

**DIGITAL CINEMA AND 3D EFFECT BETWEEN EXTREME REALISM
AND ACTUALIZED ONEIRIC**

Erika D'Amico

Department of Communication Science and Humanities

Università degli Studi di Urbino "Carlo Bo"



Abstract

*What happens when cinema goes digital? More precisely: what happens when the body of cinema becomes technological and it expands beyond the screen frame (3D)? Digital cinema, especially in its 3D version, seems to follow two paths: 1. an exasperated realism where digital is meant to build up a reality effect; 2. an actualized oneiric state where digital is meant to create dreamlike settings binding emotions to vision. This work is aimed to study this two directions taken by cinema, especially the 3D one, in the latest film production: *Inception*, *Avatar* by James Cameron (2009), *Hugo Cabret* by Martin Scorsese (2011) and *Life of Pi* by Ang Lee (2012), supported by some Media Theory basic authors as Lev Manovich and Marshall McLuhan.*

Key words: *Digital Cinema, Media Theory, New Technologies, 3D, vision, medium, hyperreal, realism, digital effect, McLuhan.*

Premise

The digital technical potentialities make us reconsider the relationship between image and narrative forms. When it's about cinema, this relationship shows a very high complexity and, meantime, a very high prolificness. What happens when technology becomes a digital system? What happens when media, especially cinema, become digital? More precisely: what happens when the body of the cinema becomes technological and it expands beyond the screen frame (3D)? About digital photography Rosalind Krauss (2005) highlighted the capability of digitalization to act as a medium reinvention before. The modern film theory widely gleaned from the cinematographic metaphors created by Vivian Sobchack (1992), according to which cinema as a process is based essentially on three metaphors: *the frame metaphor* (as a context referent, during the signification of the image process); *the window metaphor* (as a perception act, of the screen as a window to the world); *the mirror metaphor* (where the spectator activate an identification process built through the filmic narrative). All these considerations are more likely fitting to the digitalization phenomenon if we take account of the analogy between window and interface. In fact digital highlights the presence of a codex as a mediation term moving the matter from the reproduction to the images production (Fragapane, 2005).

Theoretical analysis

According to McLuhan (1964 p.49), cinema would be an extension of the human senses, born from press, from an exposition to the specificity of the printed character which requires the exercise of the reading competence. Not by chance early cinematographic works were based on novels and fictions. It's

well known the quote “*the content of any medium is always another medium*”¹⁰, statement which stay true given the propensity of cinema to be based on novels, which transposition in 3D seems more fitting than ever. Also McLuhan underlined how fiction, novel, poetry and prose are something that can make people dream and that the dream is the “object of consumption” par excellence. That's how 3D transposes these visual metaphors in the prose form, in three dimension of engagement (always creating technological narcosis). These statement requires that the osmosis between media and human experience must be mixed with more technological precision given that a 3D movie includes in the visual space even the spectator body. Some examples of this fortunate directions are *Avatar* by James Cameron (2009), *Hugo Cabret* by Martin Scorsese (2011) and *Life of Pi* by Ang Lee (2012).

Medium is the message. Just few words to explain how, clearly, the 3d use and the digital technologies in cinema are in fact not only a strengthening of the emotional engagement of the audience but are also integral part of the narrating way and of the story itself. In the case of *Hugo Cabret* the same movie seen in 2D doesn't allow the fully comprehension of some important moments of the story, as for example the train arrival at the Paris station or even the parts where some Méliès effects are quoted. 3D is not only a technology but it's also a practice that requires a specific “use”. The expansion of cinema consumption practices beyond the screens requires operations similar to those used by Salvador Dalí: in art history, it's the moment when the artist understand that the static object, out of his native environment and set in an “other” context, generates art, generates poetry and ousts the dictatorship of the signified on the signifier. So the cinematographic object out of the self/screen leads to a constant redefinition of his own visual and emotional impact. The 3D movie is not a meta-movie, but a movie that can find some place beyond film, therefore McLuhan expression about media as a narcissistic extension becomes truer than ever: *in the electric age we wear all mankind as our skin*. Some eminent contributors as Manovich (2002) and Rodowick (2007), in the complex panorama of cinema studies, declared that the movie, commonly intended as an analogical work printed on film, is dead and that his future must be undeniably a new product form that uses digital to perfect his own narrative constructions or even to create them. Pierre Lévy (1991) has already clarified that virtual represents a sort of strengthening of the entity here considered. But beside some declarations, as strong as questionable, these authors cannot avoid to redirect the theory to a recovery of the past. Techniques evolve fast, but they cannot avoid to rise the production possibilities to strength the narrative form chosen for the movie. The result, in one of the forms that I don't consider the most technologically evolved but surely one of the most interesting from the speculative point of view, is an hybrid product. A syncretic text where languages concerning different media live together with cultural mixes and aesthetic forms of cinema of the past. The place where movie (defined as a work written on film) dies, cinematography revives. That's where the intuition of Metz (1972), that cinema rewrites the relationship between syntagm and paradigm, revives: the digital cinematographic work would be a syntagmatic work, situated on the process axis, where the plane is a

