Cinema around
"Virtual Reality" techniques

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Abstract

If virtual reality is well known through the medias, it seems that a few visual concepts are clearly related to VR. We try to think about it and introduce to a philosophy of VR techniques. So, from techniques and media techno-powers promotional campaigns, we aim to areal technology, it means an objective reflection on the VR techniques. To do so, we study the representations of VR in films. And we conclude that a negative image is the most common representation, related, often, to an Orwellian vision of the future world. In the second part, we study some VR films, and especially some made by famous film directors (Iñárritu, Bigelow). 'Head-turn' and 'Walk-around' films are commented to check their limits. Finally, we consider that for the moment, VR remains only a new space to screen films (into VR platforms connected to the Internet).

1. Introduction

   This is an essay aiming to introduce VR in an epistemological and theoretical perspective. And first of all, by discussing the concepts of "Virutal" and of "Reality" and of "film". Through this discussion, two aspects around the subject of VR (production, screening, platform, rendering, included) and cinema can be interesting : the representations on VR in films and the use of VR techniques in filmmaking. By techniques we mean a practice, a way to do, and we clearly distinguish it from "technology" which is a complex understanding of techniques. And our goal is to create a theoretical base for a true VR technology. It's very clear that the representations are mostly negative and sometimes very negatives. It means that in the eyes of the producers, the film directors and the scriptwriters VR have more dangerous aspects than positive aspects. But, however, it seems that the subject is attractive because more and more films are talking about it, using it as a dramatic subject. In other hand, filmmaking, in film techniques's practices, the use of VR techniques has a more positive aura. More and more experiences have been done recently, sometimes by famous film directors as we will see. But, however, this trend lingers on, with up and down echoes, and it is often confused with marketing campaigns for specific VR products which are limited in time.

2. Essence of cinema is virtual

   Let's start with a theoretical introduction to certain concepts about cinema and its techniques.

   First, the film doesn't exist, it doesn't exist concretely. At the difference with paintings, sculpture and even music (which can be written and re-playable), the film doesn't stay in the print, doesn't stay "in" the screen, it is an absolute ephemeral illusion, it is a ghost. The scenario and the storyboard are only tools for the preparation of the film, but, at the end, it will be

something else and unique. The film exists only during its screening or its diffusion. So it is only inside the head of the spectators. And this in the now, in the present of the screening (after, it becomes a memory of the film). So, the film is a true virtual reality which takes a shape only with the sensorial organs of the spectators. One example : some film critics wrote about scenes that did not exist in the film, it was only in their percepts. Another example : the effect of the virutal reality of film is when the each spectator doesn't remember exactly the same film. We can also experience something similar during the re-screening of a film : we don't see it in the same way it was, we can see something else, and some parts we saw at the first screening seem to be missing. In brief : the film is a bunch of stimuli which activates a spectator imagery throught his or her percepts.

   A second idea pushes the theory of film in the same direction : the transfer of film from analogic print to digital system was much more important than the young generation of filmmakers and spectators think nowadays. For the generation from the 1990's, this change of techniques was not an easy fact. And we can prove that digitalization is, in fact, the real beginning of VR techniques. First : the film print captures a trace of the real world phenomenon. Cinema is clearly very close to the science of phenomenology (all the modern documentary movement and the realistic aesthetic in fiction deal with it). But, with the digital images, we have a reconstruction more or less artificial of the traces captured (see the Long Gop technique, for example, which record only images of a phenomenon). It means that there is a pre-determination of what the codes and the digitalization as a system can take or lose from the phenomenon (the same thing happens with the digitalization of music). It is an indirect process, already well limited and already far from the phenomenon and consubstantiation of it in the image-trace. As Roland Barthes said (about photography), the negative print is an open window for and to the ghosts, and it can keep a trace of it. That is the reason why many representations of virtual reality in cinema (movies) tried to dramatize their scenario with a "ghost" in the machine (see "Matrix" by the Wachowkis in 1999 or "Avalon" by Mamoru Oshii, 2001, by example).

