

Thesis: Object-Viewer relation as a generator of cinema space

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Abstract

This paper explores the hypothesis that cinema is conceptualized by the relation of viewer and object. With a short history of over 100 years, Cinema Theater went through a radical change during the years. There are several dilemmas about the future of cinema as architectural building, the new role of cinema and economic profitability. In this work I tried to focus on the relation between the viewer and the object (the movie) as a space generator: how this relationship is shaped and influenced by Cinema Theater and vice versa.

The Thesis is split into several chapters, each one of those research a certain theme and aspect of the cinema: Functionality, Spatial configuration, personal and public space, cinema senses and viewer interaction (as appendix). Each chapter shades light on the relation of space, observer and object. In each chapter historical references are researched as alternative kinds of cinema, or places that uses image projection.

The cinema functionality was not rigidly define by the start of public screening, existing buildings were converted into cinema theaters and were used for other functions as well. With the formation of cinema as a distinct type it lost other functions such as the café, the stage and the organ.

Spatial configuration chapter presents different medium of image viewing, like the Panorama and the Diorama theaters. Split screen technique also presents an alternative perception method and behavioral mode.

Cinema is a hybrid structure of public and private space. The personal space of the observer plays a major role in both architecture and the movie-medium itself. In modern Cineplex the chair is the space which belongs to the viewer. This relation drastically changes when the apparatus is different (like the one-on-one Kinetoscope), or when the "seat" alters (as in Drive-In Theater).

This paper is presented as an agglomeration of historical references and segments about perception and space. It is a step towards an academic discussion about the basic elements of cinema, and the myriad possibilities that lay with the future of relation between observer, object and space.

Keywords: Cinema, Viewer, Space, Gilles Deleuze, Benjamin Walter, Morton Heiling, Panorama, Diorama, Multiple-screens, Kinetoscope, Mutoscope, Cineplex, Drive-in, Virtual Reality, Augmented Reality,

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Introduction

"In 1900 there was not a single building specifically built for use as a cinema. Less than 40 years later every major town had at least one picture palace, a total of 5500 cinemas nationally. The cinema can thus be said... to be the most important new building type of the 20th century." (D. Atwell)

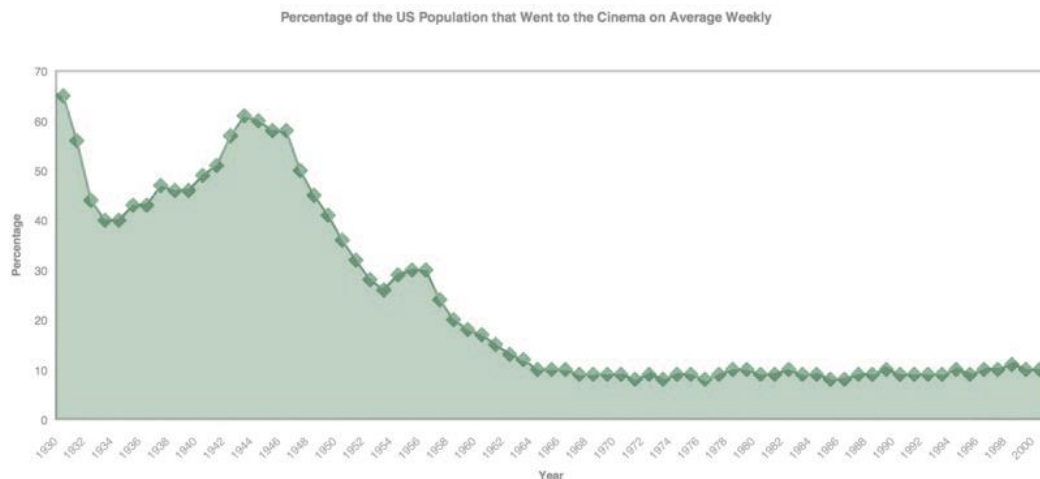


(Armon Cinema, Haifa, 1935, [1])

Cinema Theater as an architectural type was conceptualized in the last decades. It is one of the few new type that were created in the last century. However, with its spectacular rise of popularity a big dilemma is growing ever stronger about the fate of the cinema theater. The architecture of cinema as we know it, faces several challenges, enhanced by contemporary changes:

*The multiplicity of media is going through a process of convergence: *"The general digitalization of information and channels erases the difference between individual media."* (Friedrich Kittler, 1986). Today the computer, television, radio, game station, phone and cinema form into one. We consume movies not only by going to the cinema anymore, as the same material is also provided by the internet and TV. This makes the uniqueness of cinema questionable and undermines its programme and usage.

*In the last decades small cinemas were abandoned in favor of bigger multiplexes. Those placed were replaced by even bigger complexes. The existence of even megastructure-complexes is at risk because of low box office admission.



(Average cinema admission in the USA, from 1930-2000, [2])

*Cinema became an almost mono-function facility in the urban fabric. As more and more structures became white-elephants, a question rose about the future of those buildings and the effect over the city including mass infrastructure and the suburb sprawling. *"Today the cinema is delocalizing, preferring commercial and suburban areas to the city centers, the cinema hall is transforming into a multiplex, and is being used for different purposes, thus abandoning its original function"* (Adriana M., p. 13)

It is hard to think of any alteration of Cinema Theater since we are familiar with only one way of watching a movie: within a closed, dark, rectangular space. The familiar cinema has a certain way to perceive the object (movie) – and it is shaped accordingly. Its structure is based upon several major leading concepts: crowd control, acoustic performance, maximizing sitting capacity, a detached and perfect watch experience conditions. Cinema theater architecture is a result of the approach of how we perceive, react and interact with the object, rather than a simplistic dilemma of technology: *"A society is defined by its amalgamations, not by its tools ... tools exist only in relation to the interminglings they make possible or that make them possible."* (Gilles Deleuze, A thousand Plateaus, Capitalism and SchizoPhrenia)

Hypothesis:

The main reason for those issues and the question about the fate of the cinema is embodied in the conceptualization and marketing of the cinema. It is a physical-architectural manifestation dedicate for a visual art in a specific way. Cinema today reflects a certain approach of economy, crowd-control, social activities and culture. Through the history of projecting image there were several examples for a different kind of cinema that creates a different kind of viewer-object relation and therefore suggests and forms a different architecture.

In this work I wish to examine the evolution of the cinema as a building-type and to shed light to the semi-forgotten and ignored experimental cinema theaters that provide a different viewer-object relation. Within the spectrum of cinema architecture it is crucial to uncover the way the marketing of the building relates to the society and the city it inhabits.

However, in order to enrich the academic and professional discussion about the mentioned issues, this work will focus on **the special link between the way we perceive an image-object and the shape of cinema architecture**. The relation of viewer-object-space is shaped not only in regard to technology but mostly to society, As Johnnthan Crary implied: “a history of the observer is not reducible to changing technical and mechanical practices any more than to the changing forms of artworks and visual representation” (Crary J., p.8) Therefore this work will concentrate on both **historical references and theoretic philosophy about our perception**: most notably Gilles Deleuze and Screen Theory, Benjamin Walter and the innovative Morton Heiling. Within this new link perhaps lay several possible solutions and ideas for the future of cinema.

The relation between object-viewer is also relevant to other fields of architecture such as education, museums, the image of architecture and more, but with the cinema theater the question is poignant and relevant to the dilemma of what to do with the "cinema theater building type". Chronological review of architecture might be easiest to explain, but it may be misleading and misused, implying that time progression is linear, and that processes are a simple matter of evolution: *“the emergence of photography and cinema in the nineteenth century is the fulfillment of a long unfolding of technological and/or ideological development in the West...Such a schema implies that at each step in this evolution the same essential presuppositions about an observer's relation to the world are in place.”* (Crary J. p. 26) Instead of linear-chronological review, this work will split the main theme into several arguments. This was done in order to deconstruct the complicated subject of viewer-object-space relation for a more architectural-thought provoking discussion.

Main Arguments – themes:

This paper explores the research question through several themes, each one has its own chapter. I decided to construct the arguments from the general to the specific, starting with the overall function of cinema, the internal configuration of object and space and delve deeper into the personal viewer space and the sensing of the observer. Finally I added a chapter for new presented technologies that allow new kinds of interaction. Each chapter contains historical references, but their separation is not absolute – as it is possible to refer to some arguments using the same architecture.

Cinema Functionality, Mono function to multi-functions: When cinema was made into public attraction there was not a dedicated building for it. Buildings were converted to fulfill this function, while providing other kinds of entertainments. Cinema Theater today usually focus on the solely experience of viewing and push aside any other activity, social or personal. The physical structure of the auditorium is used in order to sever the connection between the movie and the outer world. T.V challenged this approach – make the object as another layer of activity that takes place alongside other activities: eating, talking, doing household chores and so forth. As T.V penetrates other facilities, like restaurants, bars, art galleries – the relation of viewer-object became a part of a system where the space is not dedicate for only one function.

Spatial configuration, from 2D screens to 3D objects: The cinema auditorium provides the viewer with 2D flat screen, as the basic media form of presentation. Those 2D spaces require the minimum interaction and concentration, it is a very linear medium of perceiving the visual. When the 2D object transforms into 3D spacious entity – this relation changes. It becomes a more complicated and elaborated relation that differs from person to person.