10 Some of the most important contributes about the application of McLuhan opinion to contemporaneity are found in D. de Kerckhove (1984; 1997; 2001; 2011) which is considered McLuhan's intellectual heir, especially for his capability to rearrange the theories of the Canadian mass media expert to the current digital panorama; Bolter and Grusin (2002), starting from the concept of “*the content of any medium is always another medium*”, described a “remediation” theory, actualizing the McLuhan concept and applying his opinion to a digital media contents analysis.

Henry Jenkins is considered one one of the most important thinker to understand “digital culture” traits and his contribution is no less important. In his “manifesto” *Convergence Culture: Where Old and New Media Collide*, New York University Press (2006), he talks about the convergence culture, clarifying through what processes the public “take part” to the media sphere and how these contributions create a sort of collision between new and old media.”

complete utterance and in this case depends on an enunciation that can make infinite changes. Consequences of the digitalization operate on more levels: on one side they exalt the paratextual component through, for example, *the making of* placed as a special content in DVDs. On the other side, on a stylistic level, in some ways they endorse a change in the style concept and force a reinterpretation of genres, maybe even erase the definition, bound to the Genette theory. More likely is a triumph of the metaconversational and a fade of the total mandate of the story given to the Author. The authorial instances of the filmic work fray in thousands operations which realize in the end the digital movie, as a narrative ensemble born by numerous hands. The movie system worked in order to make special effects even more impactful in the user perception and the Hollywood system built his entire conception of making movie behind this philosophy: making real, or hyperreal, what is done in studios. With the coming of digital, live filming starts to have a different foundation: not even more raw matter, but a component combined to other components into the movie making. Using compositing, animation and morphing techniques, it's expressed all the act of film making, it's not just adding something to a movie. Software is the mean trough which editing becomes in all purpose a director competence. Special effects support editing, direction supervises all the process and the operations are related one to the others to create the final story. Concerning this, Manovich wrote an equation:

digital film = live action material + painting + image processing + compositing + 2D computer animation + 3D computer animation

Live action material can either be recorded on film or video or directly in a digital format. Painting, image processing and computer animation refer to the processes of modifying already existent images as well as creating new ones.¹¹ In other words, digital strengthened and reorganized the connection between fabula and syuzhet bringing back the matter not only to the mere narrative, but also to the technological means used to accomplish this narrative path. 3D is the most characterizing expression, the acme of digital cinema. 3D is the perspective from which we can start to analyse the impact of digitalization on filmic contents¹². *Avatar* by James Cameron is a blatant example of this logic. This product modified in a substantial way the relationship between the spectator and the movie watched in theatres. The *Avatar* story takes place in Pandora, a place which is not only alien, for its diversity, but it's also captivating for the spectator who is watching it for the first time in theatres. The reason why it is so captivating is that it's made during the shot to be expandable beyond the screen itself. *Avatar* is born to be in 3D and Pandora is built to be lived by the spectator in an immersive way. In the sequence where the sacred spirits choose Jake, everyone in the audience takes part of the moment enjoying the three-dimensional vision. Concerning this Gino Frezza (2006, p. 439) says¹³:

A movie, which image is a combination between analogical and digital, shows what's non existent [...] while, metaphorically, make plausible the radical process of identification between audience and cinema. Analogical and digital live together where the technologically elaborated images are

11 L. Manovich, *What is digital cinema*, <http://www.manovich.net/TEXT/digital-cinema.html>

12 I have personally watches all the movie quoted in theatres, first in 3D version, then in a 2D version to understand the differences on the content structure level. The interpretation proposed results from a participant observation. Since the purpose of this essay is not to throw light on the fruition dynamics, but on the intrinsic content of the story, this analysis offers a purely specimen study and not a sample survey.