Note that the "missing part" of the digital system was also an element of imagery in the gamer's culture. They felt that something will be missing in the computers's digital world. So, it is not only a question of quantity of pixels, or size of censors, but a question of process that pushes digital images closer to a human made VR than a trace of a natural phenomenon.

Through those two examples, we can say that the film is virtual by essence. So what is new with VR? The move is in the screening process, and that is the real point of VR. Since the beginning of cinema, the film depends on the screen. The evolution of the "screenalization" of films has moved from the little screen of Thomas Edison to the giant silver screen of the Lumière brothers, and move to television and the internet and return to the small screen of smartphones. But, anyway, a support is always needed for the film to exist. So, the new technical tendencies are trying to eliminate the support, to eliminate the screen. In a way, this problem is similar to painters's researches since the italian Renaissance : how to free the image from any support that unlikely create a limitation to creativity? Virtual reality (or, more specificly, virtual cinema), it is a cinema without a screen. This idea will be taken by cineastes (like Inarritu) who tried to experiment VR, a cinema without a frame or quite, and without screen or almost.

3. Representations of VR in films

As we said in the introduction, représentation of VR techniques in films are almost negatives or very negatives. It is surprising because, for example, the representation of the robot achieved a more mitigated value, with a balance between good and bad aspects. But not the VR. In films, Virtual Reality is often a phenomenon that suggests dehumanization, lost of control, the emergence of the Orwellian Big Brother.

One of the first well known film based on Phillip K.Dick novel, is "Total Recall", in 1990, by Paul Verhoeven. The intrigue is about fake

memories implanted trough VR techniques. The society, and especially the working class, is also in danger through VR fake vacations which are brainwashings. In "The Matrix" another very popular film, in 1999, an alternative world is created through VR techniques. This VR world seems to be beyond control for ordinary people. As in a spectacular society, the people are kept passive and sleepy and as in Plato allegory of the cavern, they are not aware of the truth hidden by the VR world. More recently, the famous director Steven Spielberg (who is an anti-VR supporter, as we will see) made the dystopian film "Ready Player One". In this film, VR is an expansive "oasis" for people living in a post-apocalyptical age which looks miserable. Finally, the heroes decides to limit the expansion of the VR game and to shut it down for a while to push the people to take care of the real world. Spielberg said, in many interviews, that VR will limit the creativity of the cineastes and that they will lose the control of their creations. VR as a new opium of the people (fake paradise and mental prison), is a strong topic of many films. Often, it is a global social issue, but it can be put also on an individual and a personal perspective : the film "Her" by Spike Jonze, shows a VR girl who tries a romance with a lonely man and a woman getting estranged with her real husband. The idea of perfect adequation of the program operating system and the wishes of the connected people becomes a problem, as if the human beings are reduced into mathematical equations. The idea of denial of the real world (feelings and the complexity of the Others) is if not the result, yet the side effect of the simulacras created by VR. VR braudrillardian simulacras are in those films a kind of disease for humanity. This kind of plot still goes on regularly in films and appears again in a film like "Archive" in 2019, in which a man fallen into coma after an accident live throuh an avatar or a simulacra in a VR watched by his wife and kid. He doesn't know that he is a "ghost" in a machine. And finally, because the expansive process is over (upon the decision of the corporate which runs the VR system), he died and disappears from the VR. So, in this film, VR world was a kind of substitute to mourning for his wife. Indeed, it is mainly the social vision of the effects of VR's roles that is negative in films. The technical visions, on the other hand, are more positives (and strongly

supported by info-publicities campaign by the medias). However, even the promotional campaigns lack of results, or are barely proved by VR films which are supposed to be "revolutionnary". But a few spectators have seen them, in fact, like, for example, the very famous VR film directed by Inarritu and some others we would like to discuss in details from now.

