interactive dance environments in which the goal is to develop specific hardware and software to facilitate the creation of devices (shoes, clothes, etc.) which would permit dancers to influence sounds or the visual environment around them. This category of digital theatre and “cyberformance” would include several groups such as Troika Ranch (Troika Ranch), Dumb Type (Dumb Type) and others (Sparacino, Davenport, Pentland, 2000).

Special attention should be directed to visual environments in which the goal is not only to immerse the viewer in a multisensorial environment, but also to influence the viewer kinesthetically, vibro-acoustically and unconsciously. The goal here is not only to involve the senses in the perceptive act but rather to involve the whole body—since physical reactions are important to the perception of art these reactions themselves could become the artistic goal. An illustration of this is the group Granular Synthesis (the Austrian artistic duo Ulf Langheinrich and Kurt Hentschläger) who created several multiscreen, acoustically marginal and physically challenging environments during the 1990s in which the viewer was surrounded by four (or many more) screens with approximate sizes of 3 x 4 metres showing visuals with low frequency sound that induced physical discomfort. Ryoji Ikeda’s projects “Supersymmetry” (2015), “The Planck Universe [micro]” (2013), and “Test Pattern [n°5]” (2013) are also worthy of note.

These projects truly challenge the viewer’s perceptive ability and physical tolerance.

One contemporary direction lies with virtual environments such as the CAVE or VR-Cube in which the viewer is surrounded by stereoscopic images which give a feeling of immersion. Examples such as this shift the notion of multi-screen environments to the extreme. This is particularly true of the six-sided CAVE (VR-Cube) at the Royal Institute of Technology in Stockholm. Here the viewer is surrounded by six walls, covering 360 degrees, one of them being the floor. The environment is used for design and technology research but also for a few artistic and architectural projects. The impressions produced are so powerful that audiences in the cube grab each other’s clothes to keep their balance whilst “flying” over architectural representations—it is well known that in order to maintain balance we need adequate visual feedback from the environment around us.

In terms of physical image-environments there is a long history of conceptual, entertainment and research activity aimed at inventing spaces with the ultimate immersive potentiality. My interest lies in observing those artworks and their contextual elements which are based on tactile and proprioceptive interaction. With regard to corporeal feed-back effecting changes connected with the presentation of content, an example is Orit Kruglanski’s (2000) poetic and interactive multimedia project “As Much as You Love Me” which deals with the issue of guilt. As an additional physical interface, a so-called *force-feedback mouse* is placed on a steel plate and on screen *non-apologies* are displayed encrypted as symbols which are accompanied by the words “don’t forgive me” etc. To hear the text the user must gather symbols which resemble bugs. Each collected symbol makes the mouse feel “heavier” (technically this is realised with electromagnets attached to the mouse) and in consequence, the more the user collects non-apologies and guilt, the more the mouse sticks to the surface, and the more heavier becomes the burden of guilt. By moving the mouse into the circular *denial zone* the user succeeds in freeing themselves from “guilt” and the mouse becomes lighter and returns to normal. Upon exiting the denial zone the bugs—the guilt—gather on the mouse cursor which turns heavy and “sticks” to the surface (Kruglanski 2000). In this way the user experiences emotional states through their physical equivalent, the whole process being made possible by technical means.

Many historical and classic projects could be mentioned here in which corporeal contact with the artwork takes place, for example Lynn Hershman Leeson's "Deep Contact" (1984), Monika Fleischmann's "Liquid Views" (1992), Christa Sommerer and Laurent Mignonneau's "Interactive Plant Growing" (1992) and "A-Volve" (1994), Thecla Schiphorst's "Bodymaps: Artifacts of Touch" (1996) as well as many others. These projects are distinct from ordinary hand-controlled projects that use a mouse or button-based device because they make the interaction with the content much more physical. In Hershman Leeson's project the user can touch an image of a woman's body using their hand—something that during the 1980s when the project was made was considered extraordinary. Using a finger or a hand directly to make selections on screen is much more intuitive than using a mouse or remote control.

In other projects sensors and electrical conductors are employed to react to the user's actions or force. As a result, there is not only a tactile, but a haptic relation to the content of the artwork. Erkki Huhtamo, for example, makes a distinction between tactile and haptic feedback, nevertheless the terms are used synonymously. Tactile is associated with physical touch whereas haptic involves physically perceptible feedback (vibration, shock etc.). Haptic is in Huhtamo's interpretation connected with a much bigger physical engagement.¹

The viewer's collaboration occurs not only manually but involves the upper body and physical behaviour—the viewer can experience different tactile and multisensorial sensations such as touching plants or water.