13 **Original text:** Il film che mostra l'immagine risultante dalla composizione fra analogico e digitale, rende visibile ciò che è inesistente [...] mentre, metaforicamente, rende plausibile il radicale processo di identificazione tra pubblico e cinema. L'analogico e il digitale convivono sulla medesima soglia d'ingresso delle immagini elaborate tecnologicamente, le quali s'affermano per un incontrovertibile processo sociale di accettazione, di condivisione e di consumo.

and those assert themselves because of an incontrovertible social process of acknowledgement, sharing and consumption.

There is also a different thesis: technologies bound to cinema are now transportable, they have moved in the “personal” market through iPod, iPad, PC, smartphones, 3D television. This fact made easy the detachment from theatres as a central point for the fruition of the filmic product and nourished an expanded market of the filmic product itself. As Lucilla Albano (1999, p. 296) says¹⁴:

The eighties and the seventies represent, compared with the decades before, a point of structural change and radical break. Cinema changes and “dies” as an imaginary, illusion and dream machine, loses gradually its role as a place of entertainment and amusement. Other structures and systems will take its place [...]. Cinema really “died” when it's about Theatres diffusion, but the fruition channels had multiplied and consumption, first of all of the USA production, had an high rise.

But if *Avatar* can take more than two times people to theatres and if low quality movies such as *My bloody Valentine* by Patrick Lussier (2009) are top selling, probably we are not ready to leave the theatre fruition. Digital, through the 3D form, is able to make work the emotional machine again and its effects are proportional: the more cinema is affected by the technological operations, the more the enchantment of the filmic product becomes consumption, sometimes even exasperated. There's a movie that, more than others, can be considered the example par excellence of the “digital thinking” in cinema: *Inception* by Christopher Nolan (2010). This movie represents a metaphor of the cinema digitalization process and of the “mathematical” interpretation made by Manovich. *Inception* is a visionary story of some professional which job is to leak in others dreams to grab their secrets while sleeping. Their ability is to create credible contexts through which implant or extract ideas from people's mind. Every operation is done splitting dreams in architectural levels. The extraction of the ideas, or their implant, is made gradually passing from an architecture to an other. In every level time is expanded from some minutes to weeks. The name of the architect is obviously Arianna, a name that can easily take us in the mythological imaginary: the architect is Dedalus as well as the girl with the red string, the only one who can understand the crackles in the structure. *Inception* is based on the idea that in dreams everything seems real and that the consequences of a dream have a strong physical impact. What is more attractive is the idea that the perception of reality of those subjects undergoing an implant or an extraction is bound to the ability to create a credible and logical architecture. If the unconscious structure is not realistic, the deceit is unveiled and the unconscious take his own safety measures (in the movie these are real watcher hired to keep secrets safe). If the structure is too much credible the risk is to loose the way out not understanding which level is real and which is dream and unconscious. That's why every “intruder” in the others' mind must bring with himself a totem, an object that behaves in different ways in real life or in the unconscious state. What happens to the characters, happens as well to the spectator. Nobody in the audience knows where he is, if in the unconscious created by the architect or in his real life. Digital cinema seems to take two directions:

- the exasperated realism where digital is a chisel, needed to strengthen the reality effect;
- the actualized dream where digital is needed to create “other” suggestions different from reality and is characterized by spectacular effects and the ability to project in dreamlike setting where the emotion linked to the vision are plausible.

14 **Original text:** Gli anni settanta e ottanta rappresentano, rispetto ai decenni precedenti, un cambiamento e una rottura radicali, strutturali. Il Cinema cambia e «muore» in quanto macchina e fabbrica dell'immaginario, dell'illusione e del sogno; perde progressivamente il suo posto centrale come luogo popolare di svago, divertimento ed evasione. Altre strutture e altri sistemi prenderanno il suo posto[...]. Ma il cinema «muore» soprattutto rispetto alla sua diffusione nelle sale, mentre in realtà si moltiplicano i canali attraverso cui si fruiscono i film e il consumo, soprattutto del prodotto americano, è vertiginosamente aumentato.