4. The use of VR techniques for filmmaking

However, some new filmmakers also give a positive point of view and some results by using VR techniques. Let's take a look, for example, inside the Sundance's New Frontiers section (Sundance film festival). We could find "Notes on Blindness", a VR film based on the life of the writer John Hull when he was losing his sight; Roger Ross Williams's "Traveling Without Black" is a kind of immersion in an African-American restaurant. Williams as a social perspective related to VR. He said that unlike flat-screen documentaries, being surrounded by social characters makes it easier to feel the need for social action, to "act" to change the situation after the experience of viewing the VR film. The concept of "flat-screen" is interesting here. What Williams calls "action" is probably the result of a higher degree of mimesis (signs similar to reality) that has always been the goal and the problem of realistic films. "The Line" is an interactive romance (where the player intervenes on characters drawn in 3D) and "The March" an immersive docu-fiction related to the 1963's Washington demonstration. In fact, we can define those "immersive" films, upon the film categories, as short documentaries and playful cartoons using 360° camera lens.

Well-known filmmakers coming from "flat screens" try the VR experiment too: like Kathryn Bigelow for the film "The Protectors". This 10-minute documentary short produced by the National Geographic follows a rangers patrol in the Garamba National Park in Congo. The rangers follow elephants's ivory hunters and killers. The caption device

puts the camera and its 360° lens in the middle of a bunch of rangers, and it moves with them (This device is called "Head-turn"). So there is always something in front, behind, and on the sides of the camera that create a "presence effect" sometimes surprising : the surprise to see someone behind you. The spectator may turns his or her head or, even, miss something (this is an important fact). But, if the "turning head" of the spectator seems free, the situations are chosen to be meaningful sets (scenes similar to a stage in a theatre) with no specific clues to follow. It means scenes like those in modern documentaries stiles's topic such as "the dinner", "the walk", "the talk" etc. And there is a chronological editing of the "topic scenes", like in classic documentaries on which the VR spectator cannot intervene. This is a contradiction with the announced transition between "storytelling" and "story living", a concept often promoted with VR films. Because, finally, this film is more a "story edited" less open than many video games.

The problem with editing the VR films suggests that the next evolution should therefore move towards the concepts of long and "real-time" shots (the filmic time is equal to the phenomenon time). That lead us to the other tendencies of VR films. As we mentioned before, Inarritu with « Carne y Arena » made a « Walk-around » captation film. This involves the recording and the reconstitution of an area where migrants use to live. Like in a video game, players-viewers can move around the scene. Everything has been digitized and recomposed by a computer. It creates a fusion of virtual creation and real phenomenon. And the result is that "real time" (phenomenological time of the event) is extendable to envy. It is a kind of visual experience similar to a cognitive experiment, and opposed to the sensational, but illusive "effect of presence" of the "Head-turn" films.

In these two VR techniques, thanks to the 360° point of view, the frame of the flat screen disappears. But the problem of time and storytelling remains unsolved. For now, it looks like documentaries and fiction (VR or not) can't be assimilated to a video game. And it seems that a lot of theoretical concepts still have to be clarified in VR films.

5. The theoretical virtues of VR in cinema

In 1955, Morton Heilig's paper "The Cinema of the Future" spoke of revealing, through film, a new world of science at the "level of consciousness". It is similar to Lynette Wallworth's ideas : for her, VR will explore neuronal consciousness : the cognitive experience of an autistic world, for example. Only the VR will be able to do so. The experience of the VR will be one of a physical immersion, not just a visual immersion. But, for now, in many cases, the "level of consciousness" seems to be illustrated only by the use of 360 degrees cameras and shots in "Head-turn"s films. A strong example of this difficult situation is the Argentine film « Metro Veinte: cita ciega » which uses a $360°$ accessible space for its mise-en-scene but doesn't bring anything new to film making or "consciousness" and cognitive experience neither.

Another concept comes from the idea of "Personalized" films (according to Chris Milk at TED Talk 2015) that the VR spectator can share in real-time. According to Milk again, the concept of "story living" will replace the traditional "story telling." But, the problem is that the concept of "living" seems related (for Milk) to a video game or a limited understanding of it. As we mentioned before with the understanding of the world of signs and simulacras, this "living" concept is, in fact, more related to Abraham Moles's categories : signs with a higher degree of iconicity, a higher level of imitation of the real. But nothing else about what is to experience a "living" and a few diffence between "personalized" film and video games.