5) The spectator's physiology is influencing or directing the screen content: the viewer's participation in the presentation of images is influenced by their own biological data (such as Heart Rate Variability, HRV; Galvanic Skin Response, GSR etc.) which is used as

¹ See also E. Huhtamo, Touchscapes – Tactile and Haptic Interactions in the Works of Sommerer & Mignonneau. – Christa Sommerer and Laurent Mignonneau – Interactive Art Research. Eds. C. Sommerer, L. Mignonneau, G. Stocker. Vienna, New York: Springer, 2009, p. 33. See also Huhtamo's articles on touch in art and interactive art: E. Huhtamo, Twin-Touch-Test-Redux: Media Archaeological Approach to Art, Interactivity, and Tactility. – MediaArtHistories. Ed. O. Grau. Cambridge: MIT Press, 2006, pp. 71–101; E. Huhtamo, Tactile Temptations: About Contemporary Art, Exhibitions and Tactility. – Interface Cultures. Artistic Aspects of Interaction. Eds. C. Sommerer, L. Mignonneau, D. King. Bielefeld: Transcript Publishers, 2008, pp. 129–139. Huhtamo's articles list: MediaArtHistories, p. 95, note 4.

input data for audiovisual variations.

In discussing projects that involve perception via the whole body we can find a sequence of examples in which the viewer is perceptually embraced by the environment of the artwork. The artist TeZ (2008) does this in his work "Optofonica Capsule": the viewer places their head inside a capsule which gives an experience of "tactile sound" combined with audiovisual sensations. Vibrations are transferred through the floor where the viewer stands and which is connected to the audio environment. The performative environment "Ilinx" by Chris Salter, TeZ and Valerie Lamontagne (2014) offers an intensive visual, auditive and tangible experience to its audience. Participants wear specially designed equipment and clothes fitted with sensors. The performance lasts around twenty minutes during which the audience members experience sound, visuals and vibrations which produce a total corporeal experience that is radically different from typical everyday experiences.

In this context I would like to mention Pia Tikka's (2008) PhD thesis and her project "Enactive Cinema" shown in Kiasma, Helsinki, in 2005. In this piece the cinematic narrative of an interactive movie entitled "Obsession" was manipulated through the heart rate and skin conductivity of participants.

Finally, in this category I would like to point to Sean Montgomery's (2010) installations "Emergence—biofeedback art installation", "Vital Threads Biofeedback Apparel" (2011) and "Telephone Rewired" (2013), all of which employ biofeedback and achieve attractive and entertaining results.

Proprioception in Interactive Art

I will now choose three well-known examples of interactive art to examine from the proprioceptive point of view: Jeffrey Shaw's "Legible City" (1989), Char Davies' "Osmose" (1995) and Bill Seaman's "Exchange Fields" (2000). Transferring proprioceptive cognition into interactive, participative and tactile artworks allows us to enquire whether the corporeal experience is interesting and aesthetically novel. Also, does the corporeal experience make these art-works proprioceptively distinctive?



Figure 3. Jeffrey Shaw “Legible City” (1989). ©<http://www.medienkunstnetz.de/works/the-legible-city/>

In Shaw’s “Legible City” (Figure 3)—which is probably one of the most well-known interactive artworks—the user sits on a bicycle and pedals through a computer animated text-city which is rendered by the computer in real time. Choosing direction, which is depicted by the image changing direction, is effected by the user turning the handle-bars—the image reacts instantly. Although the bicycle is static and not moving in space, the visuals imitate this movement in space. The user, however, does not need to worry about keeping the bicycle upright, in fact it is not even necessary to be able to ride a real bicycle. Nevertheless, turning the handlebars, pedalling, and watching the moving image creates quite a convincing illusion of spatial movement.

In Char Davies’ (1995) project “Osmose” the user wears a motion-tracking vest which enables real-time motion to be tracked based on breathing and balance. A head-mounted display shows 3D images. To move in the virtual space the viewer needs to breathe in and out and change their body position. “By breathing in, the immersant is able to float upward, by breathing out, to fall, and by subtly altering the body’s centre of balance, to change direction, a method inspired by the scuba diving practice of buoyancy control.” (Davies 1995). Davies’ inspiration came from scuba diving, but in her artwork the viewer moves in electronic cyberspace. It is worthy of note that this movement occurs through movements of the body and posture. In connection with this Heidi Tikka (2001) writes about the “femininity” of the space of Osmose and suggests that it is possible to

think about it “in a gender specific way”.

Bill Seaman’s “Exchange Fields” (Figure 4) allows the viewer to influence videos featuring the choreography of Regina van Berkel. In collaboration with Gideon May, Seaman tried to develop a new kind of interface: “Exchange Fields sought to develop a novel interface strategy by eliciting culturally determined environmental ‘behavior in relation to objects’ as a grammar of gesture that could be used as input to the reacting system.” Seaman designed specific furniture-sculptures, each of which offered a “suggestion” as to how the body should be positioned in relation to that object. As Seaman (2000) writes, this suggestion was non-logocentric.



