

MULTI-TASK CINEMA, OR A “WHATEVER STYLE”

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Abstract

What are the effects of digital technologies on film language? This is the central question of this paper and is analyzed regarding the lightness of the new equipment and the technical competence of the new generations. The framework is the Hollywood blockbusters.

Keywords: Blockbusters, film aesthetics, digital technologies, visual effects, editing

"Making a blockbuster provides kind of an indulgence... we shot excessively, we are able to see big sets, use different film languages, putting shots together, weird lenses... Actually, it gives you more freedom. In a smaller movie you cannot afford that kind of freedom in creating images"

Ang Lee

This text seeks to reflect upon the impact that new imaging technologies — from video introduction to computers dependency — have had on more recent generations of cinema, and its effect on film language. The context of the analysis is North American cinema and the Hollywood industry in particular which, as a large production system, absorbs and transforms technological novelty in order to enlarge the scope of its action (in line with the idea of general audiences and the phenomenon of globalization which loses its cultural specificities). From the cinematographic point of view, the immediate consequences of such impact are felt in film language rooted in classical narrative, with particular focus on action and science fiction films; and, from a cultural standpoint, how they precociously manifest themselves in school movies done by a generation with a visual culture also marked by music videos and YouTube cultures.

Two points motivate the analysis that this text intends to conduct: on the one

hand, the lightness and portability of image capturing equipment with increasing quality, whose dissemination created a more immediate (for instance, the independent genre mumblecore in the USA) but also *light* cinema. It requires less editing, or editing with self-contained shots which are no longer based on the invisible editing of classical language. On the other hand, the use imaging software, characteristic of new generations, increased the presence of visual effects in films, which portray themselves as showcases of high-tech, attractions that interrupt the linear narrative.

Despite these significant changes to the modes of production and direction, there are authors that while recognizing these changes in the filmmaking process, still maintain that these do not jeopardize Hollywood's film language system. David Bordwell (cf. 1985, 2006), who has accustomed us to brilliant analysis of the "Hollywood Style", from the classic to the contemporary, is an example. From the "excessively obvious cinema" of the Classic Period remains the overly predictable stories and its heroes, villains and love tales. But the way of telling the story has changed. The character-driven classic no longer exist. Characters with psychological density disappeared, perhaps due to the disappearance of a generation of screenwriters who wrote from a literary culture¹. In its place, a new plot-driven logic arose,² of which the heads were directors from

the Movie Brats generation. They applied their cinematic culture to the blockbusters, which acted as a showcase of new film technologies and use of visual effects (for this reason, nowadays, the sequels and prequels of many movies are the modus operandi of Hollywood, because technology evolves very quickly). Finally, with the generation of David Fincher, which experienced a music video and advertising-based learning, as well as from the experiences influenced by Oliver Stone's video (in *Natural Born Killers*), we are dealing with a new type of visual effects-driven film.

1. Syntax problems

Since it became clear to Hollywood that its success among the public would have to go through telling simple and linear stories without ambiguities, so that movies would be understood — in other words, so that the spectator would only concentrate in the story being told through the screen of new media — it had to find a formula: a syntax that would turn the technologic device transparent in order not to distract the spectator with style or technical artifices.³ D. W. Griffith is unanimously considered responsible for that when claiming that he wanted to tell stories with film in the same way Dickens told his through literary writing.⁴ Griffith had the chance to test that formula during the years he worked at the American Biograph. We

can sum up his procedures in the following way: actors directing in a way they would interact between themselves and not with the camera (hence the prohibition of the actor being able to look at the camera); the interdiction of the cut midst the camera movement (which was not very used) in order not to interrupt the movement; the scarcity of extreme close-ups, so that the spectator would always have the background to spatially place the scene; the placement of the camera in the exact angle to retrieve the largest information possible from a scene. All this accordingly to the continuity system, supported by the connection between movement, gestures and glances through editing. And always with the intention of not confusing the spectator and make him understand linearly and chronologically the story in space and time.