The viewer choose where to focus on, what to see, where to position himself – and this decision changes the way the viewer understand the object. When the 2D screen becomes a circular surface of even static image (like in the panorama theater) – the viewer is the central-figure and at liberty to move his gaze and take an active role in reveling the object. It is also true when the linear 2D screen splits into several screens (like in several experimental-cinema in world fairs and in expo's) or other 3D configuration. The object assimilates into the architectural surrounding.

Personal space of the viewer, personal – social space: Cinema is designed for inhabit of the human body, the proportions and furniture is designed for the human physics and ergonomics. There is a specific space designed for the viewer, namely, the chair. The fixed domain of the viewer also fix the relation between him and the object, as well as the relation with other viewers. In Opera Theater the crowd face the stage but also each other. The experience is also an activity of looking at the other visitors, follow their reaction and emotion. Before the invention of cinema, Thomas Edison Kinetoscope was an apparatus that allowed only one man standing to watch a projected image – thus making the relation one-on-one. The object became private for the viewer and at the same time mysterious to others. Proportions, functions and volume change when the viewer was not consider as merely the human body – but also automobiles that belongs to him. In Drive-In the car is consider to be a space within space. This allows to participate in a social activity (to some extant), while remaining in a familiar environment.

Sensory cinema, Static - dynamic viewer: Contemporary cinema is perceived as a medium for recreation of image and sound. For a long period movies could only provide the image. That changed with the age of “talkies”. Further experiments were done to integrate all of human senses. The notion of motionless viewer is a cornerstone in designing cinema auditorium. The medium force the observer to stand in one place in order to properly perceive it. Several other experiments exploit movement in order to enhance the experience of viewing the object, like moving platform, motorize seats or the historical rotating stage of the Diorama Theater that shift the crowd from one scene to the other. In those examples the movement of the viewer is integrated as part of the medium, and the viewer becomes part of the mechanism.

Interactive cinema (Appendix): interactive relation between the user and the screen can be found all around us: in computers, smartphones, smart TVs. With the advancement of technology the object becomes more adaptable and interactive. The viewer takes a major role in not only viewing the object, but also changing it, effect it, interact with it and communicate through it. The BIX façade in kuntshaus Graz project becomes an "urban screen" that communicate by light emitting big pixels of the façade. A new game arena (like The Void) is developing architecture that communicate with the medium itself: the media provides the visuals while architecture provides the physical space for the activity. As virtual reality and augmented reality become more prominent this vision is becoming more tangible and evident. With interactive objects, architecture and the image may become a combined infrastructure for perception.

Research question:

How the relation between viewer and object generates the architecture of Cinema Theater?

In which manner the cinema architecture changes the way the observer perceive the object?

In the framework of reviewing other experimental approaches of cinema in the past (or image projection conceptualization) I would like to point towards a different kind of relation.

[1] - <http://www.haaretz.co.il/gallery/architecture/1.1522744>

[2] - <http://www.cinemablend.com/new/Long-Term-Movie-Attendance-Graph-Really-Really-Depressing-68981.html>

Cinema Functionality: Mono function to multi-function

For ten years after Lumiere brothers' first screening, there was not a dedicated building for cinema (1). Buildings were converted to fulfill this function, while usually kept on providing other kinds of entertainment. Cinema Theater today usually focus on the solely experience of viewing and push aside any other activity, social or personal. The physical structure of the auditorium is used in order to sever the connection between the movie and the outer world.

It is important to note that there is an academic dispute about the first dedicated space that was built only for the purpose of movie screening: *"What presents one of the most intriguing areas of investigation is identifying with any certainty which was the earliest purpose built cinema, as oppose to a conversation of an existing hall or shop, and also which was devoted exclusively to the presentation of films."* (D. Atwell, p.5). The earliest accepted purpose built cinema is the Bioscope in London, 1905. This cinema theater was constructed 10 years after Lumiere brother's first exhibition of projected film.



(Bioscope – later the Biograph, London, 1905)

This rises the next question: in the period of ten years, there was not a dedicated building for cinema show, only converted buildings. Most of those spaces did not function solely as a cinema theater, they were multi-functional. Today, there are numerous dedicated building for cinema, and they lack the spatial potential to be something else, to be used in a different way. They cannot "go back". How the cinema as architectural type was established in the first place and what were the reasons for this homogeneous architecture?

Most of the early cinema theaters were: *"... a simple rectangular hall with a barrel-vaulted roof and moulded plasterwork arranged as ribs and as decorative panels."* (D. Atwell, p.7) Cinema was a rather simple room that was converted into projected image functionality. The design-style of the cinema theaters was a major subject during the first decades. The style changed from modern, art-deco, neo-classic, Egyptian-like simultaneously. Construction-wise, cinemas were built according to the most advanced knowledge of

steelwork and reinforced concrete. Later on, the simplistic spatial design was kept, and “unnecessary” space disappeared in favor of maximize venues and maximal crowd capacity.

The conversion of theaters into cinemas became a major step in the progress and marketing of the cinema type. *"As films became better and their attendant variety turns more elaborate, so public demand for venues to see the film shows far outstripped the supply. In the early days purpose built cinemas were still not all that numerous, and hired or converted public halls were the most popular solution with the showmen. But it was nothing like as satisfactory an arrangement as **using the existing theaters, with their ready-made 'fantasy' atmospheres and sense of occasion, and also their instant availability of stages, dressing room accommodation for variety acts and comfortable seating for the patrons.**"* (D. Atwell, p.46) However, the conversion of different buildings into cinema was not held as a decided solid strategy but rather a solution to make cinema space possible. After more than a decade since the Lumiere Brothers exposition, Cinema theaters grew up as a distinct type: *"... The emancipation process from the theatrical model, which persisted in the theatre-cinema duality until the thirties, reached a separate architectural identity."* (M. Giusti p.15).

Oddly enough, one of the reasons that cinema became its own type is because of fire regulation that was due to the film itself. Because of the materials which films were manufactured from (cellulose nitrate) – they were very flammable and could burst in explosive force. The storage of films in unsatisfied conditions could led into a hazardous ignition. The Cinematograph Act was planned using special design to prevent fire, including fire resistant projection box, fire-fighting appliances within the auditorium, etc. That led into the formation of dedicated buildings: *"Cinema owners had to spend more on their buildings and upon improving them, and the protection of the new Act proved to be an incentive to erect many more new purpose built cinemas that could be advertised as complying with the new regulation."* (D. Atwell, p.10)

Before the age of "Talkies" (or sound movies) in the 30's, movies were accompanied by a pianist or a band that played while the movie rolled. This unique partnership made the cinema into a hybrid of live-show. With the advancement of technology the band was demolished as well as the dedicated space for the players. In those multiply function spaces the object is another aspect of the whole environment and it creates a web of intricate activities. The design of sound adjustment of cinema further differed the architecture (8), In Theater cinema the design focus for sound is clarity and isolation. Isolation from external noise, isolating partitions between auditoriums, sound absorptive finishes and materials to avoid vibrating and to soak up the popcorn noise. This is in contrast for designing a theater: The sound balance is more complicated, the ceiling is reflecting and enhancing the voice while the side walls absorb sound. The orchestra pit is well placed and arranged for capacity and best sound emitting.

During the 30's two additional functions of cinema were quite prominent, but soon discarded and abolished: the cinema cafes and the organs. The cinema café was an integral part of the design of the cinema, as the auditorium. It provided the public with reasonable price luncheons and tea, and became part of the cinema experience: *"They thus became something of the haven for middle class ladies meting for a lengthy chat and for little boys accompanied by mother meeting elderly aunts over a pot of tea."* (D. Atwell, p. 117). The two functions of cinema and café also enhanced each other, as a visitor could order tea or coffee to be served on a tray to his seat during the interval. Unfortunately, cinema café fallen out of fashion and almost disappeared during the 50's. Organs were an elaborated machines used

to replace an orchestra, while imitating a variety of instruments and effects. Their design was intended to be a spectacle inside the auditorium. The organ lasted longer than the cinema café, but within few decades became anachronistic. After the invention of sound movies many of the organ were still installed in their place to provide live music between features. During the 50's there was another "golden-age" for the organs and they gained new interest.



