

From Spectator to User, From Viewer to (Act)or

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Abstract. Stephen Hawking, when introducing Krauss' 'The Physics of Star Trek', wrote that "[s]cience fiction (...) is not only good fun but it also serves a serious purpose, that of expanding the human imagination." In this paper, following a retrospective juxtaposition of the two last centuries' filmic production, we show how imaginary worlds have become conventional and familiar, while viewers have transformed from mere spectators to users of intelligent technologies. We also exhibit how this led to the emergence of a new generation of users, that of intelligent users, who are now both transmitters and receivers of information, and who perceive urban reality very differently from previous generations.

Keywords. Cinema, city, narrative, technology, information technology, intelligent user

Introduction

The city may be described by its physical parts (i.e., places) as well as by the human activities (e.g., going to work, to eat, out), the public events (e.g., festivals, demonstrations) and the intelligent systems (e.g., smartphones, sensors, antennas) informing and being informed by the activities taking place within the urban web/landscape.

Movies, as well as architecture, create a narrative, introduce sets of rules [2], which, when taken together, develop a paradigm. Documenting and analyzing these elements, we as architects are provided with a new vocabulary and set of tools for reinventing the physical space. The result is not an architectural object or a new movie but the narrative itself; a way of thinking on intelligent environments and a way of thinking on architecture.

This paper focuses on the similarities and differences of the various filmic eras, their impact on the everyday of cinema viewers and the adoption of intelligent technologies by contemporary city users as facilitated by the movies. Within this context, we narrate the progressive shift from the city user, the viewer and perceiver of urban representations of the beginnings of the previous century, to the intelligent user who acts and interacts with the urban context of today. Following a historical-based approach, we illustrate the affective impact of cinema onto the filmic audience and the latter's relationship to the technological achievements of each era. Our main objective is to approach contemporary city users and the way they adopt and assimilate the reality of the cinematic world, which, according to Baudrillard has already occurred: "cinema attempting to abolish itself in the absolute of reality, the real already long absorbed in cinematographic (or televised) hyperreality." [3].

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1. Into the Movies

The big (cinema) screen is a medium through which one may understand and perceive the physical space and the built environment. Therefore, movies, regardless the genre they belong to or the audience they are addressed to, can always be seen as documents that reveal the spatial reality and the social structure of the time they were filmed.

Nevertheless, reality is always captured through the subjective eye of the camera, while, equally so, the viewer may freely interpret the ‘framed’ reality. As viewers, we have been trained for many years to perceive the cinematic reality as our own, trying to find or imagine our role in the story. We do so by substituting the protagonist, reliving the events, occasionally ignoring vague questions or even disregarding any unrealistic representations.

According to Schweinitz [4], cinema tends to create globally widespread visual imaginations, forms of expression and tendencies. Yet, the purpose of this study is not to examine the ways or the methods cinema achieves this. Instead, our hypothesis is, and whose validity we manage to exhibit, that the filmic production of a specific era, concerning a specific place, generates and transforms urban conscience and at the same time familiarizes the city user with technological advances; ultimately, the city user becomes accustomed to today’s intelligent environment with the help of the big screen.

An examination into user familiarization and urban conscience through the filmic production brings the focus of our attention to the ‘screen’ as a medium. The screen-based interaction, which computers and cinema both share, offers an important starting point for our reflection upon the embodied relationship between screen, spectator, and the onscreen computer user [5].

1.1. *The Train Effect*

Cinema has not been invented by the Lumiere brothers. A lot of memorable or forgotten, and sometimes even unappreciated people worked in order to create what the two brothers later named as cinematographer or *cinémographe*, i.e., the machine that records movement. Following the usual convention we will begin our story with them.

It is difficult for us, today, to understand the reactions and the emotions of those few, first, viewers of the films made by the Lumiere brothers. The two brothers photographed the world around them, creating their firsts ‘actuality’ films, in a way presenting a view of their life and their environment. Their first public screening is documented to have taken place on December 28th in 1895 at the Grand Cafe on Paris’ Boulevard de Capuchines, and the programme of short films included ‘La Sortie de usines Lumière’ (1894), ‘La Voltige’ (1895), ‘La Pêche aux poissons rouges’ (1895), ‘La Débarquement du congrès de photographie à Lyons’ (1895), ‘Les Forgerons’ (1895), ‘L’Arroseur arrose’ (1895), ‘Repas de bébé’ (1895), ‘Place des Cordeliers à Lyon’ (1895), and ‘La Mer’ (1895). The number of invited guests was limited to 35 and among them was George Mellies. The reactions of those first spectators are not documented [6].