For example, each new scene or change in scenario begins with an establishing or full shot (depending on whether it is an exterior or interior shot) to place the spectator in the action space. Only from this point on, the camera comes closer to the characters' action until its climax, moving away again to allow the shots to breathe. In the sequentially filmed dialogues a shot reverse shot in a 180 degree line is used. As the shot is a means of situating actor and spectator in time and space, it inherits the central vanishing point placement from the Renaissance⁵ that has been trans-

lated into cinema's rule of thirds which divides the screen in nine parts, being the central part occupied by the hero/leading actor. This gives rise to an invisible editing due to match cuts linearity, even when we see alternate and parallel action lines of hero and villain which occur up to a certain narrative's moment in different spaces. The villain is always in a different space until the hero gets him and then two action lines converge within the same space.⁶

The success of this operating system is revealed in its entire splendor in Disney's studios animation, when Walt Disney reaches "the illusion of life" through drawn movement, which gives life to animal characters with human-like behavior. So, in Hollywood, all of this system's subversion can be allowed only in comedy,⁷ science-fiction imaginary worlds (in which the narrative is able to slow down to be fascinated with fantastic extra-terrestrial scenarios and special effects), or in musical's fairytale moments, in which the narrative stops to leave space for the choreographies' visual attraction (as in Busby Berkeley, for example, with their bold camera movements).

Bordwell, in his 2006 book, spoke of continuity system intensification in the 1960s and 1970s.⁸ A possible explanation for the changes in Hollywood's classical languages may be the competing media of television and its images of war (first from Korea, then Vi-

etnam) and of real situations. Images of violence which escaped military sensors, contaminating cinema's imaginary and subverted its romanticized fiction—still far from TV's unveiled morbid interests. This influence was felt in Western in particular, the great North-American genre which encapsulated the country's development history. In westerns, the action scenes have transformed into carnage, of an increasingly explicit violence, as in *The Wild Bunch* (1969) by Sam Peckinpah, on the frontier between western and war film. This has resulted in stories, and consequently, characters' impoverishment. Characters lost their psychological density as they became onlookers of situations aimed at a visual show.⁹ The emphasis on action instead of characters made movies more plot-driven than character-driven. The immediate consequence of such turnaround can be seen in a shortened average shot length and in a harmed match cut, replaced by recurrent jump cuts in its continuity. But video technology, another novelty at the time, has also affected classical syntax's sequence and linearity, with its overlapping and incrustation effects and with split screen frequently replacing parallel and alternated editing and shot reverse shot as in some sequels of *The Thomas Crown Affair* (1968) by Bob Rafelson, for example.

Notwithstanding the intensification of the continuity system (even nowadays

with the increasing use of single shots – disconnecting space relationships between characters and spectators) David Bordwell believes that the language hasn't changed: it just became more extreme. In theory, as regards the argument that Hollywood could not let go of such a successful model is still strong and legitimate. After all, the stories remain predictable¹⁰, but as we'll see in a moment, there are some examples where we cannot talk of syntax evolution, but in its transformation. We understand that for a system to remain active it has to adapt itself to new realities, and filmmaking professionals and the audience from the end of the second decade of the 21st century didn't get the same training as the ones from Hollywood's Golden Age. If the 70's cinematic generation knew all about the television, and if we picture a spectator watching a cinema screen and a television monitor simultaneously or randomly jumping from one to the other, it is justifiable that intensified continuity might have splitscreens and jump cuts and that it might arise from the continuity system. Nowadays, means of attention decreased due to the multiplication of reduced format screens in front of us, but also due to its content, in which linearity gave rise to the flash of light and colour and the pop-up¹¹.

The characteristics that Bordwell points out and that define the intensified continuity are relevant, and there is no

question of that whatsoever. Bordwell is a brilliant analyst but the perplexing aspect about his analysis is, I insist, that he states that there is continuity between this and the classical syntax. The evolution of language requires an improvement of its syntax, rather than trivialization and abandonment. If Noel Carroll had said Movie Brats' generation adopted the cinephilia instead of the Bible and literature as cause for their movies¹², today we can hardly see any traces of «cinema's maturity» in films coming to movie theaters and to the imaginary of a younger audience. In November 2004, at the Dodge College's masterclass at Stanford University, William Friedkin said, with a mixture of humor and concern, that Hollywood's young directors spent all of their films time looking for the shot. It is a relevant statement of a contemporary person from the Movie Brats' generation, but who went from television to cinema.