Figure 4. Bill Seaman “Exchange Fields” (2000). ©<http://www.arttribune.com/>

It is not hard to imagine that many users would not dare to put their hands or legs into Seaman’s boxes, or would prefer to watch as somebody else was “performing”. Those who tried were required to keep their balance and steer their body. Understandably, with such nonstandard movements the whole proprioceptive system is engaged to maintain coordination and balance.

In discussions about art the issue of physical experience is seldom raised. This is not entirely accidental since in exhibitions the use of touch and physical (proprioceptive) sense of position is rather rare, even though the tendency to engage the viewer is becoming increasingly common. Also, physical action and touch are important in children’s art education, children being undoubtedly more receptive than adults and their manual and physical interaction with the environment is socially acceptable. The public social space of the so-called adult world has its own non-written rules of behaviour, for instance sitting on the floor or laying on the ground is considered rather odd, even if the artwork demands it. The same can be said about touching artworks. Even if it is permitted to touch an artwork most visitors are

shy to do so even if others are seen to be touching. In connection with such behaviour Erkki Huhtamo (2006) writes about “tactiloclasm”: Tangible behaviour is ostracised from art communication because touch is connected with the fear of a “dirty” hand.

Moving now to look at dance, where physical experience and expression is important, an article by Barbara Montero (2006) makes a case for “Proprioception as an Aesthetic Sense”. In this article Montero tries consistently to convince the reader that proprioceptive “sense” is also a source of aesthetic experience. Dancers experience a quality of movement even without seeing themselves in a mirror and a dancer makes decisions about movements of the body on the basis of “internal” perception from “within” the body. This does not mean that visual feedback from a mirror is excluded, because all movement adjustments are carried out by a combination of proprioceptive and visual perception. On the basis of proprioceptive “sense”, decisions are made about whether the movement is graceful, dynamic, boring, etc. In terms of visual art, this is a similar process to when an experienced viewer perceives intuitively whether the artwork (or its details) is interesting, aesthetically valuable (or not), and so on.

Bringing proprioceptive cognition to interactive, participative and tangible art allows us to ask whether this corporeal experience offers the viewer interesting and aesthetically innovative possibilities. We can ask what is happening in those artworks in which corporeal experience has a primal role, is this proprioceptive experience aesthetically distinctive, different, and new?

The aforementioned projects “Legible City”, “Osmose” and “Exchange Fields” each differ from the point of view of physical activity and challenge. In my opinion the most traditional is “Legible City” because the user should pedal in the accustomed manner through the virtual city. Nevertheless, at the time this work was created the bonding between the participant’s physical movement and the moving image on screen was novel, a fact which renders this work remarkable and influential. With the other examples (Sea-man and Davies) we can say that the user’s proprioceptive experience is unique—there is no comparable artwork in which interaction between body, sensors, audio and visuals happens in a similar way. I conclude therefore that “Legible City” is a more ordinary work than “Osmose” and “Exchange Fields”—these are projects in which the viewer’s proprioceptive participation can be said to be original.

Conclusion

In this analysis I have avoided any discussion of biofeed-back-based interactive art and cinema. The goal of the article has been to prove that the expansion of the viewer’s experience in cinema and art has reached as far as corporeal and tactile experience. In these artworks the visual-auditive-spatial presentation is related to the viewer’s physical activity or reactions. Building on a series of historical examples I prove the existence of this trend and reveal the historical tendency that was already visible in *trompe l’oeil* paintings—the desire to erase the difference between artificial and real worlds. It is interesting to observe the consistency of attempts to “break the barrier” between reality and artificiality which occurs at different levels of technical complexity. We can talk about a cultural topos which seeks to make the virtual tangible, one which we encounter in visual art and media art, but also in works of experimental cinema.

Firstly, I focused on artworks in which “immersion” occurs to a maximum extent and where the proprioceptive “sense” defines the aesthetic experience. Since proprioception is a complex corporeal-physiological feedback mechanism it would be wrong to call it “a sense”, but undoubtedly it has been unjustly omitted in discussions about art. This article aims to foreground this term and to demonstrate that we can talk about a proprioceptive aesthetic experience.

I conclude that artworks which are designed for tactile, proprioceptive and biofeedback experiences are pushing boundaries to the extent that they could be considered research experiments. The creation of these works depends on the availability and cheapness of respective sensor technologies, the level of competency of the artists, designers and programmers, and the rise of new collaborative practices.

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