3D condenses both this two digital cinema characterization because realism seems to be innate in the immersive cinema. That's why Spagnoletti discerns “hot digital” from “cold digital”. Hot digital is a register used by some directors from *Dogma 95* (*Dogville* by Lars Von Trier is a blatant example): in those movie digital is used to make images more objective and more realistic than ever and to let see to the spectator a perspective on the film overview (Lars Von Trier in his movies often uses a bird's eye view letting know how the cinematographic set is built). Just like a sort of digital eye following actors or actions taking place, in an intimate and close way. Cold digital is when potentialities are used for special effects in a more commercial cinema for the great distribution (Torri, 2005). Can digital, in his 3D form, be considered as a way for cinema to regain its origins, the mechanical fascination, the optical experimentation as an eye following things and events while they are revealing themselves? A first response, maybe the first true response, is provided by *Hugo Cabret* (Martin Scorsese, 2011), cinematographic transposition of the best seller *The invention of Hugo Cabret* by Brian Selznick (*La straordinaria invenzione di Hugo Cabret*, in the italian translation curated by F. Paracchini and edited by Mondadori in 2007). 3D is born as a tool to create special effects, but the stereoscopic vision, at the base of this technology, is not a recent discovery. Until cinema has used 3D to shorten the distance between set objects and audience, technology was just a stand for the vision: a film can be view in 3D or in 2D without changing the narrative form. At the base of these productions there was the idea that the movie has to “stick out” towards the spectator to impress and to engage in the story. As well as in theatrical performance when the actors act form the audience. But true innovation comes when is no more the movie entering the theatre, but is the spectator (and his point of view) entering the movie, seeing everything as a camera sees. It's where we can set *Hugo Cabret* and also where we can set a coming back of cinema of the origins, where Bazin (1973) theories are actual again: long mise-en-scene with very short cuts or changes of framing to make stronger the reality effect and to make more accurate the representation of the filmic subject. In the first part of *Hugo Cabret*, the director makes the audience “pass through” pipes and passages with the main character. The spectator is not forward or behind, but directly on the same point of view of Hugo. Here's the new in Scorsese: makes the audience enter the movie, be part of the story, be “the eyes” of cameras. The *Hugo Cabret* story leads to a cinema reflecting on itself and on its means, with a character who brings back to the essence of cinema: George Méliès. To understand how 3D crosses cinema of the origins, Scorsese creates some little ways “borrowed” indeed from Méliès. For example, one of this expedient is to see a scene through the glass of a fish tank, while fishes crosses the sight, as Méliès has done before in one of his work *Visite sus-marine du Maine* (1898), understanding the value of a smart management of the gap between the spectator's gaze and the director's eye. Scorsese tried also to rebuild a grammar of cinema at the beginning, wanted to pass on an evolving pattern, in which 3D finds its natural place. Time stands still as in *Paris qui dort* (1925), even if there's not the same poetical mutism and the ironical rhythm which made Claire so debated. Hugo becomes, for a whole scene, Harold Lloyd in *Safety Last*. *Modern times* don't exceed the humanity of the vision because Hugo knows the machines and detains with them an intimate relationship bound to the possibility to “bring back to life the past times”. Hugo is not a Chaplin enslaved to the assembly line, but more likely an Antoine Doinel stretched in the effort to put together free expression and the world around. Cinema has watched itself since its first appearance, in *L'arrivée d'un train à la gare de la Ciotat*, and has reflected on the path done trying to conciliate mise-en-scene and reality. Bazin (1973) constantly repeated that cinema destiny was to merge itself with the world around thanks to a stronger connection between reality and image. Although we realized that Bazin hoped that a stronger intervention through film editing could make clearer the narrative continuity. Bazin, as we can found in his Cahiers, followed the idea of a realism, often distressing its logic construction. In *What is Cinema?*, about the realism concept in *Ladri di biciclette* by De Sica (1948), he played the devil's advocate (he was always uncertain about the Italian Neorealism aesthetics) and, even if he was really caught by De Sica's work, he strongly declared that the true essence of the process, started with *Ladri di Biciclette*, is that there are no actors, no story, no mise-en-scene and therefore no cinema. Contemporary cinema, in