Bordwell analyses the transformation – not the disruption, I insist – of the continuity system through four procedures on which intensified continuity is based, whose origin dates back to the end of the 70s. And my main point is this: if films from the 60s until the 90s could still relate to the continuity system, to maintain so from the second half of the 90s onwards is more difficult. It's almost as if Movie Brats were mannerists and the generation after them was baroque, because it is a question

of abandonment of film language based on visual culture acquired in the Renaissance and its classical composition. The first example is the fast cutting that reduces the average duration of a shot, in which there are cuts during camera movements which interrupt pan-shots and overviews.

Thinking back to Thelma Shoonmaker's brilliant editing of the final scene of *Cape Fear* (1996) by Scorsese, we then noticed the intensified continuity of energy and excitement in the fight on board. But there is a justification for the camera's ongoing frenzy; the boat is uncontrolled so the camera has no stability. That is why we see the boat's outdoor scenery carried away by the river's flow. But in *Requiem for a Dream* (2000) by Daren Aronofsky, the aunt's amphetamines and the nephew's highs do not justify the hip-hop editing, as the director described it. On the contrary, Ray Liotta's paranoia caused by the use of cocaine in *Goodfellas* (1990) in the hours prior to his trip justifies the editing: the camera reflects the character's mind imagining a helicopter chase. With the arrival of digital editing software, a new editing concept has arisen; the apparent idea of which lies in its technical easiness. Bordwell (2006, p. 156) neatly quotes John McTiernan: "the AVID machine eliminated the last vestige of reluctance to cut, the cost of cutting." The fact that digital editing has made the film editor's work easier, it seems, at the same time that

it took the work of figuring the editing's linearity out.

There is a link between the second change and the use of bipolar extremes of lens lengths. The ultra-wide angle lens became a trend, even if the shot's boundaries become distorted. Today this no longer is found strange, in the same way as the distorting and deforming focus done inside the shot is, too, part of the new syntax. As the tripod became an unnecessary accessory, the shot's concept is increasingly vague. And if the camera is constantly moving, very often in a long take, its lens isn't changed. What might have had a disorientation effect for classical spectators nowadays is not even realized due to its banality. The famous focal extent in the character's entrance shot performed by Madonna in *Dick Tracy* (1990) by Warren Beatty (and the exuberant colors of the closet's clothes) were the only events remembered from the film. If, on the one hand, it is possible to understand, within this context, the depth of focus mannerisms on the *Dick Tracy* character's sensual walk (as seen through the open door by the detective sitting in his office); on the other hand, the constant changes of focus inside the shot in *Spider-Man 3* (2007) are much harder to justify within the scene setting. The third is the reliance on close shots. Because there are no longer characters, only bodies, the speech became hieroglyphic: we have mouths, brows and eyes as

principal sources of information.¹³ Body language was lost and the "ready for the close-up" moment became widespread. The last procedures Bordwell analyzes as typical of intensified continuity are the camera movements. With the steadycam, but in particular with the virtual camera, the camera is usually in motion. In *Rope* (1948), Hitchcock wanted to make a film in a single shot in a virtuosic performance. Gaspar Noé did *Enter the Void* (2009), a film in a single shot. What separates them is stronger than what unites them. Hitchcock was forced to cut it because of the duration of the reels, but Noé used the tricks of the virtual camera to simulate continuous movement. From the almost motionless classical camera we move to perpetual or ostentatious motion whose sole explanation is visual spectacularity. What is most vexing is the use of a «quivering-camera» always looking for the shot.

2. Visual effects-driven films

Changes in the cinematographic syntax of Hollywood's founding model reveal the current generation's habits. On the one hand, computer geeks, fascinated by scientific fiction's parallel worlds (J. R. R. Tolkien, George R. R. Martin, for example) are professionally irreproachable in the software field, and on the other hand, the skateboarder generation with their thrill-seeking GoPros (the result of which *Crank: High Voltage* (2009) is an