(Organ at ABC Compton, 1936)

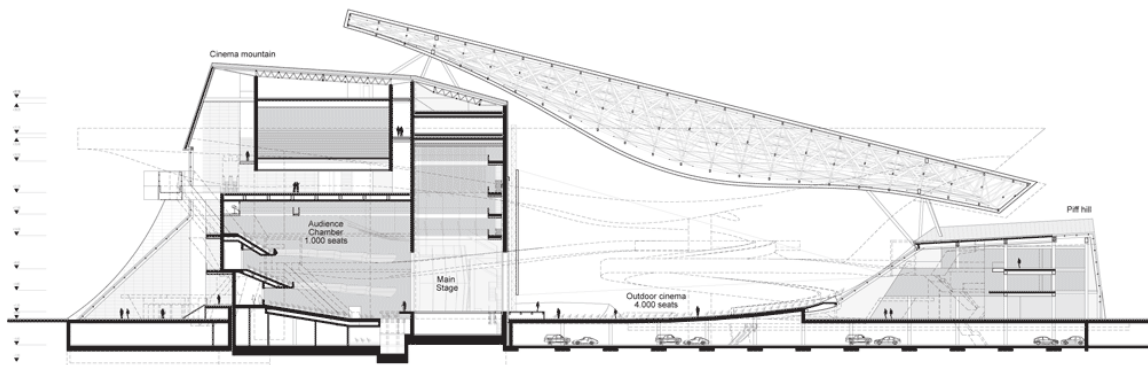
T.V became much popular during the 50's, and challenged the approach of separating watching from other activities. It made the object as another aspect that takes place alongside daily life: eating, talking, doing household chores and so forth (4). As T.V penetrates other facilities, like restaurants, bars, art galleries – the relation of viewer-object becomes part of a setup where the space is not dedicated for only one function. The early competition between television and film focused around technical aspect of screen size – cinema theaters struggled to compete against the domestic apparatus, while remained unchanged in its architectural form: *"...the architectural arrangement for the proscenium of the framed image remained the same. The cinema screen emerged as a piece of newly immaterial architecture in nickelodeons, palaces and multiplexes."* (A. Freidberg, p.177)

Even with the advancement of both architecture and cinema as a distinct architectural type, the practice lacks an unbreakable, deep, connection. Cinema Theater, as a type, was reduced to have almost no functionality at all – but as an advertisement for the movie, it became only a container. Cinema Theater today seems as a random space which the art of filmography takes place. The book "Film and Architecture" (6) presents an architectural competition for Busan Cinema Complex, one of the biggest cinema structure in Asia. The opening states the following: *"Although the combination of film and architecture may sound unfamiliar, there is a similarity between them-"*. The text highlight the similarity, not a profound connection, not a relation of object and space, but a metaphysical resemblance. The role of architecture in the service of cinema is explained: *"...will become the symbolic architectural center in the Asian film industry. Moreover, it will be one of the famous landmarks in Korea."* – Architecture is used in this case, for the promotion, for iconic presentation, and not as a functional building for either cinema or accompanying activities.



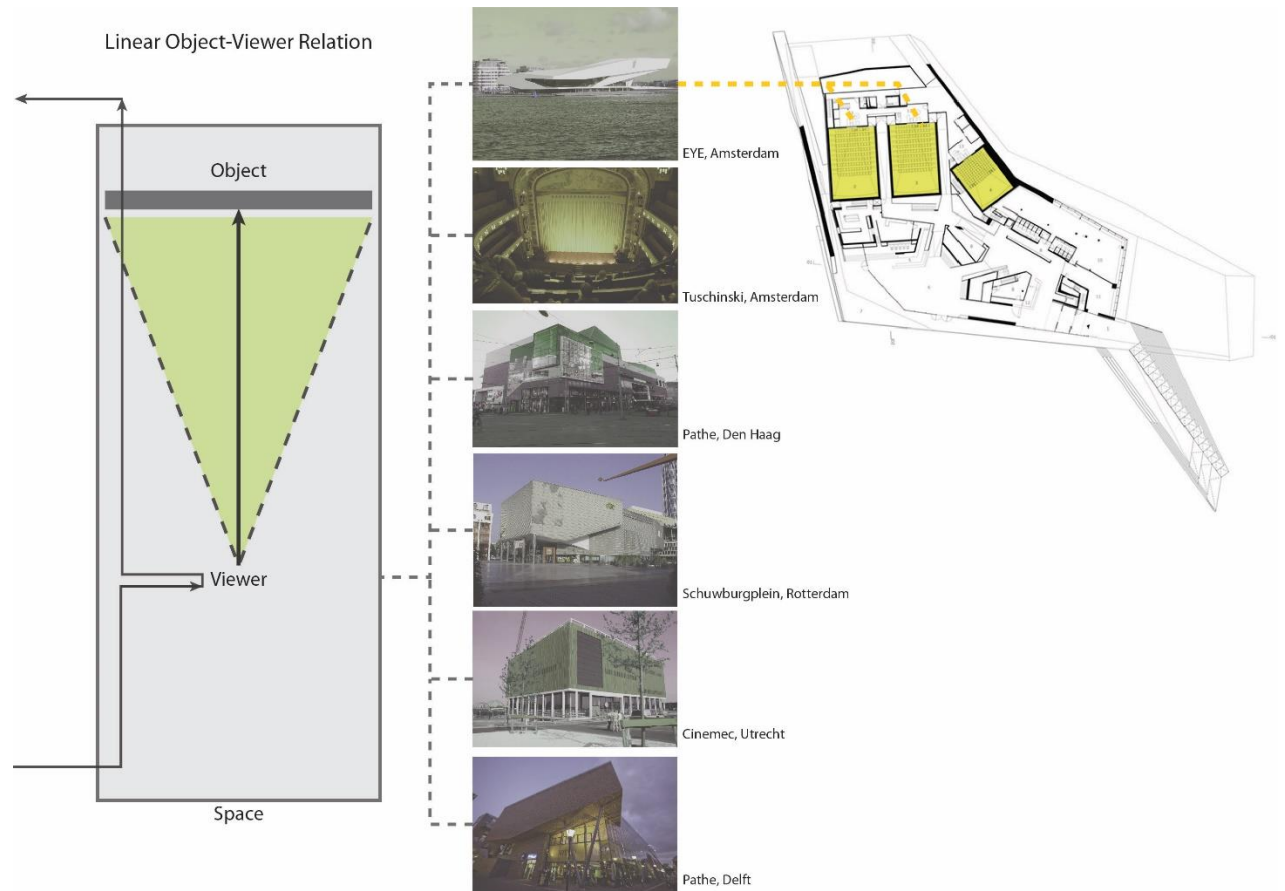
(Busan Cinema Complex, Coop Himmelb(l)au, 2011)

The building main element is the huge roof cantilever that has a strong presence. The cinema as an activity by the other hand, remains obscure from the eye and far away from the elaborated architectural design. The Auditoriums where cinema is taking place are dull in comparison with the outer image.



(Busan Cinema Complex, impressive engineering and little to do with the function of cinema)

Busan Cinema Complex is not singular. Almost every modern cinema kept the conservative form of the auditorium. The outer shape and the interior design may vary and express elaborate architecture, while the detached boxes remained the same.



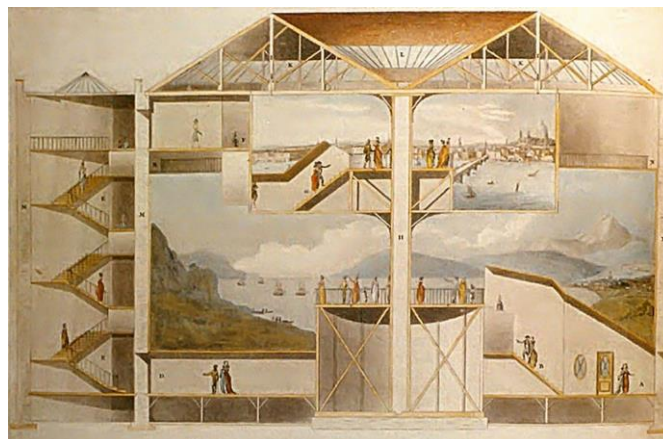
(Eye, Amsterdam, and other cinema in the Netherlands, keeping the traditional auditorium)

Cinema Spatial Configuration: 2D screens to 3D objects

The 2D flat screen and its specific configuration is the base medium of today cinema: *"...Viewers faced projected images on screen, and most commonly, these images were projected sequentially rather than arrayed adjacently."* (Friedberg A. p.195). It is almost impossible to suggest any alteration to today's medium since the whole process from film making to screening and cinema architecture is coherent and bound by economy and technology alike.

The viewer is placed in a linear experience of watching a movie, which in turn, translates into the spatial experience of linear behavior and circulation. However, this is only one aspect of possible experiences: *"This practice was not determined by the limits of existing technology but, instead, by the representational convention of the single image in a single frame."* (Friedberg A. p.195). The practice of a single screen, a single frame, for the practice of cinema is a form that was quite consistent for many creators, inventors and manufacturers. Two projected images, were used in lectures and education during the second of the 19th century, in contrast to entertainment practice of that time. This format promotes a comparative and analytic viewing, as the viewer would consider the relation of one image to the other (Friedberg A. p.196). Multiplicity of objects and screens in space suggests a behavior of gazing, decision and comparison.