The next year, according to Loiperdinger [7], another Lumieres’ film, ‘L’Arrivée d’un Train en Gare de La Ciotat’ (1895), gave birth to the documentary film. The film shows, in only fifty seconds, a familiar experience for spectators: a train pulls into a station while the passengers go back and forth on the platform.

The reactions this time were recorded. Journalists of the time described the experience as “excitement bordering on terror”, which sometimes became panic [8].

The German Railway's customer magazine wrote that "[t]he spectators ran out of the hall in terror because the locomotive headed right for them. They feared that it could plunge off the screen and onto them", while Bernard Chardère noted in a succinct fashion that "[t]he locomotive frightened the spectators" [7]. Furthermore, Loiperdinger notes that Emmanuelle Toulet, in his book 'Birth of the Motion Picture' discusses that "[t]he amazement at seeing windswept trees and stormy seas is followed by naked horror when the train approaching the station of La Ciotat appears to move toward them" [9], while they highlight Noël Burch's, an American film critic, statement that, in 1896, the spectators "jumped up from their chairs in shock" [7].

In his study, 'Cinema's Founding Myth', Martin Loiperdinger highlights several interesting points, which caused the aforementioned reactions. For example, the cinematographic train was dashing towards its audience, in flickering black and white rather than in natural colors, neither in natural dimensions. In addition, the only sound present was the repetitive and monotonous clatter of the projector's sprockets engaging into short film's perforation. These elements lead the viewers to feel physically threatened, panicked and as a result, the short film had a particularly lasting impact [7]. The train effect quickly transformed into a myth, or a well spread story, and one may argue that it presents the basic force of cinema itself; when the lights turn off, the audience gets quiet and the projection begins, we, as viewers, enter the world of illusions.

1.2. Fear of Technology and Modernism: the Era of Optimism

Since the beginning of the previous century, architecture, as well as the other representative arts, started wondering about the then emerging proliferation of technology and the form of the city and the building in a technologically developed world (e.g., 'La Citta Nuova' in 1914 by Antonio Sant'Elia, 'Metropolis' in 1927 by Fritz Lang).

Gradually, the representative arts became a battleground for the new laws of urban perception, and the rising uncanny visions of a world, dealing with future problems, gave the reins of humanity to an unknown technologically driven force. The chaotic experience of spatial incoherence and disorientation – characteristics of the new technological metropolis – seemed to be the favorite subject of all the auteurs and creators.

In 'Metropolis', the director provides the viewer with a vision of the urban future, commenting on the relationship between the industrialization, the changes on the urban landscape and the social relations. This imaginary city is organized vertically, celebrating the modernist design and architecture as aesthetic possibilities [10].

The film begins with the two worlds, separated from each other, and where the working class inhabits the underground, degraded city, while the rich industrialists keep for themselves the garden city of the upper world [11]. However, the power of love is able to connect the two worlds (the ultimate intertitle reads "The heart connects the mind and the hand"). At the same time it resolves the problem of class exploitation [12].

Admittedly, the film offers a dystopic imagery of scientists and their laboratories, which was in any case the popular viewpoint of science and its creators at the particular period [13]. Nevertheless, the cityscape negotiates future possibilities, and its happy ending brings forth the era's optimistic vision towards the pressing questions imposed

by the technological achievements of the time and the masses' hope for a better tomorrow.

1.3. Seduced by the Modern City: the Screen as the Place You Want to Be

Eisenstein, the Soviet filmmaker and theorist, in his essay 'Montage and Architecture', first published in 1937, posited that there is a genealogical relation between architecture and cinema [14]. In more detail, the film spectator moves along an imaginary filmic path, travelling both in time and space. This opens up a possibility to perceive the filmic experience in a similar fashion to that of the consumer of architectural space, who wonders within a building or a site, absorbing and connecting the spaces in apposition, thus obliging us to investigate into cinema's creative force to produce space [15].