example). The first fit in what George Lucas claims to be the painter's method. The film director is now interacting with the screen (and with the computer's keyboard) in the same way a painter does with the canvas: they come close to add a detail and step back to see the results. The post-production takes up a large proportion of movie production time, it is common to hear film students saying that any problem concerning image capturing is solved in post-production. In fact, *DaVinci Resolves*. This is a clear sign of the way computers were given a central position in films, over the camera. The virtual camera rivals the physical camera. Another example of such importance, and that was the focus of the CILECT's Congress, held in Newport Beach, in 2014, is the *Previz*(ualization). Presently, to really be able to finance a film production, it would be better to put forward a preview made in 3-D animation of a movie scene or trailer, rather than a screenplay. No one loses time reading! These kinds of movies, which rely on computer usage, are just as important as their making-off. It is as if movies would be the way for what Hollywood truly wants to say: we are in permanent technological update. There is no longer any possible transparency from the cinematographic device — even when the post-production effects go unnoticed, it's necessary to talk about them in the making-off. The visual-effect-driven movies require that we visit

the factory to see how they were made. The making-off is a cinematographic genre and an economic product. It is the reason why we continue to edit DVDs and Blu-Ray, because films are viewed in movie theaters or they will be pirated on the internet. The visual-effect-driven movies are economic and social insights of technology. They are partial, professional uses, therefore they are clichés preventing insights coming from the outside — how can art lead to a technological accident, for instance? At the CGI, experts never think about the sensitive aspect of their imagery, only about its construction process. A good example of this are making-offs, but also James Cameron's long wait for the advancement of technology, so he could make *Avatar*; two typical cases of technological determinism. Thus, two different approaches can be articulated as follows: on the one side, what matters is what one has to say, and how new technologies can help that; on another side, technology speaks a technical language, closed to the outside, which prevents different types of speech or language. In the age of image industrialization, technology thinks in our place and we lose subjectivity.

The remake also rose to the category of genre. What is important about the remake is not its content as a traditional genre, but to see how much technology has evolved to make the same movie. It is not about being short of new ideas

for a story, because, after all, Hollywood only produced one: in an orderly environment, someone does something which destabilizes the initial order and an all-powerful hero arises and restores it, through a journey of chasing the bad guy and confronting him, in the last climax of the movie. In its course, some heroes fall in love with righteous girls or, in the classical era, lethal women, nowadays solely to justify the sex scenes. Added to the story's artificiality is the artificiality of the film's setting: the actors interact with the blue/green screen. It also happens that the actor's physical body gives its place to the character's virtual body in the motion capture studio. The primacy of computers and visual effects in today's cinema, reminds us of the stop-motion effects at the turn of the nineteenth and twentieth centuries. The spectator's wonder for the "animation" of things on the screen, as if moving pictures would not have been enough. The attractions of the early cinema evolved to also include a narrative, in order to win the erudite audience of theatres and operas. Cinema couldn't have remained in the popular entertainment circuit. But nowadays, with the spectacularization of life, it makes sense that the cinema would be, once again, such attraction. After all, as Thomas Elsaesser once said: "the future of the cinema is its past."

But, as mentioned earlier, there is also a skateboarder generation in constant

movement which makes films as a direct consequence of this: handheld shooting, sometimes very light or virtual cameras, with skating operators. This generation justifies continuous movement, not as an experience of time length (such as slow cinema) but as adrenaline feelings. When we watch these films and their making-off, we realize that we no longer are on the same wavelength as cinematographic realism theses. To Bazin, editing was prohibited whenever it interfered, in space and time, with the event's flow. Today we see the motion of a camera as an urgent way of capturing the action's sensations, trying to place the spectator in that experience (consider the car scene in *Children of Men* (2006).)

However this practice might be the greatest challenge to the very aspect that has made cinema mature: the off-screen. The skateboard generation has existential problems with ageing; the absence of editing is their youth elixir. In early cinema, when we moved from chase films to last minute rescue films by cross cutting two different action spaces at the same time, film came of age in its ability to suggest, by means of staging, actor's direction and editing, what could be simultaneously happening in another place. It wasn't easy to do so, because watching the photographic movement displayed on screen still caused a sense of contradiction and disbelief. Deep down it's whatever the