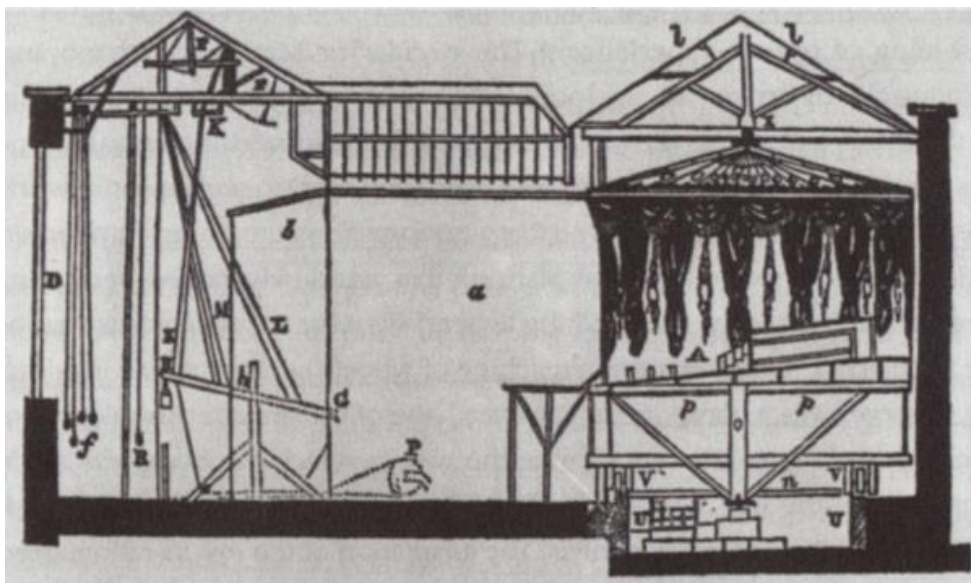
The panorama theater is an early stage of today cinema. It is a projection of static images on a curved wall, while the audience locate at the center. *"The idea of panorama originated with the German painter Breizig and was developed by a Scottish artist and inventor, Robert Barker, who exhibited in 1788 a series of paintings depicting a continuous view of Edinburgh from Carlton Hill. The pictures were on curved surfaces forming a circle and the audience viewed them from a central point."* (Atwell D. p.2). This creates rather a spatial experience between the audience and the object. The audience could move in space, turn around, and find new anecdotes in the image. A similar experience provides Mesdag (1881), in The Hague, a huge picture by Hendrik Willem Mesdag, painted on canvas around a focal point. The creation of the Panorama Theater image is through the creation of space. The drawn environment is created by placing a light source inside a glass cylinder – and thereby projected into the canvas surroundings the walls. The illusion of immersing into a fictional space enhanced by more modern means of subtle sound effects and lightning.



(Burford's Panorama, Leicester Square 1801)

After the panorama theater invention, other experiments took place. **The Diorama** (1822 by Louis Daguerre, also a painter of panorama) is based upon a similar concept [3]: it is a building that presents projected images of several magic lanterns on a layered canvas. The result is a semi-animated scene by using canvas placement, back and overhead change of lighting as well as translucent panels of different colors that changed the overall atmosphere. The paintings were illuminated by a large window behind them, which exploited skylight to radiate the object, while keeping the auditorium darkened. In this theater type the audience is placed in the center, and the stage is rotating to allow view of two screens. One usually had an urban setting while the other would have a more natural and wild background. In this architecture, the audience still located at a center point, but there is no continuous space (or object) that surrounds them – only two screens (later on, several other included a third screen). This is not only a technical aspect, this is an almost epic historical point of time when the relation of viewer and object solidified into today's cinema architecture:

“The circular or semicircular panorama painting clearly broke with the localized point of view of perspective painting or the camera obscura, allowing the spectator an ambulatory ubiquity. One was compelled at the least to turn one's head (and eyes) to see the entire work. The multimedia diorama removed that autonomy from the observer, often situating the audience on a circular platform that was slowly moved, permitting views of different scenes and shifting light effects. Like the phenakistiscope or the zootrope, the diorama was a machine of wheels in motion, one in which the observer was a component.” (Johnathan Crary, p. 113) – There is a crucial difference between the architecture of Panorama and the Architecture of the Diorama. In the first the audience is a chaotic element behind the control of the architect or the artist, the viewer is free to behold the image at his own will and pace. In the Diorama the audience is a mechanical part of the system, the viewer is controlled and architecture plays a major role in enforcing a specific relation, a solid hierarchy and governed circulation.



(Diorama Theater, London, 1823)

Louis-Jaques-Mandé Daguerre, the inventor of the diorama strove to create a realistic feeling of space. His experiments and development of projection and image led him to be one of the fathers of photography back in 1839 – and to develop the first widely use photography. The first Diorama theater was such a success that it caused other imitations to spread. Sounds effect and even live performance where added to the show, making it into a multi-sensing experience. Later on, cinema theaters used only one screen, and the practice of quantity of images around space left obscure, until the middle of the 20th century.

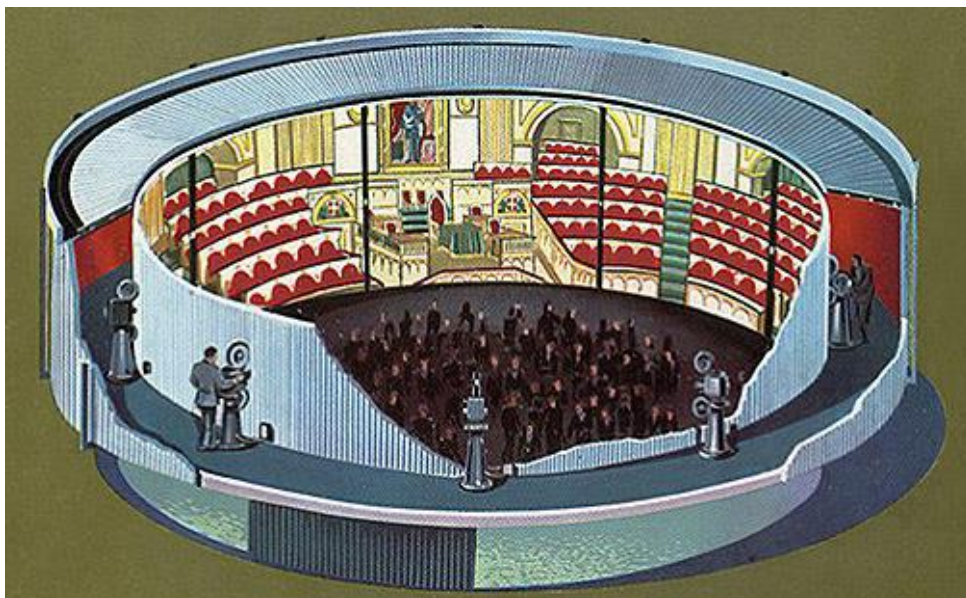
Split screen experiments in conventional films led into more elaborate exploratory– in the form of **multiple screens**. Those were popular during the 60's in several expos. In 1959 Moscow World's fair, the designer George Nelson, Charles and Ray Eames constructed a multimedia exhibition of American life. Seven screens were hanged inside of Buckminster Fuller's Geodesic dome. The abundance and freedom of American life manifested itself in a space containing several screens in the film "Glimpses". The goal was intended to improve international relations but also to become a tool of propaganda against the soviet party. Fuller himself admitted the enhanced power of the exhibition: *"no one had done anything like this before that advertisers and filmmakers would soon follow the Eames's."* [1]. Groups of five thousand people could enter the auditorium in every screening, maximizing the effect of the propaganda. The exhibit had a big impact on the audience and the media. It was regarded as the best attraction in the fair. The placement of the screens was not just an aftermath decision inside an existing space, but a result of an integrated design of Fuller and the Eames's. *"The huge array of suspended screens defined a space, a space within a space. The Eameses were self-consciously architects of a new kind of space. The film breaks with the fixed perspectival view of the world."* (Colomina B. p. 11,).



(Moscow World's Fair, 1959 [2])

The applied method is not only relevant to the world of entertainment – but also to every function that needs to have multiple stream of conflicting, intersecting information of any kind. War Situation Rooms uses the same relation in order to function on a higher level of decision making. The model of those War rooms also inspire Charles Eames in his vision for a City Room: *“In the management of a city, linear discourse certainly can’t cope. We imagine a City Room or a World Health Room (rather like a War Room) where all the information from satellite monitors and other sources could be monitored; [Fuller’s World Game is an example.]. . . . The city problem involves conflicting interests and points of view. So the place where information is correlated also has to be a place where each group can try out plans for its own changing needs.”* [3].

In addition to “Glimpses” of the Eames’s, another exhibit took place – Disney’s **“Circarama”** a 360 degree film that exhibits tourist attractions. 11 projectors (later on this was reduced to 9) projected images into screen inside circular space in order to completely immerse the viewers in the experience of being in another place. Thus a Circarama combines the concept of Panorama Theater and multiple screens, for advertisement of tourist location in the USA.



(Disney’s Circarama, 1959)

Warhol experienced with multiple screens film-making in his film *The Chelsea Girls*. In this film two screen were laid side by side and projected two adjacent rooms in a hotel. *“Double screen projection widened the visual field and, like the art of historical double-slide projection, increased the opportunity for formal and analytic comparison.”* (Friedberg A. p.209). Warhol created a film that the observer plays the role of the narrator, since he needs to choose which screen to look at and the overall plot is never revealed or explained: *“Throughout the film, viewers must choose which channel to pay attention to and the easiest choice is the channel with accompanying audio. But with some pairings, the action in the silent channel draws the viewer’s attention across the aural barrier... Viewers can choose to create a narrative or just take in what they see as-is.”* [4]



(Andy Warhol, Chelsea Girls, 1966)

[1] - <http://seanmillsartist.com/toolededucation/nodes/10.html>

[2] - Bearitz Colomina, Enclosed by Images, article in Grey Room, MIT Press, 2001

[3] - <http://www.photo-museum.org/daguerre-invention-photo/>

[4] - (<https://ww2.kqed.org/arts/2014/11/04/warhols-cult-classic-chelsea-girls-still-challenges-viewers/>, by Matthew Harriion Tedford)

Personal space of the viewer: individual – social space

Throughout the history of image projecting, Cinema theaters perceived as a commercial-entertainment building type. Architects that designed cinema in early days, were occupied with creating an elaborate, mesmerizing decoration and style. Just like in Tuchinsky (1921), Amsterdam, the entrepreneurs, the architects and the media focused more on the looks rather than questions of space, circulation and the place of the individual. Cinema palaces that copied the architecture of the opera or the theater provided similar space configuration for the viewer, including several terraces and personal cabins. As cinema became more commercialized and modernized, the oval shape of the auditorium changed into the easy-to-manage rectangle. Cinema minimized the observer individual space and freedom of movement: it made the chair into the ultimate viewer-space. The chair became the only owned-dominion for the observer. The fixation of space also fixate the relation between the observer and the image. This also reshaped the interaction between the viewers and space. *“The switch from the kinetoscope viewer to projection device implied a convergence of “physiological optics” with the “noncorporeal” viewing of camera obscura, and a radical shift in the viewer’s position, now seated in front of a screen.”* (Friedberg A. p.87).