Recognizable cities have been very important for the development of cinema as they constitute places for filmic representation and filmic production at the same time [12]. As such, the cinema acquires a double role, being both a "product of urban modernity" and the "producer of urban culture" [16]; Berlin of the 1920s (i.e., Weimar city films), Los Angeles in the 1940s (i.e., Film Noir), Paris of the 1960s (i.e., New Wave), are the cities the viewer wants to live in and inhabit, and the movies of each specific period capture fragments of the alluring modern life.

In the Weimar city films, the fascination with technological advances (e.g., diffusion of electricity, public transportation), the architectural infrastructures, the benefits of urban living, and the emerging urban space, all were the center of attention. The enlightenment of the city gave birth to the city's nightlife and new stereotypes and social trends were born. In other words, the cinematic vision of the modern metropolis focuses on its public spaces [12] and the street is now the center of social encounters. However, as social classes mix, the division of space is rising. On the one hand, the female actresses are mainly underprivileged housewives or 'ladies of the evening'. On the other hand, the male characters are flâneurs and are either criminals or the complete opposite, i.e., law enforcements.

Film noir continues the traditions and adopts the aesthetics of the Weimar city films as many German directors immigrated to the USA at the time due to the war. Notable examples of such films are Fritz Lang's 'Scarlet Street' (1945) and 'The Big Heat' (1953). The division of urban space remains, but the roles of genders change; the woman transforms into a femme fatale, i.e., a mysterious, seductive and dangerous existence, incarnating the city, and the private detective becomes the new flâneur, revealing their secrets, i.e., the woman's and the city's. The alienation of the characters finds its expression throughout the lonesome wandering of the protagonists around the city and the uncanny urban space. Another dipole that develops is that of the urban and the rural landscape, representing seduction and safety and seduction, the promise land and the end of the road.

The French New Wave (or *nouvelle vague*) clearly comprised a juxtaposition to the extant studio system in France, shifting in the 1960s the studio production to an *auterism* movement [12], illustrating the Parisian streets [17]. The *nouvelle vague*, as a film movement, lasted officially for just two years, between 1959 and 1960; yet it had a long-term effect on French and international films to come [12]. The male-female, sexuality-innocence, success-failure, rural-urban dipoles continue to exist and the characters continue to be vulnerable and lonesome, while the underlining story remains that of the lead male character with the city and the woman. An additional common

element is the depiction of urban conditions, an archetype that the cinema has been promoting as the new way of ideal living. In essence, one could argue that the emerging urbanization and the large cities' need for working population used cinema as a lever so as to prepare rural populations towards becoming busy citizens.

1.4. Fear of Technology and Dystopian Approaches of the Nearby Future: the Era of Pessimism

The more we move towards the future and approach today's filmic production, we see that concerns regarding humanity's next days as introduced in 'Metropolis' shift considerably. To begin with, it appears that the images of the future come directly from the past, enhanced with a number of technological additions and/or modifications. For instance, a familiar city can be depicted in an unfamiliar way [18], as for example 'Superman' (1978), 'Blade Runner' (1982), 'Dick Tracy' (1990), 'The Truman Show' (1998), 'The Thirteenth Floor' (1999) to name only a few. In addition, technological advancements have allowed movies' introduction into the virtual world ['The Matrix' (1999), 'Dark City' (1998)]; an environment entirely different from the one viewers were familiar with until that point.

However, a paradox comes into being; technological fears materialize themselves and pose questions with regards to the end of the world as machines and alien species in the big screen threaten humanity [19]. In more detail, such fears further intensify as the representation of future cities rely more and more on the use of advanced technologies. While city representations differ from movie to movie, the common denominator of pessimism regarding humanity's future prevails; as Mennel highlights, only the conditions of "human slavery" change and now the underground workers of Metropolis are trapped "in a virtual prison of their own minds" [12].

Within this context, it is interesting to examine these concepts from an architectural perspective, while adopting the time's viewpoint. Deamer posits that the work of visionary European architects of the '60s (e.g., Archigram, Hans Hollein, Coop Himmelblau, Raimund Abraham), who criticized modernism for getting absorbed by the same bureaucratic system it initially hoped to transform, inspired a new generation of architects [20], who, as put by Hollein, begun debating "whether the building was worthwhile discussing" [21], and thus "[t]he object of architecture became the subject himself²" [20]. She further argues that the 'new man', as envisaged by architects in the 1970s, begun rejecting the machine age, mass production, standardization, repetition and the 'machine aesthetic' as a whole.