Hugo Cabret, explicates instead an extraordinary paradox: 3D seems to be the acme of the digital ploy but, actually, in Scorsese's hands, becomes an extraordinary path leading to realism, a first, amazing attempt to make a connection with cinema of the origins. What cinema thinks of itself? Hugo has the depth of the young Doinel in *Les Quatre Cents Coups* (Truffaut, 1959): his life is made of little ways and recurring fight with adult people, who cannot understand his child language. As an homage to Truffaut, even for him cinema is a safe place, where magic escapes happens. The mechanics are an homage to Fritz Lang and to his masterpiece *Metropolis* and are not just a robotic actions sum. All these things are bound by an exceptional thematic glue: time. Rhythm is beaten by the understanding of the Méliès mystery: it's a Scorsese's homage which created a deal between past cinematographic techniques and modern techniques, hoping long-lasting and communicable to the contemporary directors one. The best result, especially for the contemporary cinema, is that "cinema talks about cinema". If it's true that a precise 3D use can actually affect the director's choice and concentrates the story between realism and oneiric, adding a "technical signifier" to the filmic work, likewise is true that digitalization expresses not only in 3D, but that 3D can be often considered just an optional, an embellishment not really needed in the movie, that nothing gives and nothing takes. This fact does not depend on the story, but on a director's specific choice. If Martin Scorsese "thinks in 3D" - in other words he includes the three dimensions in *Hugo Cabret's* script and in its scenes structures - Ang Lee in *Life of Pi*, makes the opposite operation. Ang Lee uses 3D as a trick that affects only the rhythmical composition of the work, simply strengthening the tension but not changing its nature. For example when the whale reaches the surface near to Pi's boat: in this scene Pi is all alone in the ocean, everything stands still during the night and spectator follows Pi's actions adopting his slow rhythm. When the main character plays with some fluorescent plankton, from the depths surfaces an enormous whale destroying Pi's boat. The quiet is broken by an unexpected event, time of the story explodes dragging with itself the spectator consumption. It happens the same when Pi realizes that he's on the boat with the tiger. In 3D version, the scene follows the stereoscopic principle: tiger walk towards the spectator, not the spectator entering the actantial space of the tiger (otherwise is what happens, in *Hugo Cabret*, when Hugo pass through the air pipes in the train station). All the Ang Lee movie follows the same principle: 3D is a "narrative rhythm break" element built creating a sort of "pop effect" to the audience. In this case 3D becomes accessory to a rhythm of the story pre-set by the director apart from the technological trick. All quoted movies are digital movies and everyone uses 3D in some parts. It is possible, after this examination, to classify them depending on the depth degree of the technology related to the filmic plot? We need to consider two dimensions: *the movie composition*, intended as the transfer of a story in a sequences structure that determines the narrative work; *the digitalization use degree* in the movie composition. Regarding the first point, every filmic work is a result of a composition strategy that, according to the director, gives meaning to the actions and allows the audience to follow how a director "writes" a movie. Regarding the second point, we can estimate the digitalization use identifying some "technological degrees" related to the immersivity and realism level.

We can consider as a first degree film work, one which is made with digital dispositions with the only purpose to economize the work time and to have a better format quality. In this case movie follows no more than the economic principle. Digital makes cleaner images, a more accurate sound, easier takes. This degree impacts especially on movie production and distribution (Murch, 2005).¹⁵ A second degree work is instead a work where digitalization is aimed to "setting recreation" or to simulate contexts that would be expensive and complicated to insert. An example could be *The Gladiator* by Ridley Scott (2000) where the main character walks into a partially digitally rebuilt and "crowded" with virtual people

15 To really understand the economic range of the digital matter bound to the film-editing we can quote the Murch case (editor of *The English patient*) who declared that he has edited the movie at his own home, because of some family matters, and that it has taken half the time.

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Colosseum. A third degree work is a movie where digitalization creates basic elements in the story and without them meaning wouldn't be the same: as for *Jurassic Park* (1992) by Steven Spielberg. Dinosaurs are partially built with advanced softwares and they are really essential for the story development. A fourth degree work is where 3D is used to strengthen realistic, but primary, elements (a butterfly, a whale, a feather, as for example in *Life of Pi*. A 5th degree work is where the "3D thought" really happens, where the director makes some choices directly on the script with the purpose of considering all the three dimension of a cinematographic body: at this level we can find *Avatar* or *Hugo Cabret*. In the end we can say without any doubt that cinema future is unpredictable and that it's not indeed to set the value of a movie on the base of its synergy with new technologies. If, on a hand, we must admit that 3D, as a digital culmination, can influence the spectator involving him in an inclusion mechanism (as the first experiences bound to the movie vision), on the other hand, we can't ignore that digital technology isn't become really essential, but for the distribution level. *The Artist* by Michael Hazanavicius (2011) is a bright example because of its enormous critics and audience success. A warning (maybe?) to cinema not to loose, passing to the new technologies, the value of the narrating story.

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