Some other ideas come from Nonny de la Pena, for her, the future VR cinema will be "volumetric," unlike "flat screens". The entire body of the spectator will be staged in space. This idea is related to the "Walk-around" films such as Eugene Chung's with "Allumette". Chung thinks about creating digital copies of the real world and allows people to walk around and offer multiple stories according to individual choices (or "personalized films"). The genre of horror movie seems to appreciate the arrival of VR. Two films like "11:57" and "Affected" use immersion in

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familiar landscapes, increasing the iconicity level experienced by the spectators. It also creates a semi-interference that blurs the line between film and game. As it happened more then twenty years ago with internet's equipments, it seems that the filmmakers might think that the most interesting points with VR is in its specificities to be a new place to screen their films.

6. VR as alternative screening space and the problem of equipment

First intended for Army players and simulators (Facebook Oculus, for example), VR head-set have seen their price fall (their ergonomics and ease of use too), which seems to encourage filmmakers to think about it. The pandemic has increased head-set sales. Private and indivudal consuming of films is increasing. In many fields, it is also happening, with the teleportation of a localised event and at the same time internationalised event (symposium, teaching classes, surgery, etc).

It is more and more clear and possible to see VR as a venue for screenings and film encounters.

At the industrial level, platforms such as "Altspace", "VRchat" and "Bigscreen" need contents. The platforms are based on the model of "Second Life" but looking for realistic contexts unlike Second Life which ogle to fantastic. Altspace hosts events such as music concerts and chat rooms for private clubs. George Burt, a director of photography, has created his own VR festival on the Altspace platform. It works like a cine-club with avatars discussing the film. With "BigScreen VR" the image quality is superior and avatars can cross in any projections without knowing the members of the cine-club. Another example, is the "DocFest of San Francisco". Cancelled because of coronavirus, it went from live Roxie Theatre to the same, but on VR on the "Bigscreen" platform, in the channel "Ask no question." But only 12 avatars can technically attend at

once. Idem for the CyberiaVR Film Festival on Altspace, with more avatars, but lower image quality. In another field, the Laval Virtual Convention has grown from the usual 500 people to 11,000 in VR. The Cannes XR has also attracted people from around the world. The main problems are the capacity of the virtual rooms, the number of people who can attend an event as an avatar in the platform. But more important : the problem of the inequality of equipment between VR spectators. For example, based on a journalist's experience, with "Oculus Go on" the avatar has only one arm, cannot move his hands, and move very badly. This differs from those who use "Oculus Quest". This inequality is quite different from the collective feeling of spectators in the movie theatres.

But, generally speaking, the improvement in VR techniques seems possible and its use as a space for screenings will grow up, especially in time of pandemics. May be this is the main point of reconciliation of the contradictory goals of the techno-powers and the peolple's expectations we mentioned in our introduction. This is also the roots of a new theoretical approaches we finally built with our researches. This aspect can be connected to the growing representations of VR's situations in films : peaolpe need to think about it throught its representation and imagination. Objectively and may be unexpected (because of the pandemic), VR became a part of the modern imagery for scriptwriters and filmmakers.

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요약문

영화와 가상현실 기술에 대한 소론

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가상 현실이 미디어들 전반에 걸쳐 잘 알려져 있다면, 몇 가지 시각적 개념이 분명 VR과 관련이 있는 것 같다. 본 논문에서 우리는 이런 시각적 개념과 VR 기술의 철학에 대해서 소개하고자 한다. 미디어 기술력의 홍보 캠페인에서 우리는 VR 테크닉을 보여주는 영역 기술들과 영화에서 VR 표현을 살펴본다. 이를 통해 우리는 부정적 이미지 -전체주의적 미래에 대한 오웰적 비전과 관련된- 가 상당히 일반적으로 나타남을 확인한다. 논문의 두 번째 파트에서는 VR 영화들, 특히 이나리투 감독과 비글로우 감독의 작품들을 살펴보고, '고개돌림'과 '걸어다님'의 영화들의 한계를 논한다. 마지막으로 VR이 영화를 상영하는 새로운 공간 혹은 인터넷과 연결된 플랫폼이 되고 있음을 논의한다.

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