1.5. Familiarization with Intelligent Technologies

During the last decades, we have been introduced with the virtual space. Its main characteristic is that it is limitless, while it is very different from what we, as viewers, got used to perceive as real space. Since, as a space, it dissolves and reappears every time one uses it, it is interesting to examine how users approach the new concepts of virtuality and digital space, often coupled with internet-enhanced capabilities, using a movie as our analytical tool.

² The male handle is used because this is how specific architects "referred to themselves and reflects the fact that they were indeed all men" [5].

'Terminator 2: Judgment Day' is an example of the dualism generated between digital and analog, in the beginnings of the digital age. James Cameron, the movie's director, takes advantage of the virtual space, whose fluidity and easy transformations allow him to build the storyline based on this dualism. In the movie, the analog - and familiar - machine joins its forces with the people against the evil - and unknown - digital man, who is sent to Earth by a self-aware artificial intelligence system. The analog machine is heavy cyborg, palpable, and fragile compared to its digital counterpart; its gear moves with a pace similar to that of a human heart. In contrast, the digital, shape-shifting, featureless silver man, who represents evil, is fluid; its pulse is its algorithm which helps it regenerate and whose mathematical structure remains enigmatic [22].

'Terminator 2: Judgment Day' illustrates how viewers, by being familiar with a specific technological image, may change their attitude towards technology in general. In more detail, the audience begins now regarding the analog machine, which they used to be afraid of, as their friend and with whom they join forces in order to win a war against the new, unknown digital world. In other words, the filmmaker succeeds in using viewers' familiarization with the machine and their fear to further engage them and build his narrative.

Moving further along into the present, during the 1990s and beyond, the cultural role of the computer changed; from being a mere tool, it became a medium. As the computer became a universal media machine, users interact mainly with data, such as texts, pictures, films, music or even virtual environments, all of which encapsulate bits of culture. Therefore, "we are no longer interfacing to [sic] a computer but to [sic] culture encoded in digital form" [23].

Such interfaces, and one may argue even more advanced, can be seen throughout Steven Spielberg's 'Minority Report' (2002). The director envisaged the world of 2054 and materialized it through cutting-edge technologies, such as automated vehicles, criminal-identifying spiderbots and large retina displays among others. Undoubtedly however, the most influential technology used in this futuristic film is the gesture-controlled panels [24]. Gesture control is certainly not new, with the first projects having been developed in the early 80s [25]. As such, the 'inventions' appearing in 'Minority Report' are not completely new, but rather extensions of extant technologies. Within this context, it should be highlighted that the particular movie illustrates vividly the uses and abuses of scientific and technological knowledge in cinematographic discourse.

Yet, such concepts and representations are present and discernible in many other movies. As a result, the city, urbanity and architecture itself, as cultural foundations, did not remain insensitive to the influence of this cultural and digital new world that has now transformed into an interface. To be more precise, the architectural quest has shifted from being an endeavor in the formalistic expression (quest of form) to a different one, seeking city branding. Modernity's perception that even the habitat is a machine to live in [26] is taken to the extreme with the proliferation of technology, transfiguring ubiquitous computing and connectivity into a ubiquitous sense of habitat.

2. Discussion

Several studies to date have investigated the technological enactments and urban representations as depicted in the cinema, as for example futuristic city landscapes and

advanced technologies [e.g., 1; 27], the human self [e.g., 28; 29], or scenes of catastrophe [e.g., 30]. However, little has been said about the way the cinema has managed to familiarize viewers with technological advancements and transform them into actors and users of advanced information systems.

As shown from our retrospective into cinematic imaginary worlds, these have now become conventional and are being used in a rather automated manner. Schweinitz posits that this was made possible partly through the use of coherent representations, regularity and repetition, which, on the one hand made reception easier, while on the other hand, familiarized viewers with these worlds. Indeed, the audience is warned by music when danger approaches, recognizes Paris from partial views of picturesque cafés, unconsciously knows that it is difficult to hail a taxi in New York. Gradually, the stereotypes presented in popular films, and generally in all other genres, have become cultural signs [4].