spectator perceives, but doesn't see, because it was only suggested. Now a film with lengthy takes hampers the imagining possibility given by off screen because it limits the world to the shot. In other words, the shot becomes a formal unit and significantly self-sufficient,¹⁴ hampering the imaginary and cinema's immense suggesting power, acquired whilst maturing. Perhaps this was an effect of globalization and immediate time; space has been reduced to a single global area – without curves or hideouts - where all is permanently visible, which Paul Virilio proclaimed in his thesis about dromology. Orson Welles said that: "a long-playing full shot is what always separates the men from the boys" (Peter Bogdanovich, 1992, 201), although present day long takes don't mean the same thing as they did in Welles' time, nowadays "the camera is likely to prowl even if nothing else budges" (Bordwell, 2006, p. 135), and "boys" are responsible for this. The Mannequin challenge on YouTube is currently an audiences phenomenon. Alain Resnais had created it at *Last Year at Marienbad* (1961) to make a cinematographic time which merged real and imaginary. But what does the mannequin challenge mean? It can only be understood, once again, by emptying the narrative and overrating the artificial. It is the "breakdown of narrative" according to Dixon's most radical position, or the fragmented and anecdotal narrative with the increasing introduction of "dead narrative spaces" so that the artificial

has its cue. We went from "cause and effect" to "pause and effect" (Meadows, 2002).

This brings me to a mannerism, repressed by classical cinema in order not to distort the intended pathos in the relationship between film viewers and the film, made possible through the manufacturing process invisibility. Historically, this mannerism introduced movement in classical composition. We can see this in El Greco's long bodies and Tintoretto's perspectives, as a sign of what was to come next in painting, with baroque's curved and wavy lines, which immersed the viewer in rush and ecstasy. We will have to wait for the stabilization of cinema's digital technology (most likely it will be reached through nanotechnology) in order to evaluate if the present moment is only a mannerist moment, or definitely the industry's entrance in baroque, more visually appealing to high-tech generations, including the implications this has for cinema. Elsaesser states that the word «cinema» does not belong to «digital cinema». Debugging gave rise to excess. Is such excessive excess, this "stylish style", what characterizes post-classical cinema? Bordwell states that post-classical is an innovative way of maintaining the Heritage. Thus, this innovative way is based upon an expressive decoration (visual effects); basic and stereotypical stories; characters' loss of psychological density, loss of quality dialogues

and director's visual acuity, incapable of exploiting a fixed shot to reveal relevant information. An intensified continuity is made by, and targeted at a hyperactive spectator, who can no longer focus. Never before have so many cases of dyslexia, ADD and epilepsy been diagnosed among younger generations. Intensity and saturation cause epilepsy, but as Bordwell puts it: "*the triumph of intensified continuity reminds us that as styles change so do viewing skills*" (Bordwell, 2006, p. 184). Can we, then, have peace of mind?

References

- ALSAESSER, Thomas (2014). "Film and Cinema After Film". Conference delivered in Lisbon, 28 October 2014, Lusófona University.
- BOGDANOVICH, Peter (1992) *This is Orson Welles*. New York: Harper Collins.
- BORDWELL, David, Janet Staiger and Kristin Thompson (1985) *The Classical Hollywood Cinema: Film Style and Mode of Production to 1960*. New York: Columbia University Press.
- BORDWELL, David (2002) "Intensified Continuity: Visual Style in Contemporary American Film". *Film Quarterly* 55, nº 3.
- BORDWELL, David (2006) *The Way Hollywood Tells It. Story and Style in Modern Movies*. Berkeley, Los Angeles, London: University of California Press.
- DIXON, Wheeler Winston (2001) "Twenty-Five Reasons Why It's All Over" in: Jon Lewis (ed.) *The End of Cinema as We Know It: American Film in the Nineties*. New York: New York University Press.
- ELSAESSER, Thomas and Kay Hoffman (eds.)(1998) *Cinema Futures: Caim, Abel, or Cable? The Screen Arts in the Digital Age*. Amsterdam: Amsterdam University Press.
- GIL, Inês (2005) *A Atmosfera no Cinema*. Lisboa: Fundação Calouste Gulbenkian.
- MEADOWS, Mark Stephan (2002) *Pause and Effect. The Art of Interactive Narrative*. Berkeley: New Riders.
- SCHATZ, Thomas (1993) "The New Hollywood" in: Jim Collins, Hilary Radner, and Ava Preacher Collins (eds.) *Film Theory Goes to the Movies*. London: Routledge.
- SEGUIN, Louis (1999) *L'espace au cinema (hors-chaps, hors-d'oeuvre, hors-jeu)*. Toulouse: Ombres.
- VIRILIO, Paul (2009) *The Aesthetics of Disappearance*. Cambridge MA: MIT Press.