Before cinema theaters, in 1889, Thomas Edison invented a peep-show device of moving pictures called **Kinetoscope**. Through the slit of the machinery the viewer could watch a short film (1-2 minutes) that runs in a loop. Edison was not interested in making the invention at first into a mass-viewers experience. He developed it as a wonder to behold for individual observation. The Kinetoscope as a device was perceived as a space-less spectacle.

Henry Norton Marvin, the “rival” of Edison, developed in 1895 an alternative version to the kinetoscope, which was based on flick-book concept. The **Mutoscope** was, like the Kinetoscope, a Peepshow device with a viewing aperture which customers peered into to watch the movie. Unlike the Kinetoscope, the Mutoscope didn’t rely on any special illumination or electricity and gave viewers much greater control over the viewing – for an example they could control the speed of the screening or turning the handle in the reverse direction to produce reverse motion [1]. The individual interaction and the private space was thus exploited for personal modification of the medium. In many cases, the Mutoscope displayed soft-porn which was highly popular and criticized at that time.

This medium allowed such social activity and interaction that actually made the Mutoscope far more resistant to the changing of movie technology in comparison with the Kinetoscope. It is not only the quality of the film, or the comfortable space of the viewer, but the unique medium of the apparatus. *“There is a tendency to conflate all optical devices in the nineteenth century as equally implicated in a vague collective drive to higher and higher standards of verisimilitude. Such an approach often ignores the conceptual and historical singularities of each device.”* (Crary J. p. 110). In this case the conceptual singularity of the Mutoscope, which allowed watching mature themes in a private-public space contributed to the persistence of the device into the 1940’s, while the Kinetoscope lasted only several years. A similar viewing control was available only in the far future of the television.



(The Mutoscope, 1895)

With the rise of popularity, commercializing Edison's Kinetoscope was developed into placing several machines in a "Kinetoscope Parlour" space. Each machine played a different short movie. While the watching experience was individual, visible to the eyes of the viewer alone, he was part of a crowd that waited together in the same space. The first Kinetoscope parlour opened in 1894 on 1155 Broadway Street, New York. Soon after, other Parlours were opened in major cities in USA. A static relation in defined space was established: *"A key component of the viewer's position in the cinematic century was to be immobile in front of the frame of the screen."* (Friedberg A. P.87).



(Kinetoscope Parlour, San Francisco, 1895)

Soon enough the practice of individual picture projection changed into public screenings. Lumier brothers were the first to make a public exposition and Thomas Edison developed his own image projection some time later. Public screening was the result of both projection technology, economical thinking and adopting the theater architecture. The personal position shifted from standing – to seating. The cinema resembled the theater in the relation between the viewers, as they both used the same space (at least during the first decade). Viewers could watch the object, but also each other and be aware of the crowd that filled the space. Cinema was partially a social-event, of watching both the movie and the rest of the observers.

The orthogonal design of the theaters kept the same principle of static-seating viewing, but fixated the linear relation between the viewer and the object. Unlike the theater arched configuration, in the orthogonal theater the relation between the viewers diminished to a minimum – in favor of a more detached “perfect” movie watching experience. There is also the aspect of auditorium composition and the more profitable arrangement of rectangular spaces, which became dominant with the rising of multiplexes.

Drive-In theaters constituted an interesting change of the personal-space of the viewer. The open space cinema theater for cars was patented in 1932 by Richard M. Hollingshead Jr, and gained a nation-wide popularity. Hollingshead experimented mainly with projection and sound techniques, but also constructed ramp system for cars for better viewing. The Drive-In allowed both individual and intimate experience within public environment. At the peak point there were 1000 Drive-Ins in America. Most of those were constructed on agriculture areas, as the costs for upkeep was low as well as the taxation. The new cinema included in their program family fair before evening screening with food kiosks to attract more people for longer time periods. The huge open area became a dynamic space for cars and people, flexible enough to change functions according to time. Drive-Ins effected cinema theaters in USA – as the popularity of the new cinema type arose – small cinema buildings within the city were closed.



(Newspaper article about the first Drive-In, 1932)

Drive-In suggests a mass open theater of scale-up proportions. It is a minimalistic space, to the point where architecture, landscape and parking are mingle together – usually with little design. It is almost forgotten type of architecture, perhaps because of those reasons. The Drive-In problematizes the suburban sprawling and the American worship of the automobile, not only as a transportation device – but as a social status declaration. Drive-Ins were detached from the city, usually constructed in the outskirts of the city. It was the harbinger of the modern huge Cineplex.

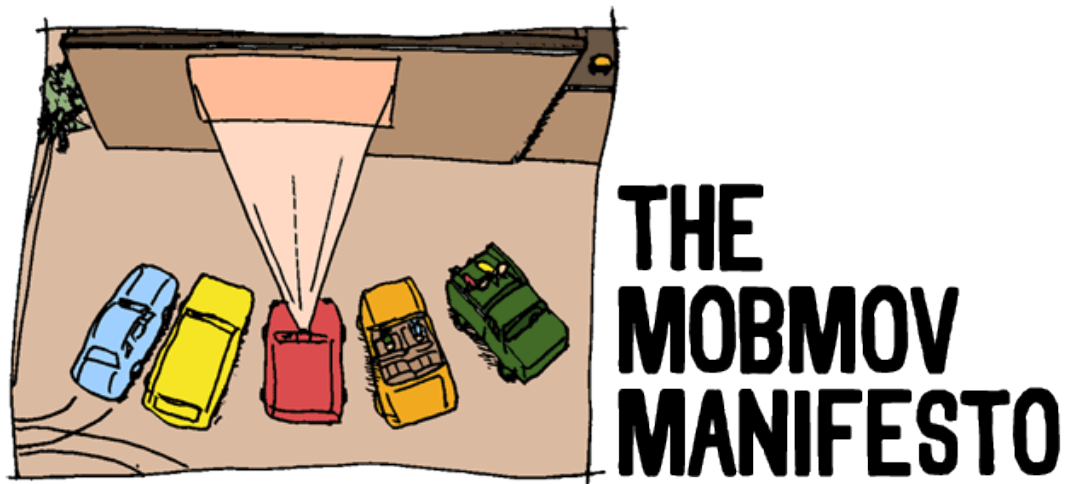


(First Drive-In, Camden, New-Jersey, 1933 [2])

The drive-in singularity of private-public space provided by the car encourages more intimate and romantic behavior. The new cinema was labeled as immoral, passionate place. During the decline of the drive-ins in the 70's, pornographic movies were screened to increase the low income. Cinema Drive-In may be the only architecture that relates to the car beyond the functionality of transportation. It is not a territory that is used for driving – but rather for parking, for staying, for social gathering.

Drive-in lost their status and glory long ago, but there are underground groups who use **guerilla drive-in** (or walk-in) to screen cult movies and socialize. In several places it started as an anarchy movement that protests to reclaim public space. The drive-in is fluid and its location is ever-changing, usually set outside abandoned warehouses, public parks and downtown area. The Guerilla drive-in group of Santa-Cruz states that: *"Beyond showing great free movies year-round and bringing a broad community together, part of our mission is reclaiming public space and transforming our urban environment."* [3] Even smaller, less radical group treat this activity as a hobby meant for meeting people and enjoy the nostalgic atmosphere: *"The Mobmov is a community experience, a place for people to gather and share in the splendor of the great American movie."* [4] Usually groups are organized by hearsay or by the internet. By projecting the film in lost public space as an act of protest –

the movement brings in the viewers and the object into an existing forgotten architecture. The cinema medium with the combination of the private owned car seems like a perfect method for those spontaneous events. This is also a political act, as some groups don't have permission to screen the licensed movies and sometimes police put an end to such gathering because of trespassing or noise. Walter Benjamin declared the idea of cinema as a space-less craft: using drive-in model allows guerilla groups to exploit the potential of movies, to recreate space each time again and again, as the projected image is detached from the limitation of architecture.