We see that, getting familiar with the big screen and what it broadcasts may result in one getting familiar with technology and smaller, smart screens. Ultimately, this suggests that the spectator may transform into the user of intelligent screens and environments, thus controlling the action.

As suggested by Manovich [23], today, some hundred years after cinema's birth, cinematic ways of viewing the world, telling a story and linking experiences to each other, are being augmented and have become avenues for users to gain access into and interact with cultural data. Our society - self-defined as technologically advanced - has been significantly transformed during the past years thanks to smart information systems and intelligent technologies. City users themselves become more and more familiar with touch-focused interfaces, interactive screens and rich media, thus their role within the urban space, toward the built environment and the society at large changes as well, and shift from mere viewers-perceivers to actors. One could argue that users became intelligent within and through the intelligent systems they themselves created and as they became more and more involved with the production of technology and media.

At the same time technology evolved, and so did the films and humanity. The screen of cinematography in the beginnings of the medium scared its first viewers, but as the familiarization process begun and while even interactive screens permeated our lives, people managed to adopt the new imageries and technologies and evolve with them.

As a result, a new generation of users emerged; intelligent users, who perceive urban context and reality very differently from previous generations. City users live in a mixed reality, a reality found in between the real world and that reflected on the various screens populating urban environments. Regardless if this screen is a photograph, an animated screen or the interactive screen of a mobile device, it transmits a sign that seeks to be interpreted so that the user receives its message, and which may be local-dependent or independent. We thus posit that, this mixed space of real and virtual information, within which intelligent users navigate themselves, has transformed the way people perceive architecture and space in general.

All the while, this new intelligent user is connected to the urban environment. As such, (s)he finds her/himself living in a transformed urban environment, the intelligent city, as the two transform each other through technology. Smart screens, smartphones, and interactive technologies among others, enjoy a ubiquitous presence and as they navigate users within traditional urban environments, reveal multiple realities hidden within them. For example, as the user views a landscape through the

smartphone's camera, (s)he can read superimposed information on the device's screen. Such mixed realities create new ways of perceiving the city and, as in the case of the Situationist's Naked City [31], new maps for the traditional city begin to emerge. The city is interpreted on the screens through the help of arrows, pointing to destinations, addresses, restaurants or social events. Users' everyday paths are documented in smart devices, whose miniaturization begun years decades ago [32], while people consult more often the screens that accompany them than the city's analog signs. Furthermore, even city signs have been digitally enhanced (e.g., QR codes, barcodes) and can now be read through the camera of a smart device [33].

It is in such cases that the user doesn't found her/himself solely within the city's reality, nor within that of the smart device's, but (s)he is in between both. This new reality, known as augmented reality [34], offers different spatial experiences to users.

3. Conclusions

Adopting Baudrillard's viewpoint, "[w]e are all, from a global and interactive point of view, actors in [a] total world event" [35], in which the users can create and interact through their avatars within a virtual world. The proliferation of online social networks, hybrid realities and virtual spaces, among others, have accelerated the transformation of users' perceptions regarding their real and virtual social presence, as they can create, manipulate and share their digital personas online in a similar fashion to offline. Therefore, such technologically enabled realities have altered the way we, today, perceive image, self and space. While the screen is still the medium, it is so solely in an indirect manner, constituting merely the interface of our interactions.

Revisiting once more Baudrillard's writings, it is interesting to pay particular attention in his viewpoint that "[t]he immense majority of present day photographic, cinematic, and television images are thought to bear witness to the world...we have spontaneous confidence in their realism" [3]. He further argues that modern masses' behavior is characterized by conformity, as people tend to comply with the paradigms offered – in our case through the big screen - and while they reflect "the objectives imposed on them", they eventually manage to absorb them. Most importantly however, Baudrillard explores the way cinema manages to advertise not only e.g., products, but a way of life in general [3].

In the past, the big screen was the medium transmitting the action to the viewer, while the latter used to be the receiver. Yet, the medium has now shifted. Today, the viewer controls the action, by both transmitting and receiving information, thus becoming the medium her/himself and transforming into an intelligent user. At the same time, the city, as envisaged in the big screen and, consequently, the city people imagined living in, has transformed into the intelligent city of today.

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