Notes

- 1 Some of them are writers like William Faulkner, for example.
- 2 Thomas Schatz suggests that after the 1970's films became "increasingly plot-driven, increasingly visceral, kinetic, and fast-paced, increasingly fantastic (and thus apolitical), and increasingly targeted at younger audiences". Cf. "The New Hollywood" (1993), p. 23.
- 3 This is the "maturity principle" of the cinema when it abandons the "watch me move" attractions for the art of moving image able to tell a story in a "transparent" way.
- 4 This Victorian romance influence in Griffith's cinematographic syntax became famous in Eisenstein's Essay, "Dickens, Griffith and us", that relates the north-American Director method with soviet filmmakers from the leading of the 1920s. But also in the text written by Griffith himself, "Tomorrow's Motion Picture": "There is an idea I would like to stress right here— a very frequently overlooked or neglected, that is — cinema is really a new form of artistic and literary expression". But the emphasis in "new" is important as it adds: "literary ability... is not enough; the applicant for screenwriting must have a screen mind; he must be able to visualize clearly and consecutively... When he writes "Scene I" he must mentally see it reaching out in unbroken continuity to "Finis".
- 5 The framing also separates the spectator from the action: the spectator is a witness and not the actor, therefore the device cannot report its presence, as it used to happen in the attractions system in the cinema early years.
- 6 The alternating editing works until a certain point as Zeno's paradox about the race between Achilles and the turtle: it doesn't matter how fast the warrior is, the turtle always arrives first to the following point. However, as editing links the actions, it will shorten the empty spaces between the hero and the villain, allowing the final en-

counter and climax. See, for example, the famous encounter between Al Pacino and Robert de Niro in *Heat* (1995). At last, the two actors meet in the same shot, even though they had participated together in other movies (*The Godfather*, for example)

- 7 Consider the beginning of *Hellzapoppin* (1941) by H. C. Potter. In animation cinema we notice the subversion present in Warner's and MGM's films. For instance, in *Duck Amuck* (1953) by Chuck Jones, Duffy Duck at all times strives that the director (Bugs Bunny is only revealed at the end of the film) respects the basic rules of syntax application in filmmaking. This is how the films from both studios managed to survive against Disney's «illusion of life» power, which represents the system. But, once again, subversion could only be possible in animation which system of attractions hasn't been abandoned by some studios and artists.
- 8 In fact, in 2002, Bordwell had already written about this subject in "Intensified Continuity: Visual Style in Contemporary American Film".
- 9 For Dixon, the violent spectacle from the large budget movies explain the narrative's collapse. Cf. "Twenty-Five Reasons Why It's All Over", p. 363.
- 10 Due to characters' psychological simplicity, being nothing more than mere instruments which trigger a visual spectacle, the Oedipal dimension of the heroes from some film genres, such as western and film noir, has been lost. In these, the hero carries, as part of their personality, a past and a purpose which prevents them from settling down and having a family. The cowboy and the private detective are dead souls wandering through uncivilized wild places: the Wild West and the city's bas-fond. It used to be jokingly said that in westerns, the cowboy marries the horse in the end. Not even that is said anymore!

11 Our attention is drawn to these flashes: comfortably seated in a movie theatre with great projection and 5.1 sound, we inevitably look away from the screen when our mobile phone's light turns on and a new message arrives, many times from the friend seated two places next to ours. We are vulnerable to stimulus that constantly interrupts our attention and focus. It is in that sense that Scorsese says, in one of his statements in Kent Jones' movie – *Hitchcock/Truffaut* (2015) –, that in the blockbusters we have climax every two minutes.

12 Cf. *Interpreting the Moving Image* (1998). It is also important not to forget that Nouvelle Vague had also departed from cinephilia to undermine cinema's classical language.

13 We should not forget that nowadays' movies are made by the generation who can only give expression or meaning to writing through emojis(☺). The new generation lost the writing refinement (they no longer read, only watch youtube and facebook and play games in consoles and mobile phones), SMS created a new alphabet, therefore emotions put into writing translate in to putting emojis

14 This shot conception defended by Louis Seguin collides with a more consensual one which I mention to justify the off field as the "not seen" that populated the shot as a "presence". Inês Gil (2005) approached this theme as one of the cinematographic atmosphere conditions.

PART II

APPLICATIONS