[1] - <http://www.earlycinema.com/technology/mutoscope.html>

[2] - <https://nonsensicalblahblahblah.wordpress.com/2008/07/02/the-first-drive-in-invented-by-richard-m-hollingshead-jr/>

[3] - <http://www.guerilladrivein.org/>

[4] - <http://mobmov.org/manifesto/>

Sensory cinema: Static - dynamic viewer

Cinema is about movement, the motion of pictures. Cinema is derived from the French word Cinematographe coined by Lumiere brothers – or a “motion picture projector and camera”. Lumiere brothers took the word from ancient Greek – Kinema – “movement” [1]. Thus the idea of movement and cinema are related, both phonetically and conceptually.

The aspect of movement is quite confined to the medium itself – only the pictures are moving, the spectator remains motionless, or as Deleuze implied: *“This kind of movement no longer depends on a moving body or an object which realizes it, nor on a spirit which reconstitutes it. It is the image which itself moves in itself.”* (Deleuze G., p. 156). That is not to imply that moving spectator and motion picture cannot coexist: advertising boards on highways and on streets are using moving picture, logically, they limit themselves to short sections and exposure time. Art galleries display art-film in loops, liberates the spectator and allows him to come in and go out anytime he feels like. Cinema theaters on the other hand, limit the movement of the spectator and confine him in his seat. The object is approachable only at the beginning of the show. Once the crowd is in the auditorium – the room is well closed and leaving is permitted only by the end and in the interval – if any.

Cinema as a commercial building seeks to control the movement of the spectators. Viewers are not permitted to wander around aimlessly, as in a museum. Cineplex is designed to maximize venues – and the primary way to do so is to govern the motion of the spectators. Thus, the spectator is going through a factory-like process: from the cashier, to the foyer to their seat in the auditorium – and they leave through a separate hallway that leads outside the whole complex of the Cineplex. In this architectural model – spectators are placed and directed to the object – with minimum of free-will wandering. It is an elaborated model of the Diorama Theater, and the observer as a component.

While Cineplex and the commercial cinema reduced the movement of the audience – several experiments were made to grant a “forced motion”. The physical movement of the viewer is considered to be an enhance experience of perceiving the object. It is commercialized as 4th dimension cinema, which involves different senses of the spectators.

In his acclaimed article, **Walter Benjamin** expressed the idea that cinema provides a new way to experience places and re-live them. Benjamin explains in his article (4) that in the 19th century art theoreticians asked the ill and futile question of rather a photography is an art, instead of asking the primary question – how photography changed the whole medium of art. The film theoreticians asked the same hollow question regarding cinema.

Walter Benjamin indicates the notion that the film as medium can be viewed without the existence of space. *“The shooting of a film, especially of a sound film, affords a spectacle unimaginable anywhere at any time before this. It presents a process in which it is impossible to assign to a spectator a viewpoint which would exclude from the actual scene such extraneous accessories as camera equipment, lighting machinery, staff assistants, etc. – unless his eye were on a line parallel with the lens.”* In contrast, the spectator in theater is aware of the place of the play. In theater the play is an integrated part of the place, and vice versa. Cinema is equipment-free art installation. This creates the position of the static viewer, a viewer that in order to experience the movie – needs to be placed in a static spot. Benjamin elaborates about the idea of “aura” – or the mystical feeling of the presence of the

object. This could be the background of mountains or a shadow of a branch. Benjamin claims that this special aura does not exist within the medium of the film – there is no presence to the shot that was taken in a faraway studio long ago. Film is a replica, and replica has no essence. But is this aura essentially real in substance or just the general feeling of perception of our senses?

Drawing the viewer into multi-sensory experience was researched by the **Motron Heiling**, a virtual reality specialist (1926-1997). His experiments led him to create and patent the **Sensorama** in 1962. This machine was a first prototype meant for one person viewing. It projected 3D images, had stereo sound, tilting seat and had tracks for smells and wind to be triggered. Even with the pioneering technology, Morton failed to raise enough funds to create new films and new cinema. Morton continued to research the way human perceive their environment in order to create a futuristic cinema experience.



(Morton Heiling, Sensorama prototype, 1962)

Morton contemplates about the creation of new art and the transition between the objective to the subjective: *"In his creative process, man is imposed on by outer impression. He learns the secrets of their basic principles through imitation and then subjects these to the needs of his own expression. He goes from the reception to imitation to creation. i.e, from portraying the outer world to portraying the inner world."* (3) Meaning that in order to create new inner-experiences man first imitates the outer world that he perceives. This is similar to the concept of Gilles Deleuze, of cinema as a tool for expressing the relation of men and the world: *"the cinematographic image contrasts with the theatrical image in that it goes from the outside to the inside, from the setting to the character, from nature to man... It is thus all the more suitable for showing the reaction of man on nature, or the externalization of man."* (G. Deleuze, p. 161) Morton discusses the next step of

experiencing space – cinema theaters should strive to imitate 100% of all the human senses. According to his manifest, the future cinema theaters will learn how to create new sense materials for each of the senses: shapes, movement, colors, smells, tastes – that were never known before. For enabling an immersion into the imaginary world, it is not enough to build large screens with stereo-set. Rather, it is required to have a spherical, 360 degree, screen-space filled with speakers mimicking most-diminutive natural sounds. The viewer should be aware of the future scenes by small suggestive sensations and signs. Morton Heiling became a corner stone philosopher and inventor for VR and sensory cinema.

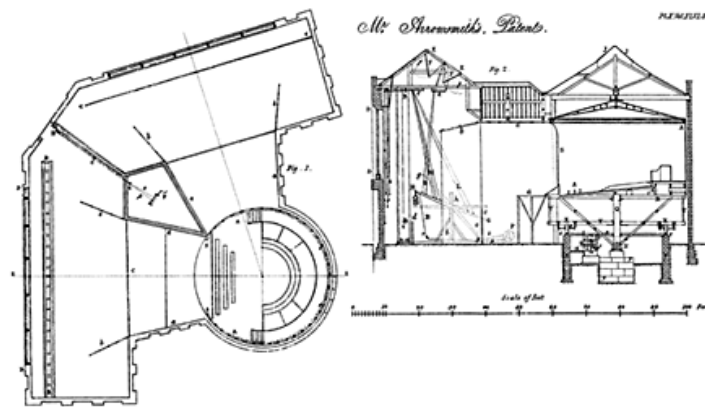
In 1960 the invention of **smell-O-Vision** allowed the release of odors in ordinance with projected movie. The mechanism used several odors to be emitted during the screening to enhance the experience of the movie. The movie "Scent of Mystery" was the first movie which aromas play an integral part within the plot. For an example, the identity of the assassin is revealed by the smell of smoking pipe. However, the new invention was underdeveloped and was soon doomed as a failure dew to distracting noises of the system and problems with the spread of odors. People were worried about unfavorable or disgusting smells, the auditorium had problems of ventilation or odor sticking into the cushions. Smell remained unknown territory in the world of entertainment and cinema.



(Smell-O-Vision ad, aromatic cinema)

The Sensorium in Baltimore (1984) was the first modern attempt of providing motion experience in Cinema Theater. It was commercialize as 4D cinema, and used moving chairs in accordance to the movie. Different cinema theaters provided moving platforms or moving seating. Moving platforms are being used in some entertainment facilities, usually in amusement parks. Sometimes the movement of the viewers could be used to enable a thrilling feeling following the visuals. The first movie that used motion platform was "Honey, I Shrunk the Kids". In several cases the medium is used for education: In the Heineken visitor center observers are placed upon tilting stage to enhance the feeling of "being the beer" inside a movie. Motorized seating is quite common nowadays, each year several movies are being "translated" into motion language of seats. This process is so far only one directional: there are no public movies which use motion as an integral part of the medium, as with smells in the movie Scent of Mystery. 4D cinema is not the first example for usage of moving

platform for image projection: Back in 19th century, the diorama theater presented a rotating stage that turn the spectators from one projected image scenery – to another one. Even though the movement was not part of the process of watching the object – it was an experience of shifting from one view to the other.



(Diorama Theater London, 1823)

Could it be that Cinema Theater creates its own medium and its own perception by being detached from several senses aspects? Should Cinema space strive to mimic the whole spectrum of human senses? The answer seems to shift as the pendulum movement – Film critique and theoreticians in Europe denounced sound synchronized movies, while this technology was happily accepted by the American audience in the early 1930's, making Hollywood the prominent power in cinema production. Morton Sensorama failed to gain momentum, while today's moving seating is natural sight in interactive cinema.

Morton express his idea that in the future when the sensory-cinema would be complete, it will cease to be an entertainment – and ascend to communal culture activity: A speaker will review the movie, the audience will criticize the film by television relays and will continue their discussion over coffee in the adjacent lounge. Thereby, the cinema of the future will reveal new scientific world by: *"sensual vividness and dynamic vitality of his consciousness."* In his almost utopian dream, cinema is more than an object – it is the place for social meeting, for contemplation and scientific brainstorming. In this scenario, cinema evolves from a detach relation between object-viewer-space, and becomes an architectural experiences.

[1] - <https://en.wiktionary.org/wiki/cinema>

[2] - The cinema of the Future, M. Heiling

[3] - The Work of Art in the Age of Mechanical Reproduction, W. Benjamin

Appendix: Interactive Cinema

“Alberti’s fifteenth century metaphor for the window served to frame the geometric, geophysical world... Alberti’s window was not a transparent “window on the world” but it provided us with a Renaissance root for a “windowed elsewhere” – a virtual space that exists on the virtual plane of representation.” (Friedberg A. p.243) As long as this virtual reality existed in a framed 2D space, cinema remained confined to the abstract object domain, and scarcely influenced the 3D space of architecture. This approach is challenged over and over, when cinema and the object become more and more interactive, more and more integrated into our surroundings.

Nowadays screens are more approachable and they represent a digital aspect of our life: Our smart-phones, Smart T.V, Computers, and Tablets – all are windows of visual media, of sound media – as well as personal apparatus that we modify and change by our own will. Today's screens are more interactive and adaptable. Games and softwares allow the user not only to view an object – but also to communicate with it, to alter it. Those apparatuses resemble the Magical Lantern in the sense that they are detached from the physical domain, they have little to do with architecture or a site – except for power supply and a place to sit or stand.

Several experiments were done to delve into **interactive media-architecture**. The **BIX façade** in kunsthaus Graz, Germany, was designed to create an interactive element of the building – the façade can project through the pixelated panels an image into the city. Each pixel is made by a fluorescent lamps panel, which can to be programmed to create animation or a message with the huge configuration of 900 m2 façade. *“It makes it possible to program the façade like a computer monitor and to broadcast projections, animations, or messages into the urban space.”* (1) – The ambition of the designers was to fuse architecture and art – to make a communicative tool.



(Kunsthaus Graz, Austria, Colin Fournier & Peter Cook, 2003)

BIX façade is one example of a screen becoming an architectural component. In the project of the **car garage of Eskenazi Hospital** in Indianapolis, the façade is made out of thousands metal rectangles – which change color according to orientation of the viewer. When a person walks by or a car drives the point of view is changing – therefore changing their perceived color. *“This project sought to explore parallels between techniques of two-*

dimensional image construction and the tectonic considerations present in the design and fabrication of building enclosure.” (2) The architect describe the Façade as: “The project is primarily a large art piece. Secondly, it does of course serve as a visual screen for a normal parking structure behind, masking the normal things one might see such as cars, concrete beams, columns, guardrails, etc.”



(Eskenazi Hospital parking façade, Rob Lei Studio, Indianapolis, 2014)

Those two are recent examples of how architecture is adopting media to make an interactive space. Interaction and communication are terms that seldom define contemporary cinema theaters, nonetheless it is possible for architecture to make it so. Space can be integrated or contrasted the object. Can the object, the projected image itself, change the perception of architecture?

Layered Reality or **Augmented Reality** (AR) is a concept of the image changing the way we perceive space. It is not the substitution of reality with a virtual simulation version as seen on computer screen – but rather the addition of another layer of the digital world into our vision and perception. This is done to display more information, or to create a second “screen” of reality. In Casa Batllo by Gaudi, visitors can move around with a smart device that recreate a virtual-space of the house as it was before, while adding special effects (like animation of door opening, furniture moving etc).

While Morton Heiling is considered the father of sensory cinema and a pioneer of VR, The development of AR is usually referred to another inventor by the name of **Ivan Sutherland**. Sutherland created the first head mounted display set called “Sword of Damocles” in 1968. He envisioned the future of computer display, claiming that keyboards and joysticks would play a major role in the future while considering other methods of display. He describes the ultimate form of display in his article:

"The ultimate display would, of course, be a room within which the computer can control the existence of matter. A chair displayed in such a room would be good enough to sit in. Handcuffs displayed in such a room would be confining, and a bullet displayed in such a room would be fatal. With appropriate programming such a display could literally be the Wonderland into which Alice walked." (I. Sutherland, The Ultimate Display) (3). In this scenario, display is not limited to the virtual world, it's creating a physical substance, controlling matter. The object becomes space, the simulation is existing both in the virtual and the physical world – creation of the inner world - the creation of wonderland.



(Sword of Damocles, Sutherland, 1968)

Sutherland see the potential of AR as a tool to experience not only our own known world, but other intangible realities: *"We live in a physical world whose properties we have come to know well through long familiarity... A display connected to a digital computer gives us a chance to gain familiarity with concepts not realizable in the physical world. It is a looking glass into a mathematical wonderland."* (I. Sutherland, the Ultimate Display)

Sutherland approach is similar to the vision of Heiling to create a display apparatus for all the senses: *"If the task of the display is to serve as a looking-glass into the mathematical wonderland constructed in computer memory, **it should serve as many senses as possible.** So far as I know, no one seriously proposes computer displays of smell, or taste. Excellent audio displays exist, but unfortunately we have little ability to have the computer produce meaningful sounds."*

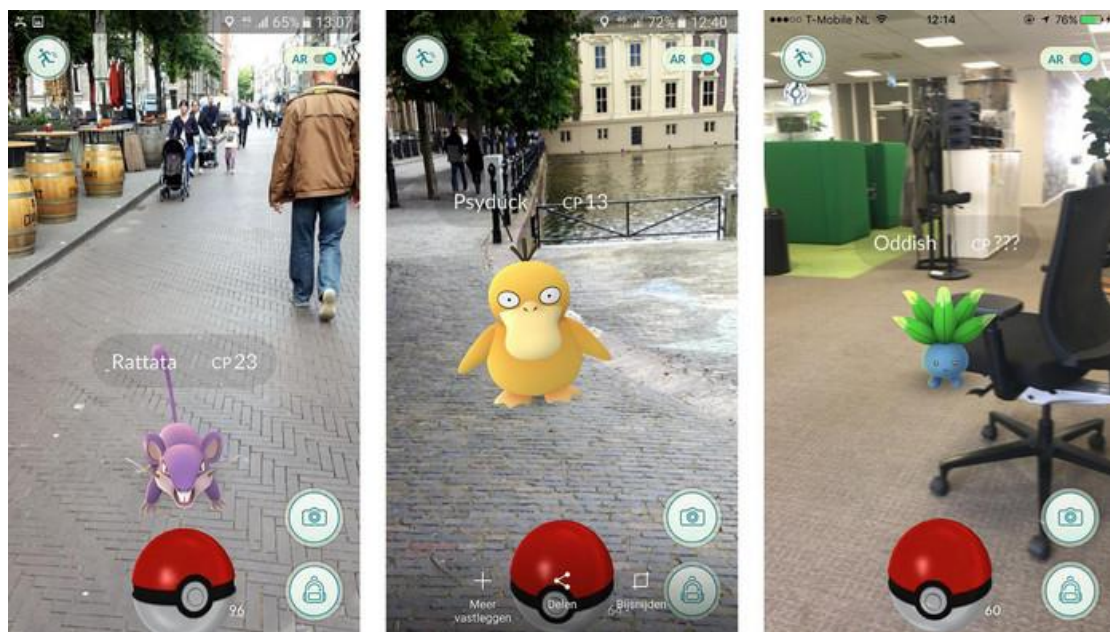
Sutherland approach is still relevant and his pioneering initiative became a widespread field. GoogleGlass by Google, and HoloLens by Microsoft are being used as holographic platform for the user, similar in their purpose to the Sword of Damocles. Different applications are being incorporated into them: Holograms of 3D objects, interactive games, virtual tours and also the use of architectural and design softwares such as SketchUp or Maya. Those apparatuses not only translate 2D programs into the projected image but also develop their own spatial 3D programs and create a new approach of interactivity and surroundings. This edge technology is ever-changing and hard to anticipate or to analyze. What kind of new

Space-object relation can we expect in the future of cinema and interaction? Several contemporary applications only indicate the future urban possibilities.



(Windows, HoloLens, not release yet)

Pokemon-Go is an augmented reality game, Players are using their mobile devices screens as a virtual window to the game, while the game takes place in the real world and uses the GPS in the smart phones to encourage physical activity and increase pedestrian traffic. The game gained international popularity with more than 100 million downloads (for 2016). The game has also well acclaimed urban-social impact since players are forced to move inside the cityscape: *“A perfect storm of 90s nostalgia, gimmicky but impressive tech and social media share potential, the game has been hailed for its ability to **draw players outside to explore their surroundings through virtual lens**, raising their awareness of local interest points and prompting in-person socialization with other players they encounter along the way.”* (4).



(Pokemon-Go, Augmented reality game, The Hague, 2016)

360 degree filming and viewing is already a prominent existing technology. The spherical filming allows a broad perspective of the environment. The viewer takes an active role of “moving” the focal-point and choose his angle when the movie is screening. It is an interactive way of watching and is possible to perceive through special VR glasses or through

regular computer screens (like in YouTube). It is not only used for amusement but as a general medium for education, tourism, and journalism.

It is still too early to draw any conclusion, but it is proven that AR has the potential to increase the interaction between object, viewer and space. Incorporating more applications within this framework could make the city more active and add another layer of social network. But it seems like cinema as architecture is disintegrate in this scenario, it is non-existent, rendered pointless within the new medium and the interactivity era. It may lose any relation to tangible substance.

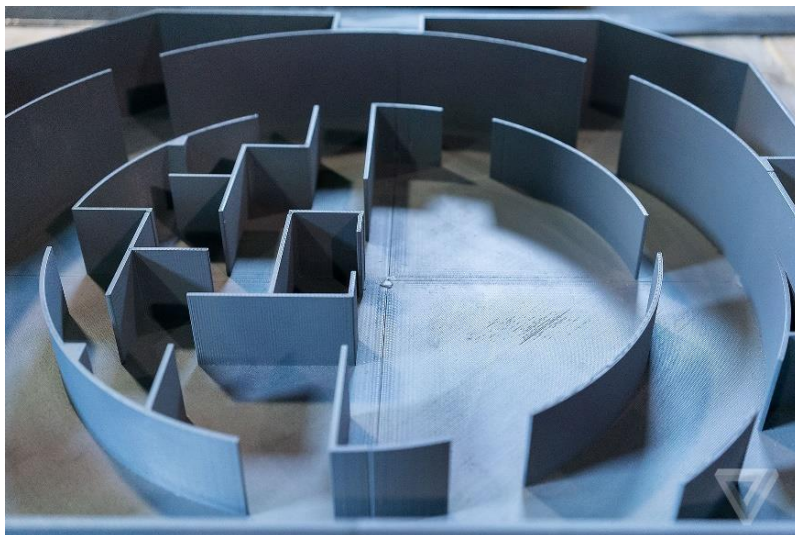
VR Cinema in Amsterdam offers a virtual reality version of cinema. The establishment provides a gear for watching VR and a revolving chair as a place to seat. Each visitor can watch his own media without any interference (or interaction) from the other viewers, each emerge in his own movie. The movies offered are 360 degrees short films. The medium is somewhat similar to the concept of Panorama Theater – the presented image is all around the viewer, which has an active role and decides where to look at. However, it is substantially different in the sense that the viewers don't share the same virtual space: *"movies are made using multiple cameras that are filming simultaneously. Of course, this results in various films, which are 'stitched' together in editing. What you end up with is a very 'wide' video that is projected all around you. Basically, the VR headset allows you to 'scroll' through that wide video using the movement of your head."* (5) The short segments of movies and the medium application remind the Peep-parlours of the Kinetoscope, both have little to do with the physical container. Nonetheless, VR cinema can also function as a bar and has a panoramic view to the street, which makes it far better integrated into the urban fabric than most of modern cinema theaters.



(VR Cinema, Amsterdam, 2015)

If VR cinema replaces space with a virtual version, **AR space** provides a different approach to cinema. **The Void** is a new environment that aspire to create a hyper-reality game arena: *"For the first time in history, it's about living inside an experience with endless possibilities to participate and create. Utilizing a layering of real-time interactive environments, and blending the real world with the digital, our participants are placed into our Hyper-Reality experiences"*. (6) The arena is using AR as a platform for interactive game, while using sensors and responsive environment to modify the physical architectural space. Perhaps this

is a step in the direction that Morton envisioned – by understanding the outer world as an experience of all the senses we can re-create our inner imaginative world. By incorporating image and space, the user is being able to interact with them. The technology and application is still focused on entertainment activities – but this was also the first application of cinema, before integrated into T.V, computers and mobile devices. The CVO envision the future of The Void: *“we are focused on entertainment in the beginning but we have already had interest in education, medical, training, military, shopping, ex... It goes on and on.”* (7). There is still quite a long way to go in terms of integrating the virtual and the physical world, or it could be argued that there is a huge gap between the two, as a reviewer comment: *“it’s actually far less surreal than a non-VR art installation I’ve experienced elsewhere. More importantly, everything I can do just reminds me of what I can’t. I can’t feel the rough stone of the walls, but I can trace the elaborate carvings on them. Heat emanates from a brazier where I light a torch, but not the torch itself. At one point, I’m convinced that I should jump off a ledge, but there’s no fall — someone just pulls me back.”* The interior design of the space reminds a maze. Since the visuals are provided by technology the focus is about easy to construct partitions and the movement as space-experience. The curved hallways are designed to emphasize a feeling of longer passages, while the visuals programmed for the hallway to look almost straight. There are several other companies which plan to create similar projects in Japan, China and USA.



(The Void model, walkable virtual augmented reality space)

Even with the appearance of an actual need for architecture and appropriate space for AR or VR – architecture as a term is absent – it is almost nonexistent in the new emerging of layered reality technology. The architecture field as academic dialogue is averting its gaze from discussing about private and public space in VR, about new ways to perceive the surrounding, about the role of architecture in the world of entertainment. This may be mistranslated as architecture is irrelevant, or unimportant. We may believe that just as with the cinema of the past – the future of cinema is beyond our reach, not only as architects, but also as society. Interactivity of space and object is becoming more and more prominent as big steps are being made to provide new possibilities. The distinction between the virtual world and the real world is becoming less clear – where space and object becomes the playground of the observer. Architects can make this new mixture into a cinematic wonderland.

- (1) - <http://www.archdaily.com/89408/bix-light-and-media-facade-at-moma>
- (2) - <http://www.archdaily.com/536756/parking-structure-art-facade-urbana>
- (3) - <http://www.informit.com/articles/article.aspx?p=2516729&seqNum=2>
- (4) - <http://architizer.com/blog/architecture-in-video-games-pokemon-go/>
- (5) - <https://thevrcinema.com>
- (6) - <https://thevoid.com/>
- (7) - <https://theyoungbusinessmen.com/2015/11/02/out-exclusive-interview-with-the-void-cto-james-jensen/>

Conclusions:

The contemporary Cinema Theater is facing new possibilities with the advancement of image projecting technology and the resurgence of urban questions about the role of cinema architecture. The economy of cinema-architecture is stagnant – or even worse – declining. Small cinema theaters are replaced by bigger Cineplexes, and by more enormous complexes, adding to the suburban sprawl. This type of architecture is championing the usage of car and the construction of Autostradas. It's perfecting the detached auditorium space and the perfect viewing experience: Making the cinema a "black hole" in the urban fabric, and unconnected to other social activities that happens all around it. Cinema is designed by maximal crowd control architecture – directing people through a system of rigid circulation, not enabling the individual to have his own space – or to roam freely. The technology of cinema is not site-specific – and it is available now on any screen, therefore make the cinema less appealing, or necessary in order to watch the medium. In order to adhere the above questions, I choose to inspect the relation of Viewer-Object-Space in the architecture of cinema theaters.

Cinema Theater was not an invented as a building type for years after the presentation of cinema to the public – at first it was integrated into existing buildings and included other attractions and functions. Cinema adopted the base structure of a theater or an opera house, with a stage, rows of seats, elaborate decoration and auxiliary functions. With the need for better regulation and the will to increase venues – the building changed into a more rectangular, "functional", shape. This change also effected the overall experience – other functions were omitted over the years – the stage for actors and band to play music, the café, the organ, and it was reduced to a container of viewing an image, detached from the world, with only the lobby as a façade to attract people.

The conceptualization of the cinema as a building is related to the way the viewer perceive the object. Several "prototypes" of the cinema presented an alternative architecture and a different relation. The Panorama is made out of a circular space and a huge static image, which allowed to viewer to walk around and take an active role in viewing the object. The Diorama made the relation between the observer and the object more linear - and integrated the viewer into "the process" – layers of screens were presented, and the movement of the crowd was possible due to a rotating stage. Those two types of buildings presented a huge leap for crystalizing the viewer-object relation.

Personal Space of the viewer was limited to the chair. The shift into seating enhanced the linear relation of observer and object. Early experiments such as the Kinetoscope or the Mutoscope allowed a different degree of freedom and intimacy with the object, as the users could engage with the medium on a personal level. Cinema theaters establish a very limited definition for personal space or public space, restricting it to the chair and the lobby. Drive-In allowed the observer to bring his own "space" into the space of cinema, and created an interesting mixture of private and public space.

Cinema theaters are containers for the experience of limited visual and sound. Other approach, such as Morton Heiling thought about the social potential of the cinema as a tool to understand the outer world and imagine the inner world, while being a place for discussion and socializing. While this approach in his mind, Morton, tried to experiment with

edge technology that was ahead of his time. Heiling tried to circumference the human senses, to create a perfect virtual space. A space dedicate not only for learning, but also for education and social debates.

Nowadays new technologies are being developed in order to make the observer into a player – and to make the object merge into interactive playground. The subject of architecture for augmented reality or virtual reality is still in his early stages. The integration of the physical world and the virtual one – is a source for endless questions about contemporary architecture, and it is highly relevant to the world of cinema. But this is not a new question, this is not an unapproachable matter: as different philosophers and inventors tried to probe the possibilities of the cinema – in this work I presented a handful of avant-gardes, and their different approaches as to the different strategies. VR or AR cinemas changed substantially the way we perceive space and the object. Places such as The Void or VR Cinema in Amsterdam, are architectural examples for future possibilities.

This paper is only a small step to understand better the world of cinema as architectural phenomenon, and how viewer, object and space correlate with each other. The academic discussion is still missing a lot of essential material about cinema as space. The main arguments are thought provoking rather than provides a defined answer to a problem. Architecture and movies are related, cinema theaters may be described as only a container or an inseparable part of the medium. Further exploration about marketing, urban functionality, style and materials – could reveal other aspects about the changing world of cinema. Applying traditional architectural research tools may reveal new insights and important details. Modifying both space and object is possible and could lead into new types of cinema theaters – or maybe the definition of "Cinema Theater" would become anachronist. Examination of historical references of cinema allows to open a discussion for adjusting the confined, detached architecture – and make it once again a place for social interaction, amazement and relevant for today city and society.

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